

The Orangery at Knole Sevenoaks



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and Investigation**



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The Orangery, Knole House, Sevenoaks, Kent

Historic Building Recording and archaeological investigation

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The Orangery at Knole, Sevenoaks

Summary

Oxford Archaeology have been commissioned by The National Trust to undertake a programme of building recording and archaeological investigation on the Orangery at Knole House in Sevenoaks. Knole is among the great English country houses and it has grown in a series of phases largely from the mid 15th to the 18th centuries.

The current investigation centred on Green Court which was established in the late 15th or early 16th century and in particular the southern range, which was probably added in the early 17th century to enclose or enlarge the court. The most likely use of such a range would be as lodgings but considerable doubt on this is cast by the fact that historical views show the range without chimney stacks.

The original internal form of the building and evidence of its primary use have been substantially lost by secondary changes. The main phase of alterations were undertaken in 1823 when the building was converted to a 'new orange house' but documentary evidence suggests that there was at least on other phase of alterations, possibly in the mid 18th century. At the end of the 18th century the building was called the 'old green house' and it may be that the structure had been converted in the 18th century to a garden building for growing or protecting vulnerable fruits and plants. Known secondary alterations include the removal of a first floor (either in 1823 or potentially earlier) and the rebuilding of the south wall in 1823 with tall Gothic windows appropriate for an orangery. Other works included raising the ground level inside the building and covering the internal walls with plaster.

The building would presumably originally have had a staircase, doors, partitions and possibly a chimney stack but the evidence of these have either been removed or obscured by the internal plaster. The attic floor remained in use as part of the private houses of the manor.

Some metres to the north of the building, in the southern lawn of Green Court, a parch mark can be seen when the weather is dry. This mark is believed to extend between a vertical scar in the eastern wall of Green Court's western range and the north-west corner of Kings Tower. The current project included a programme of trial trenching in the area immediately north of the Orangery to investigate this parch mark and this has revealed apparent evidence of the foundations for a wall across the southern part of Green Court. This may have been a former curtain wall enclosing the court rather than a previous building.

Although the exact alignment of the former wall could not be established evidence points to the possibility that it is not quite parallel with the north wall of the orangery and instead is aligned with (at right angles to) very early surviving remains in the east range which pre-date Archbishop Bourchier's Palace. The evidence is too tentative to firmly link the dates of these two areas but it raises interesting possibilities and areas for potential further investigation.

Two small test pits were also opened within the Orangery adjacent to the central doorway in the north wall. These two trenches each revealed aligned footings from a former brick wall. This wall would almost certainly have been a partition subdividing the primary building and it is directly beneath a joist visible within the ceiling. These footings only survive below the primary ground floor level (c.65 cm below the current floor level) which was raised in the 19th century when the building was converted to an Orangery.



In addition to the specific information revealed in the trenches the current work has also provided a fuller record of the Orangery building and it has identified features relating to its original form. These include evidence suggesting that the eastern part of the north elevation is older than the rest of this wall. However the work has not greatly enhanced understanding of the building's original form because the internal walls, which must hold evidence of the previous layout, remain plastered



1 INTRODUCTION

1.1 Background

- 1.1.1 Oxford Archaeology was commissioned by The National Trust to undertake a programme of building recording and archaeological investigation in, and immediately adjacent to, the south range of Green Court at Knole, Sevenoaks, Kent (Fig. 1). This range is currently known as The Orangery. In 2007 OA undertook a thorough archaeological survey, along with a Conservation Management Plan for the whole house. These two works raised some questions and points of interest which would require further investigation in order to have a clearer idea about the origin, historical use and development of The Orangery and the south range of Green Court. There is currently no formal public access to the Orangery and the current study relates to a wider investigation into the feasibility of opening the building (together with several other areas at Knole) to the public.
- 1.1.2 The existing south range of Green Court was probably constructed in the early 17th century although it would have replaced (and potentially incorporated elements of) a previous structure at this end of the court.
- 1.1.3 When the weather is dry, a parch mark is visible in the lawn indicating the likely presence of an previous wall almost certainly pre-dating the present Orangery which enclosed the south end of Green Court. The mark's east end is believed to be next to the King's Tower north-west corner and the west end is thought to be shown by a scar in the eastern wall of the Court's west range.
- 1.1.4 The building was partially rebuilt in 1823 and converted to an orangery and there is very little information about how it looked before and what it was used for. It is largely empty inside and the internal walls are entirely plastered. This is likely to obscure information regarding the previous form of the building and is an obstacle to establishing positive dating/phasing. Other obstacles are the lack of original internal features and evidences of the former layout and heating system (if it ever had one). Only the position of the windows and an off-set in the wall to support timbers for a first floor, both in the north elevation, seem to be the same as they would have been before 1823. The attic may also preserve some reused elements which could help to give some clues about the building's history and development.
- 1.1.5 The current project involved an element of above-ground building recording, concentrating on the Orangery itself, and two distinct elements of trial trenching within the Orangery and immediately to the north of it.

1.2 Aims and objectives

- 1.2.1 The main objective of the building recording element of the project was to extract as much understanding as possible from the current structure. The work aimed to identify those elements preserved from the earlier (17th-century) building, those later elements and those which are common to both, reused or not modified. The next step after that would be to get a clearer idea about the alterations in position, function, design as well as phasing of the south range of Green Court.
- 1.2.2 The main objective of the external archaeological trenching was to investigate the parched mark and record any archaeological remains beneath it. The archaeological intervention then aimed to gain further knowledge of the archaeology within this area, in particular any earlier garden features or structures which may have occupied this part of



Green Court. The investigation will finally make available the results of the archaeological work.

- 1.2.3 The aim of the internal trial trenching was to investigate the raised floor and in particular to look for evidence of a former chimney stack, staircase, floor or wall partitions.
- 1.2.4 The present report tries to provide some conclusive answers to the questions arisen in former and more general investigations.

1.3 Methodology

- 1.3.1 The non-intrusive building recording element of the project was undertaken between November 2008 and the end of January 2009. It included three principal elements: a photographic survey, a drawn survey and a descriptive survey. The photographic survey consisted on general views and specific details (internal and external) and was undertaken using black and white print film (35 mm) and a digital camera. The drawn survey comprised plans and internal elevations, based on an existing metric survey of the building, to add descriptive and analytical detail. The descriptive survey complemented the other survey and added further information to explain the building. The main recording was undertaken by members of the OA Buildings Department.
- 1.3.2 The archaeological external trenching was undertaken during one week at the end of January 2009. Further information on the methodology of this element of the project is included below in Section 5.
- 1.3.3 The internal trenching was undertaken in August 2009. Further information on this is included in Section 6.
- 1.3.4 The investigation included the consultation of the rich background of information on the history of the building previously gathered by several reports and works by OA and others provided by The National Trust (see bibliography). Of particular use in researching the history of the building was a study undertaken by Elizabeth Jamieson and Peter Kidd in September 2008 into the origins and development of several buildings at Knole including the Orangery. This document includes details from a series of historic views and photographs of the Orangery which have not been reproduced here.

2 HISTORICAL BACKGROUND¹

2.1 Introduction

- 2.1.1 The Manor of Knole was purchased by Thomas Bouchier, Archbishop of Canterbury (1454-1486), from Sir William Fiennes, 2nd Lord Saye and Sele, on June 30th 1456 for a sum of £266 13s 4d. Although it is recorded that a house existed at Knole before this date, no definitive evidence of an early house has to date been identified, though observation made during the current project may indicate that vestiges of an earlier structure/s survive within the standing buildings (Fig. 2). Bouchier enclosed the deer park and immediately began work on a house, ranged around two courtyards (Stone and Water Courts) that was far enough advanced for occupation by 1464, and was already being referred to in documents as a '*great house*' by 1468 (Sackville-West, 1922, 22). Bouchier's two successors as Archbishop of Canterbury, John Morton (1486-1500) and William Warham (1503-1532) both expended significant sums on works improving the accommodation of the Palace and the buildings of the Green Court (or at least the

¹ This section is largely based on the unpublished source: Oxford Archaeology *Knole, Sevenaoks, Kent. An Archaeological Survey* (2007) by Ric Tyler; subsequent work by Philip Dixon and others has provided further information on the earlier phases at Knole.



Gatehouse) may originate from this period. It was in 1538, under Warham's successor Thomas Cranmer (1532-1556) that Knole, together with the Palace of Otford, was reluctantly given up to King Henry VIII, part of a prolific campaign of acquisition carried out by the monarch during his reign which saw the number of Royal houses rise to over 60 by 1547 (Thurley 1996, 50). Henry lavished considerable expense on building work at both Knole and Otford, spending £872 in 1541-2, £770 in 1452-3 and £80 in 1543-44, though references to Knole within the *History of the King's Works* are few, suggesting that that much of this money was spent at Otford.

2.1.2 Knole remained in crown hands until 1570, under the ownership of Edward VI, Mary and Elizabeth I, though being variously assigned to John Dudley (Duke of Northampton), Cardinal Pole (Archbishop of Canterbury) and to Robert Dudley (Earl of Leicester). In 1570, Sir Thomas Sackville, cousin and councillor to promptly re-assigned it to a local landowner for the next 37 years, only taking full possession of the house in 1603. On taking possession, however, Dorset immediately set about a major programme of renovation and refurbishment work that lasted until 1608, creating a magnificent series of state rooms and remodelling the house into the form in which, effectively, it comes down to the present day (including the completion or rebuilding of Green Court). Subsequently the house has remained in the ownership or occupation of successive generations of the Sackville family, being acquired by the National Trust in the middle years of the last century.

2.1.3 In 1946, the house together with a part of its collections, the gardens and 100 acres of the 1000 acre Park were handed over to The National Trust, while the Sackville family continue to occupy private apartments within the house under the terms of a 200-year lease. The Sackville Trustees also own the majority of the historic Park, and the surrounding agricultural estate.

2.2 The Orangery

2.2.1 As stated above, the Gatehouse and some buildings in Green Court originate from the periods of Archbishops Morton and Warham at Knole. However, the current south range (which later became the Orangery) was probably built by Thomas Sackville in the early 17th century, when he created or rebuilt the domestic ranges of Green Court .

2.2.2 Documentary research undertaken by Elizabeth Jamieson and Peter Kidd for the National Trust (2008) has provided valuable information regarding the original form and possible use of the building, as well as its subsequent development, although unanswered questions remain. The section below is largely based on their work.

2.2.3 *The Orangery as a domestic range?*

2.2.4 The earliest known historical view to include the building in the current study is a 17th-century drawing which shows the south elevation of the building comprising six pairs of windows at ground and first floor together with three gables each with a single window. A doorway is shown towards the east end of the south elevation as well as a further door in the south wall immediately to the west of the building which later became the Orangery. The faint outline of this former doorway can still be discerned on the external face of the wall and its location is further identified today by a recess on the inner face of the wall and by a bell plate on the outer face. It is interesting to note that the view shows a pair of much taller doorways in the east elevation, similar to those surviving today. The view also shows that there were no chimney stacks in the range which would suggest strongly that the building was not used for accommodation. The many later views also suggest that there has never been a chimney stack in this building. Thus the south range



of Green Court (Orangery) had the appearance of being a storeyed range like the west range, though it may have had mixed uses, like the north range opposite, which had accommodation over stabling.

- 2.2.5 An engraving of c.1698 shows a broadly similar 2-storey building at the south end of Green Court but several inconsistencies with the earlier illustration suggest that it may have been a somewhat schematic view. There are further views dated c.1710 and c.1715 which again show a similar range with regular fenestration at ground and first floor although again there is some minor inconsistency regarding the position of doorways in the south wall.
- 2.2.6 *The first Orangery?*
- 2.2.7 A print of c.1750 shows a significant difference with the earlier views as the two previous doorways now appear to have been replaced by a central doorway in the south elevation with three windows to each side. Thus at this date the elevation appears to be seven bays wide (unlike the earlier six bays). This doorway would have matched the known doorway in the north wall and this arrangement is shown again on later views. The very tall doors in the east wall are again shown, suggesting a need to provide access for tall items into and out of the building.
- 2.2.8 An inventory of 1799 describes the building as *The old Green house* and details that its contents included an 'engine to carry water with pipe and lead cistern, nine green-house stakes (?), a ladder of 39 staves – a carpenter's bench, two hand carriages on 3 wheels each, eleven large table tops & 16 long tressels belonging, nine short tressels'.
- 2.2.9 A watercolour of the building by John Buckler in 1810 shows a central doorway to the south elevation with three windows to either side.
- 2.2.10 In 1817 the building is described as a Green-house by John Bridgeman but the account makes clear that at this date the building was merely used to store lumber and that the former use of the building was not known.
- 2.2.11 *The new Orangery, 1823*
- 2.2.12 Bills and Accounts from 1823 show that considerable work was undertaken to the building at this date to convert it to the 'New Orange House', and detail work undertaken on the Orangery (or at least paid for) between August and November 1823.² Payments include sums to a smith, a mason, a brick layer, an ironmonger, painters, timber merchant, lime burner, two brickmakers, a brick carrier, a cement carrier, two cement makers, a plumber and an oil and colour man. It is interesting to note that the two brickmakers were both women: Sarah Hunt and Elizabeth Couchman.
- 2.2.13 The largest sums paid were to the mason but large sums were also paid to the brickmakers, brick layer and cement maker. The accounts suggest that c.37,000 bricks were provided for the Orangery and this appears to confirm that the entire south wall (other than the facing of the upper section) must have been reconstructed in brick. Although there is no indication of this, the first floor was presumably removed at this time.
- 2.2.14 The accounts also detail the new 'paving tiles' for the Orangery, as well as work japanning a steam pipe and painting a plaster relief. The plumber received sums for work on a new lead cistern 'for the use of Steam Ingin for the Oring house'.

2 Sackville papers held at the Centre for Kentish Studies (transcripts provided by Emma Slocombe of The National Trust).



- 2.2.15 An account of the house from 1839 by John Henry Brady (*The Visitors Guide to Knole*) discusses the sculptures on the walls of the Orangery and states that they were 'brought from the continent with other remains, about twenty years since'. The 'twenty years since' suggests that they were probably installed in the Orangery as part of the 1823 conversion and that they may have been collected specifically to go in this building.
- 2.2.16 There are several photographs from the second half of the 19th century (c.1865-70, 1890) principally of the east end of the building and these show no significant differences in these areas to the surviving building. They do however show that the building contained a substantial number of plants and this suggests that at this date it was a functioning Orangery rather than merely a sculpture gallery.
- 2.2.17 A photograph from 1949 appears to show that by this date the building was used for storage and display of various items. At the north-eastern end of the room is a Buzaglio three-tier stove which is known to have previously been in the Great Hall in 1864, then in the Bottling House by c.1870 and in the Kitchen Hall by c.1874. More recently the Orangery has been used for storage of garden and general items.

3 EXTERNAL DESCRIPTION

3.1 Introduction

- 3.1.1 The Orangery forms the south range of Green Court (Fig. 3). It is a two-storey building (ground floor and attics) with a rectangular plan aligned broadly east-west. It has been built using mainly rough Kentish rag stone with freestone dressings in sandstone.

3.2 North elevation to Green Court

- 3.2.1 The north wall of the Orangery, facing into Green Court, is well preserved and it has probably not altered greatly from when the building was erected in the earlier 17th century. It has 6 two-light windows on the ground floor level as well as 2 doorways: a central one and one at the west end (Plate 1). At 1st floor level it has 7 windows, one above each ground floor window and an additional one above the central doorway. The crenellated parapet is separated from the rest of the façade by means of a string course -an inverted scotia- made of sandstone of lighter yellow colour. This appears to be largely original. The lower part of the wall has a plinth which projects from the wall 0.15m and is c.1m tall, with a slight hollow mould on top. At the east end the plinth steps up to meet the corresponding feature of the Kings Tower, and at the west end it turns down the side of the door.
- 3.2.2 At first glance the elevation appears relatively uniformly built with slightly irregular courses of rough stones. This façade appears to be earlier than King's Tower, at the south end of the eastern range, whose fabric abuts the wall of the southern range of the court. This tower is also later than the rest of its range³ (Plate 7).
- 3.2.3 *Masonry:* The wall is constructed with large irregular ragstone blocks with galleting set in joints. The galleting largely uses fragments of the Kentish rag stone, probably left over after the carving work of the bigger blocks, but it also incorporates small elements of bricks. The composition of the mortar is sandy lime and it frequently has very small pieces of charcoal. This seems to be the original one and it does not appear to have been repointed. The colour tends to be light grey. However, it varies depending on the distance to the downpipes, to areas where vegetation has existed or still exists and even sometimes it has been 'tinted' in red by the weathering out of the stones due to rain.

3 Oxford Archaeology *Knole, Sevenoaks, Kent. An Archaeological Survey* (2007)



- 3.2.4 *Windows:* The window frames and mullions are of a different type of stone which appears to be a limestone, mostly modern, with a few original Reigate pieces. The yellow-grey mortar is composed of thick grain sand and thin gravel, distinct from the rest of the wall. The window mouldings all have a flat and hollow chamfer.
- 3.2.5 *Parapet:* The crenellated parapet is built with smaller rough stones and more regular courses. It comprises 5 courses, the 3 upper as tall as the 2 lower ones (the lowest one is the thickest). Unlike the parapet, the embrasures are not regular and some are made of few big rough ashlar whereas others are made of a higher number of smaller blocks. The coping stones are later and they rest on a layer of thin bricks/tiles of 3 or 4 courses.
- 3.2.6 *Features/Phases:* The east end of the north elevation has some particular features which make it different and maybe earlier than the rest of the fabric, or show delays in building operations. The colour of the stone is darker purplish red and more intense (Plate 6). The rough ashlar are randomly set and they do not keep any clear order, bond or coursing. The boundaries of this zone are indistinct but it is clearly concentrated in this part of the wall and extends at least up to the second pair of windows (on ground and first floors' level) starting from the east. Below the string course, there are two courses of smaller sized stones relatively well worked in comparison to the rest of the fabric. They extend up to the second easternmost window and are made of a different stone as the colour is lighter, similar to the string course. These two courses are between the windows' lintels and the string course whereas there is only one course of rougher reddish grey ashlar between these two elements on the rest of the windows. To the left and above the easternmost window on the first floor there is a straight joint. There is another very similar one on the right of the second easternmost window (Plate 8a and 8b). These straight joints are remains of older windows indicating that there has been a change of fenestration. There are no other joints like these in the rest of the wall. The last distinctive feature is the change of the base, whose topping mould makes a break downwards at this same point to keep running towards the west at a lower height.
- 3.2.7 Several pieces of evidence suggest that the eastern part of the elevation may be earlier than the rest and perhaps belonged to another building or at least to a previous project which was never finished but modified. This evidence includes: the dark colour and irregular bonding of the rough ashlar; the two courses between the string course and the lintels; the higher base and the changes in the fenestration. This previous building's fabric would have had an irregular bond, a higher base, a different fenestration and would have needed two more courses to rise slightly the height of the remaining wall up to the new structure (the rest of the elevation) and top it with the string course and parapet.
- 3.2.8 *Doors:* Between the second and third windows from the east on the ground floor there is a blocked doorway (Plate 9) and there are also marks between the fourth and fifth windows. These could indicate a further blocked doorway but they are more likely to be disturbed masonry around windows (Plate 10). Between the third and fourth windows there is another doorway (Plate 11); this is of a type standard in Green Court, with Reigate jambs having a straight chamfer ending in a brooch stop, and flat four-centred arches made of two large and irregular-shaped stones. This door is not in use as the inward-opening door, being blocked by the raised ground floor (described further in the internal description). This central doorway looks original as there do not seem to be any breaks in the wall. It has one stone step before the threshold. There is another doorway to the west end although it is bricked inside. It has a standard arch like the central doorway, though the arch is irregular and may contain a re-used stone.



3.3 *South Elevation to Gardens*

- 3.3.1 The south façade we can see today is largely the result of the works in 1823 to convert the building to an orangery and to make it suitable to house exotic trees and plants (Plate 2). It is a 9-bay long wall with tall and wide windows to provide good natural illumination and, since it faces south, uses the heat of the sunlight to keep the room warm.
- 3.3.2 The south façade is crowned above the windows by a parapet of roughly coursed dark grey stone in squared blocks with widespread galleting. The parapet appears to be largely primary although internal evidence suggests secondary alterations (detailed further below). It is 5 or 6 courses tall (c.1.2 m) and there are three shaped gables with three-light square-headed mullion windows whose frames and mullions seem to be contemporary to the wall (Plate 14). Gables and parapet are topped by a coping stone probably later than the rest of the structure. The gables are decorated with 4 pinnacles each - two at either side, one on the gable - and with the Sackville leopard on top. To the west of The Orangery's south elevation there is an elevation which belongs to the west range of Green Court. It appears primary and the south elevation of The Orangery looked probably like this wall prior to 1823.
- 3.3.3 The main part of the elevation, containing the nine tall windows, is covered in stucco/render which has been imprinted with grooves to imitate stonework (Plate 13). Within these grooves a separate 'pointing' has been added which is struck diagonally at close intervals presumably to mimic the galleting in the older stonework above. This render has a light brown/ochre colour which contrasts significantly to the grey primary stonework and in areas the imitation pointing has been lost to reveal the shallow groove behind. The structural wall beneath the stucco is not visible in any substantial areas and although it is difficult to be definitive about the date that the render was added, but it is likely to be original from the 1823 works. The windows are also probably original albeit with some elements replaced.
- 3.3.4 At the base of this stucco is a concave plinth with a hollow moulding. This appears to be of 19th (or possibly early 20th) century date but does not appear to be reused. Beneath this sill is a partially coursed ragstone base which may survive from the primary 17th-century building (Plate 12). Within this base there are many fragments of rubble which fill the gaps in the joints between larger blocks and the quality of the construction is quite rough. There are very few features to the elevation but at the western end is a small iron pulley-wheel plate, adjacent to a possible blocked door from the passage.

3.4 *East Elevation to Garden*

- 3.4.1 The east elevation has two wide and tall doorways to allow access for large plants and garden machinery and furniture (Plate 16). The doorways have 4-centred arches with outer hood moulds made of stone which are supported by columns whose capitals, shafts and bases are octagonal. This façade lacks the moulded plinth we have seen on the south elevation and has little surface left for the main fabric due to the large openings. However, the small area of wall is the same as we have described above for the south elevation: stucco of light brownish cream colour, grooves imitating joints as if the wall was built with ashlar, tooling marks, diagonal striking scratched in the grooves and weathered string course. There is also a small off-set plinth in stucco.
- 3.4.2 The east elevation is also crowned by a shaped gable like those on the south façade. There is a coat of arms under the window (presumably of Whitworth and Scakville) with two pairs of heraldic or mythological animals, probably two lions and two eagles, holding one shield each pair, and the two mottoes *Dum spiro spero* and *Aut nunquam*



tentes aut perlice (Plate 17). The coat of arms is probably constructed from Coade Stone and beneath is a Latin motto which is largely obscured. The coat of arms has the date of 1823 although we know that the current gable is later as the date is displayed inside. This gable has some pieces of tile used to fill gaps in the joints between some blocks of stone and this is (something not seen in any of the others).

3.4.3 There is no west elevation because at this side the Orangery adjoins the West Range.

4 INTERNAL DESCRIPTION

4.1 Introduction

4.1.1 The building is today an open-plan, double-height room and it has lost all the presumed original features such as partitions, first floor, staircase and chimney stacks (Plate 4). It is a wide clear room accessible from the east through the doorways mentioned above and from the west by means of a doorway which leads both to the garden and Green Court via a small hall. The internal walls are plastered and largely painted blue (other than areas painted in a later pink) and this plaster obscures evidence of the phasing and previous form of the building. The blue colour fades to white in some parts although there are other parts where it keeps intense like the west wall. These parts have been probably covered by furniture or protected from the sunlight. The floor level has been raised above its primary height and it is likely that this occurred in 1823 when the building was converted to an orangery. The floor level now relates to the higher ground on the southern side of the building rather than the lower ground in Green Court. The building preserves on its walls an interesting collection of stuccoes and relief panels⁴.

4.2 North wall

4.2.1 The north wall largely retains its primary layout of windows prior to the conversion of the building in 1823. The ground floor level inside the building was raised after the 1823 works and this now abuts the central doorway which is about 0.5m below the current floor level (Plate 18). The pintels are in-situ but the door is now held by external bolts and in its current arrangement the door can never have opened or acted as a functioning doorway. The hinges show that the previous door would have opened inwards -something impossible today due to the higher floor level. The jambs seem to have been modified or at least one of them as the eastern one is splayed whereas the other is straight and probably rebuilt. In some places where bits of plaster have come off we can see there is fairly modern brickwork behind. The timber lintel looks later although it is certainly earlier than the rest of the lintels in this wall -described in the following paragraph- as it has been painted with the same blue colour as the wall.

4.2.2 The windows' timber lintels on the ground floor are also secondary and they seem to have been placed relatively recently, possibly 20th century, as the plaster around them is later than the blue paint and it is not on them; some have been inserted and then the edges at either side infilled with pieces of modern brick (Plate 19). The timbers have been reused from elsewhere and some of them are old and some new. Some of the sills have also been modified at an earlier date than the lintels as the blue paint is on the plaster. Areas of plaster have come off and we can see beneath thin bricks or tiles similar to those we described above and placed in the crenellated parapet under the coping stone (Plate 20). However, most of the sills remain covered and it is uncertain if all of them have been equally modified. The plaster has come off in other areas apart from the sills and all have

4 Cliveden Conservation Workshop *Knole Orangery. Item Survey and Advisory Report* (2008)



stonework behind. Above the ground floor lintels there is an off-set (16 cm) of the wall which would have supported the joists for the structure of the former first floor.

- 4.2.3 The windows' lintels on the former first floor have been also re-set and worked either to modify, reinforce or repair them along with the ends of the tie beams as indicated by the large patches of white plaster around them. This appears to be a 20th-century work.

4.3 South wall

- 4.3.1 The south elevation also has some areas of wall exposed where the plaster is coming away, revealing brick. The wall surface in this part of the elevation is painted in pink and this colour is also located where the blue paint was largely rubbed away. Some of the intrados of the arches of the tall windows have also been recently re-plastered probably at the same time as the ends of the tie beams and the windows' lintels on the first floor in the inner northern elevation. The white plaster is evident especially in the two westernmost arches. The easternmost however, has a dark stain that looks like blackened plaster/paint by fire (Plate 21).
- 4.3.2 The window sills are made of 0.3m square brick tiles which have been inserted probably in the 20th century (Plate 22). Some of them have been repaired whereas others have damaged later and have been left in-situ. The windows also appear to be from the 20th century as the details of hinges, bolts, etc. suggest.

4.4 East wall

- 4.4.1 The internal face of the east wall is almost entirely taken by the tall wide openings of the doorways. Some areas of plaster have come off from the lower left jamb of the north arch and this has revealed brickwork behind similar to that which we have seen in the south wall.

4.5 West wall

- 4.5.1 The western elevation is a plain wall with no features apart from the doorway to gain access to The Orangery from Green Court (Plate 23). The doorway is presumably not original as it is at the same higher level as the current ground floor and this is the result of the works in 1823. There are some parts with a more intense blue colour which have been probably covered by some form of decoration, and there are trace of former fittings (shelving?) and of the hatchment that was placed over the door. In the lower south part there is a graffito which consists on a drawing of a Trojan helmet of about 40 x 40 cm (Plate 24), and traces remain of both shelving .

4.6 Floor and Ceiling

- 4.6.1 The current ground floor is probably that which was inserted in 1823 albeit with minor modifications (Plate 25). The rectangular plan is split in two lengthwise by a strip made of flagstones to walk from one end to the other. At either side of this path there is one strip of thick gravel and stones on which the large pots with exotic trees and other plants would have been placed. Large extensions of this surface are currently covered with removable rubber mats. The inner perimeter around the edge of the rectangle comprises a sunken void c.0.4 m wide which is covered by wooden slats. These voids housed heating pipes, some of which are still preserved in the south side.
- 4.6.2 The ceiling (i.e. attic floor) is divided into eight full bays and two half bays by nine tie-beams. The two end beams are set close to the outer walls thus forming the half bays. The lower half of each tie-beam projects beneath the ceiling and their undersides are



supported at each end by c.1.25 m long timber corbels (or bolsters) set into the wall and bolted to the undersides of the tie-beams. These corbels are similar to others in this situation at Knole. The tie-beams are bolted to the corbels. The only east to west member in the ceiling is a centrally set binder in the central bay. It is likely that the subdivision of this bay is an indication of a former staircase and central chimney stack. The ceiling is painted light beige although some parts are plastered in white possibly at the same time as the ends of the tie-beams were repaired (Plate 26).

4.7 The Attic

4.7.1 *Introduction*

4.7.2 A good record of the Orangery roof was created in 2007 by Archaeology South-East during a series of investigation works. At this the roof was uncovered to allow repair and other works to be undertaken and the opportunity was taken to observe and record the roof structure. The roof has seen various alterations but it largely appears to survive from the primary 17th century building.

4.7.3 *Roof structure*

4.7.4 The roof space above the Orangery would historically have been a habitable attic which would have formed part of the primary lodgings but it has now been largely stripped of evidence relating to its primary arrangement. Some traces of its former use survive, largely at the west end, in the form of decorative plaster but it is now largely an open, clear space. The attic is now accessed via the rooms and private premises to the west but it is no longer used as a living area. The primary floorboards have been removed although large modern boards create a walkway along the southern half of the space (Plate 5).

4.7.5 The roof has nine trusses, each one comprising a tie-beam of (31 x 20 cm), a pair of principal rafters (18 x 20 cm, pegged at the apex), collar (20 x 13 cm) and widely spaced primary struts. There are also vertical ashlar pieces towards the end of each truss between common rafters and ties (although not all of these are in-situ). The rafters are tenoned into a single purlin to each slope and the structure was built without a ridge piece. There are ceiling collars between each common rafter which are nailed and appear secondary (as do some of the ashlar pieces). The timbers appear to be of elm. There are between 6 and 9 pairs of common rafters in each bay between trusses. The pairs are tenoned at the apex and rest on top of the wall plates. The wall plate is tenoned into the ends of each principal rafter.

4.7.6 The roof appears to be largely primary although some major works have been done in the 20th century as steel bracing has been added at each end of the tie-beam which is piercing the wall (Plate 28). Each tie beam also has large bolts on the upper face which relate to the bolsters beneath the tie visible within the Orangery. Excluding the most recent collar and ashlar pieces, the rest of the timbers look original from the 17th-century building. The main rafters of the trusses preserve scribed Roman numerals which respect the order of the current structure. Some of them have also smaller chiselled numerals which look more recent but they are not in any order (Plate 29).

4.7.7 *Painted plaster:* At the west end of the attic there survives substantial remains of decorative plaster, of probable 17th or 18th-century date, with a pattern of green leaves on white background (Plate 27). Other evidence which confirms that the attic was a habitable space includes the fact that the roof members have lath marks below collar level. This is particularly apparent towards the east end end.



- 4.7.8 The structure in the visible section of the adjacent roof of the western range is included in the 2007 report by Maggie Henderson of Archaeology South-East on several areas including the Orangery roof. This report was produced when the covering was removed from the roof and thus areas became temporarily exposed. This report details that the roof of the north to south range at the west end appears older than the Orangery roof.
- 4.7.9 *Floor/ceiling structure and possible stair*
- 4.7.10 The ceiling structure, which would have formed the floor structure for the attic, is similar for the most of the 10 bays comprising east to west common joists (19 cm x 7 cm) spanning between the tie-beams. Laths are fixed to the undersides of these joists which support the ceiling of the Orangery and more slender north to south supporting joists (8 x 5 cm) are set into notches in the upper face of the common joists. The upper edge of these supporting joists are flush with the common joists and thus both would have supported the former attic floor. The supporting joists appear to be a secondary alteration and the previous floor would presumably have just been supported by the common joists.
- 4.7.11 The one bay that has a significantly different arrangement is the central bay (Bay 5) where, as referred to above, there is a deeper east to west binder which is visible in the Orangery ceiling (Plate 30). This binder is aligned c.25 cm further to the north than the principal joists referred to above in the other bays and it supports north-south common joists (in contrast to the east-west common joists elsewhere). There are no additional supporting members in this bay and thus the floorboards would just have been supported by the common joists.
- 4.7.12 The joists and binder in this area have chiselled Roman numeral carpenters marks which probably from 1823. The marks run from I to V in alternate gaps and they are only in this bay what indicates that they are later and belong to a work and numeration exclusively started and finished for this part of the structure, i.e. this part is newer than the rest and the timbers are not reused but original. The evidence strongly suggests that the central bay housed a staircase (and possibly chimney stack) in the pre-1823 building and therefore while the floor construction in the other bays was largely retained in the conversion works a new floor had to be added once the stairs and chimney were removed.
- 4.7.13 *Gables to south wall*
- 4.7.14 There are three gables within the south side of the roof which were heavily altered in 1823 and they now have internal brick faces together with later repairs. These are in bays 2, 5 and 8 (from the west end) and there is a further gable at the east end of the structure. In each of these bays the main purlin is raised above the height of the others to incorporate the gable structure.
- 4.7.15 The western gable has its lower half constructed from old bricks of rough quality (5.5cm tall and 21cm long) whereas the upper half is later and is built with more recent bricks. The dividing line is about 0.3m above the sill. The central gable also shows old bricks but the lintel and the upper section above the window were rebuilt in the 20th century. The eastern gable on the south façade looks like the central one (Plate 31). The gable on the west façade has modern bricks and a concrete lintel for the window with the date of 1974 (Plate 32). As detailed above in the external description the external faces of the these gables are of old stonework which has been interpreted from the ground as being primary. It may therefore be that the inner face of these gables were refaced in brick in the 19th century but that the primary external face was retained in this work. Alternatively however it may be that the gables have been fully rebuilt and that the previous stones were reused in the conversion. It is notoriously difficult to accurately date stonework due



to the lack of diagnostic evidence which is for example visible in timber or brick constructions.

- 4.7.16 A further feature which is worthy of note is related to the dark stain produced by fire that we have previously referred to above. The timbers of the roof structure of the western gable on the south façade above the stain are also all blackened by a fire (Plate 33). Apparently this fire affected the wall below although there are no traces of that in the current ceiling so the fire happened before it was built. The blackened timber do not seem to be very affected and seem to preserve the core intact.

5 ARCHAEOLOGICAL TRIAL TRENCHING (EXTERNAL)

5.1 Background

- 5.1.1 As part of the current investigation Oxford Archaeology have also opened two test pits within Green Court, a short distance to the north of the Orangery's north wall. These test pits were positioned to investigate a linear feature which appears on the lawn in this area as a parched mark during dry conditions. The mark is located along the southern part of the lawn approximately 6m from The Orangery's north facing wall. Previous geophysical survey had been conducted on the parched mark but the results were inconclusive. It has been speculated that the line may indicate a wall which pre-dates the 17th-century Orangery and which may have been from a previous range in this area or from a single screen wall enclosing the southern end of Green Court.

5.2 Methodology

- 5.2.1 The test pits were opened over a week towards the end of January 2009 from the 26th to the 30th. Their purpose was to help to identify and establish what, if any, archaeological features existed where the parched mark exists and to add any further evidence and interpretation to the current history of Knole House. A plan of the extent of the excavations was drawn at a scale of 1:500 (Fig. 4) and sections were drawn at a scale of 1:20 (Fig. 5 and Fig. 6). A general photographic record of the work was made using digital and black and white and colour print film. Recording standards follow the procedures detailed in the *OAU Field Manual* (OAU, 1992).

5.3 Results

- 5.3.1 **Test Pit 1:** The first trench was located 6m to the north of The Orangery's north wall towards the southern end of the lawn in Green Court (Plates 34 and 35). It is to the south-east from the main entrance to the court and 4m from the footpath which runs north-south along the west side of Green Court. The test pit measured 2x2m and was dug down to a depth of 1m. Turf was stored in a designated area and subsequently soil removed was stored on plastic sheeting close to the test pit. The lowest deposit was 103 which consisted of a yellow sand. This was approximately 0.7m thick but is probably thicker as the deposit was not fully excavated. Within layer 103 some ceramic building material (cbm) fragments were found. At the southern end of the test pit was found a lead drainage pipe running east-west in orientation. This seemed to line up with the current down pipe from The Orangery giving an approximate date of the pipe around the 1690's. The overlying deposit 103 was a mixed layer of demolition material (102). Deposit 102 consisted of broken roof tiles, stone and a silt soil matrix. This was found at 0.18m from the surface. Overlying 102 was the topsoil horizon 101.
- 5.3.2 **Test Pit 2:** The second trench was located 12m to the east of the first and 9m to the west of the tower at the south-east corner of Green Court (Plates 36 and 37) It was again c.6m



to the north of the Orangery. Test pit 2 measured 2x2m and was dug down to a depth of 0.44m. The lowest deposit was a clay soil matrix (202) which may have been used as a levelling layer prior to the construction of foundation wall trench 204. Foundation wall cut 204 is located on the northern side of test pit 2 and is filled by 205 which appears to be a foundation base. The foundations consisted on local stone which is roughly hewn and a pale grey in colour and measure 0.15-0.4m. Some of the stone appears to have been tipped in as if it may have been robbed during the demolition phase of the earlier southern curtain wall which has left a scar on the eastern wall of the Green Court's west range. Overlying the foundation wall was deposit 203 which mostly consisted of broken roof tile and was probably used as part of the levelling of the ground level after the demolition of wall 205. Overlying foundation base 205 was deposit 206, which is a demolition layer located to the north of wall 205; which appears to be a tip suggesting that this may be remnants of the wall and roof structure of the once southern curtain wall, which has been later used as a levelling deposit. Overlying 206 was a soil horizon of topsoil 201.

5.4 Environmental samples and Finds

5.4.1 No samples were taken during excavation works. Finds were retrieved from both of the test pits. A finds report can be found within the appendices.

5.5 The alignment of the remains

5.5.1 The archaeological excavation was undertaken at the end of January and clearly the parched mark which becomes visible in hot, dry weather was not visible. The principal reference to decide the location of the trenches was therefore a scar between the second and third bays from the south on the east wall of Green Court's west range (Plate 38). The parch mark is believed to be parallel to the north wall of The Orangery (Fig. 2) and therefore both trenches were aligned with this scar. The first of the trenches, closer to the scar, did not find any archaeological remains related to the possible curtain wall but this may be due to the drainage pipe uncovered within the pit. The second trench, closer to King's Tower, did find remains of the wall (albeit features relating to the foundations rather than the wall itself) but rather than being in the middle of the pit as expected they were located only in the northern half while the southern half remained clear of archaeology. This unexpected position of the stones may suggest a different alignment of the curtain wall to that previously believed.

5.5.2 A photograph contained in *An Archaeological Survey of Knole* (OA, 2007 Fig 13) suggests that the parch mark in Green Court may align with the north-western corner of the Kings Tower, at the eastern end of the Orangery, which is c.9 m north of the Orangery (compared to the straight joint at the west end which is c.6 m north of the Orangery). Therefore, if the former wall extended from the north corner of Kings Tower to the straight joint in the west range then it would not be parallel to the Orangery's wall but would instead be aligned slightly WSW to ENE. This would also explain why there only archaeological remains in the northern half of Test Pit 2.

5.5.3 It is interesting to note that such an orientation would mean that the wall was exactly at a right angle to structures towards the eastern end of the complex which have been identified as Pre-Bouchier⁵ (Fig. 2) and therefore among the earliest elements of the building.

5 Oxford Archaeology *Knole, Sevenoaks, Kent. An Archaeological Survey* (2007)



6 TRIAL TRENCHING WITHIN THE ORANGERY

6.1 Introduction

6.1.1 As part of the investigation of the Orangery two trial trenches were opened in August 2009 inside the building immediately to the south of the central doorway in the north wall. As detailed above in the general description of the Orangery this doorway was rendered redundant in the early 19th century when the building was converted to an Orangery and the floor height was considerably raised. The new floor would have prevented the doorway from opening and clearly it was intended that the building would then have related to the gardens to the south (with a higher ground level) than to the lower Green Court.

6.2 Methodology

6.2.1 Two trial trenches were opened in order to investigate the construction of the raised floor and they were particularly targeted to look for evidence of either the former floor, a chimney stack, a staircase, or former walls. The trenches were opened either side of the central stone-paved walkway and aligned with the western jamb of the north doorway. Elsewhere within the ranges at Knole there are central chimney stacks located adjacent to the main doorways and the trenches were positioned in the probable location of such a feature in the Orangery building.

6.2.2 The two pits were opened by hand and they continued down to the known primary ground level (the height of the threshold within the northern doorway. The test pit numbering (i.e. 3 and 4) continues from the external trial trenches.

6.3 Results

6.3.1 *Test Pit 3* was located within the gravel topped area in the northern half of the building aligned with the western jamb of the north elevation's central doorway. The upper part of the pit was c.1.2 x 0.8 m and was immediately to the north of the central stone-paved walkway along the spine of the building. This area was reduced by c.30 cm below the current ground surface but within this was a smaller pit (c.60 x 70 cm in plan) which was taken down to c.70 cm below the surface.

6.3.2 The uppermost surface within the pit is loose gravel (3.01, possibly relatively recent) which lies on a compacted gravel layer (3.02) with considerable dust mixed in.

6.3.3 Below this was a c.7cm deep layer comprised of metalling (3.03) with small stones mixed with occasional brick and tile fragments. Below this was a c.7 cm deep layer largely formed of slag or clinker from the coke boilers (3.04). At c.25 cm below the stone paving surface is the top of a distinct ochre-coloured sandy layer (3.05) and below this (from c.32 cm below surface) is a slightly lighter soil/chalk rubble layer with a number of fragments of Reigate greensand mixed in. Below this, at c.43 cm beneath the modern floor level is a further sandy, ochre-coloured layer with stones and bricks mixed with fragments of Reigate stone and several distinct cut bricks. The largest of these cut bricks had a splayed end with mortar on this face. The brick was 7.5 cm tall by 10 cm wide by 23 cm long (longer side) and 17 cm long (shorter side).

6.3.4 Below this, from c.61 cm below the ground is a similar brown sandy layer with generally smaller stone fragments. Within this layer was a number of brick fragments with dark smoke-blackening to their surface suggestive of a fireplace or chimney.

6.3.5 At the bottom of this layer (66 cm below the stone paving) the top surface was exposed of an in-situ footing from a brick wall. Within the area excavated four E-W aligned bricks



were exposed immediately north of the stone paved walkway. Due to the small dimension of the test pit it was difficult to undertake a detailed assessment of the bricks but they were of a rough quality, handmade and measuring 21 cm x 10 cm x 5 cm. Beneath the uppermost course was another course, also orientated east to west, and the southern end of the footing appeared to continue beneath the central walkway along the spine of the Orangery. The northern end of the footing was truncated but it would formerly have continued north towards the doorway. It is interesting to note that the footing is aligned with the splayed door jamb so if the door is primary the wall would almost certainly not have continued as far as the wall. Alternatively, this doorway may have been a secondary insertion (similar to the central doorway which documentary evidence suggests was inserted into the south wall in the mid 18th century). The brick footing was presumably below the original floor level and this layer was found to comprise a brown sandy construction with less mortar mixed in.

- 6.3.6 **Test Pit 4** was aligned with TP3 but on the south side of the stone-paved walkway. This pit was rapidly reduced to the level of the footing found in Test Pit 3 and the layers were generally similar although there were occasional charcoal flecks. At 66 cm below the height of the stone paving two east-west orientated in-situ bricks were exposed and this aligned with the footings exposed in Pit 3 showing that the footing almost certainly continues beneath the walkway. The southern end of the visible stub appears to have been truncated.

6.4 Conclusions of internal trenching

- 6.4.1 The results of these internal trenches show that the floor level was significantly raised to form the Orangery floor and heating system, and that the earlier floor level still survives at a depth of around 65 cm. This may of course be truncated, and no indication of flooring material (or stair base) was found, but the brick foundations, probably of a partition, were located.
- 6.4.2 The trenches were positioned to encounter the footings of any fireplace or chimney stack located (like others in Green Court) opposite the doors. No trace of any foundations was found, and this may tend to support the evidence of early views that there was no stack in this position.

7 GENERAL CONCLUSION

- 7.1.1 The south range of Green Court is believed to have been constructed in the early 17th-century to replace a previous range or screen wall at this end of the Court. The typical use of such a range would be as lodgings but this is unlikely as all the historical views of the building suggest that it did not have a chimney stack and was therefore unheated.
- 7.1.2 Documentary evidence suggests that significant alterations including the insertion of a central doorway into the south elevation were undertaken in the mid 18th century and by the turn of the 19th century it is described in an inventory as the *old Green house*. This suggests that the building had been used for some time as a garden room (and store) for growing or protecting vulnerable plants during winter. It may be that it served such a function from its original construction or this use may have originated from the mid 18th-century alterations. Each of the views, including those from the 17th century show very tall doors at the east end of the building which would suggest the need to bring tall items (e.g. tall plants on a wagon) into and out of the building.



- 7.1.3 The building is known to have undergone substantial alterations in 1823 when it was converted to a more formal Orangery and almost all evidence of the building's previous internal form was removed or obscured by plaster. The conversion works included substantially rebuilding the south wall to allow the insertion of tall Gothic orangery windows, raising the ground floor as well removing the first floor, staircase and possible chimney stack.
- 7.1.4 Two targeted trial trenches have been opened within the Orangery close to the centre of the building. These found no evidence of any former chimney stack (corroborating the documentary evidence) but two sections from a primary east-west partition were located on the west side of the central bay. The top of the footing from this wall was exposed at the same height as the primary floor level (65 cm below the current floor) and this wall was clearly pulled down to ground level before the new raised floor was constructed.
- 7.1.5 While the internal walls are plastered archaeological evidence will remain obscured and there will remain considerable uncertainty regarding the exact form of the building prior to the extensive works in 1823. However the current investigation has both provided a record of the building and increased understanding of its historic form. Among the areas of interest is the eastern part of the north elevation which contains evidence to suggest it may be an earlier (or different) construction than the rest of the wall. Other evidence relating to the previous form of the building includes the fact that the central bay in the attic has a distinctly different (and later) floor construction than the other bays. This supports the likely theory that a staircase was located in this bay prior to the 1823 works. Another main piece of evidence relating to the historic form of the building is the off-set in the north wall which would have supported the primary first floor.
- 7.1.6 Two further test pits were opened in the external area immediately north of the Orangery's north wall. The evidence within these has helped to identify the nature of the parch mark that is visible on the southern half of the lawn. It can be suggested that this is most likely to be the remnants of the earlier curtain wall, which was demolished and later replaced with the later Orangery in the 17th century. This was especially evident within Test pit 2 which revealed the remains of the foundation base for the southern curtain wall. The evidence of this test pit, and its relationship with the two supposed ends of the parch mark (the scar in the west wall and the north-west corner of Kings Tower), suggest that the wall may have had an alignment which was not quite parallel to the current north wall of the Orangery. This may be significant because this would mean that the wall aligned with (at right angles to) some of the earliest, pre-Bourchier walls in the current building and it could therefore potentially relate to this early complex.
- 7.1.7 To reveal the true extent of the foundation wall as well as its orientation a full excavation along this line would reveal how much still survives. Test pit 1 however, did not reveal any archaeological features, which were most likely removed during the installation works of a boiler system during the late 19th or early 20th century, but did reveal one of the original lead pipes for the drainage of The Orangery. The modern works would account for the large deposit of sand levelling (103) and rubble levelling (102) which were encountered.



APPENDIX A. BIBLIOGRAPHY

Published Sources

- Sackville-West, R. *Knole, Kent*. National Trust Guidebook (1998)
- Thurley, S. *The Royal Palaces of Tudor England: Architecture and Court Life 1460-1547*. Yale University Press, Newhaven and London (1993)
- Sackville-West, V. *Knole and The Sackvilles*. Ernest Benn Ltd., Tonbridge. Third Edition (1958)

Unpublished Sources

- Archaeology South-East *Knole, Sevenoaks, Kent Watching Brief and Historic Building Record Report* (July 2007)
- Oxford Archaeology *Knole, Sevenoaks, Kent. An Archaeological Survey* (2007)
- Oxford Archaeology *Knole, Kent. Conservation Management Plan* (2007)
- Cliveden Conservation Workshop *Knole Orangery. Item Survey and Advisory Report* 2008
- Jamieson, E. and Kidd, P. *A survey of the documentary and visual evidence relating to the former appearance and use of the Green Court, Orangery, Retainer's Gallery, South Range Barracks and Upper King's Room at Knole* (2008)



APPENDIX B. SUMMARY INVENTORY OF SCULPTURES IN ORANGERY FIXED TO WALL

This brief note on the fixed items in the Orangery is intended to emend and add relevant information to that already contained in the Cliveden Conservation report Knole Orangery. Item Survey and Advisory Report 2008. The numbering in this table is taken from the Cliveden study. OA is grateful to Dr Martin Henig FSA for his comments on the marble reliefs.

No	Wall	Outline description and comments	
1	West, left of door	Modern plaster relief panel	Rape of the Sabines
2	West, left of door	Modern plaster relief panel	Bacchanalian scene
3	West, centre (formerly behind Hatchment)	Mosaic panel ?modern	Part frame only
4	West, right of door	Modern plaster relief panel	Charioteers
5	West, right of door	Modern plaster relief panel	Bacchanalian scene
6	North, above door	Marble relief panel. <i>Probably not antique</i>	Two facing heads of Caesars
7	North, right of door	Modern plaster relief panel.	Zeus and attendants.
8	North, between 1 st and 2 nd window	Modern plaster relief panel	Figured subject (obscured and not fully visible)
9	North, between 1 st and 2 nd window	Marble inscribed panel. <i>Probably antique</i>	Inscription]TITINIA . D / PRIMA (obscured and not fully visible)
10	North, between 1 st and 2 nd window	Marble relief panel. <i>Probably not antique</i>	Two facing heads of Caesars? (obscured and not fully visible)
11	North, between 2 nd and 3 rd window	Marble inscribed panel. <i>Probably antique</i>	Inscription]I . AE . M . F LONGINAE]SENE . MERENTI]EREDES FECERVNT
12	North, between 2 nd and 3 rd window	Modern plaster relief panel	Female figure holding sacrificial deer
13	North, between 3 rd window and door	Marble inscribed panel. <i>Probably antique</i>	Inscription ESCI TIN ANVSQV[PIVS MII IT V S S V[
14	North, between door and 4 th window	Marble relief panel. <i>Possibly antique</i>	Herdsmen with cattle
15	North, between door and 4 th window	Modern plaster relief panel	Female figures in procession
16	North, between 4 th and 5 th window	Marble inscribed panel. <i>Probably antique</i>	Inscription D M FLAVIA ELANII / SAE CONIVCII / ET FLORA EVERNA / VAE FECIT / PITVNC HANV /



			JARIS N N
17	North, between 4 th and 5 th window	Modern plaster relief panel	Apollo with lyre
18	North, between 5 th and 6 th window	Marble relief panel. <i>Probably antique</i>	Shepherd with sheep/goats
19	North, between 5 th and 6 th window	Modern plaster relief panel	Dionysius and female figure with child
20	North, right of 6 th window	Marble relief panel. <i>Probably antique (late Hellenistic)</i>	Funeral 'farewell' scene (man and seated wife)
20A	North, right of 6 th window	<i>Mark on wall of lost panel, 39 x 40 cm (lost in two stages)</i>	
21	East wall, between doors	Modern plaster relief panel	Hercules and stag
22	East wall, between doors	Marble relief panel. <i>Probably not antique (standard 18th-cent type)</i>	Boar attacked by two dogs
22A	East wall, between doors	<i>Mark on wall of lost panel, 25 x 47 cm</i>	
23	South wall, left of 9 th window	Modern plaster relief panel	Athena type and female figure
24	South wall, left of 9 th window	Modern plaster relief panel	Female figure
25	South wall, between 9 th and 8 th window	Modern plaster relief panel	Dancing girls
26	South wall, between 9 th and 8 th window	Modern plaster relief panel	Procession of senators?
27	South wall, between 8 th and 7 th window	Modern plaster relief panel	Bacchic procession
28	South wall, between 8 th and 7 th window	Modern plaster relief roundel	Aries
29	South wall, between 7 th and 6 th window	Modern plaster relief panel	Male and two female figures
30	South wall, between 7 th and 6 th window	Modern plaster relief panel	Female figures in procession (as No. 15)
31	South wall, between 6 th and 5 th window	Modern plaster relief panel	Zeus and attendants
32	South wall, between 6 th and 5 th window	Modern plaster relief roundel	Cancer
33	South wall, between 5 th and 4 th window	Modern plaster relief panel	Hercules and family
34	South wall, between 5 th and 4 th window	Modern plaster relief panel	Sacrificial scene
35	South wall, between 4 th and 3 rd window	Modern plaster relief panel	Men carry altar towards tree with serpent
36	South wall, between 4 th and 3 rd window	Modern plaster roundel	Libra
37	South wall, between 3 rd and 2 nd window	Modern plaster relief panel	Sacrificial procession



38	South wall, between 3 rd and 2 nd window	Modern plaster relief panel	Putti with ram
39	South wall, between 2 nd and 1 st window	Modern plaster relief panel	Priestly procession
40	South wall, between 2 nd and 1 st window	Modern plaster roundel	Capricorn



APPENDIX C. LIST OF CONTEXTS. ARCHAEOLOGICAL EXCAVATION.

Test pit 1

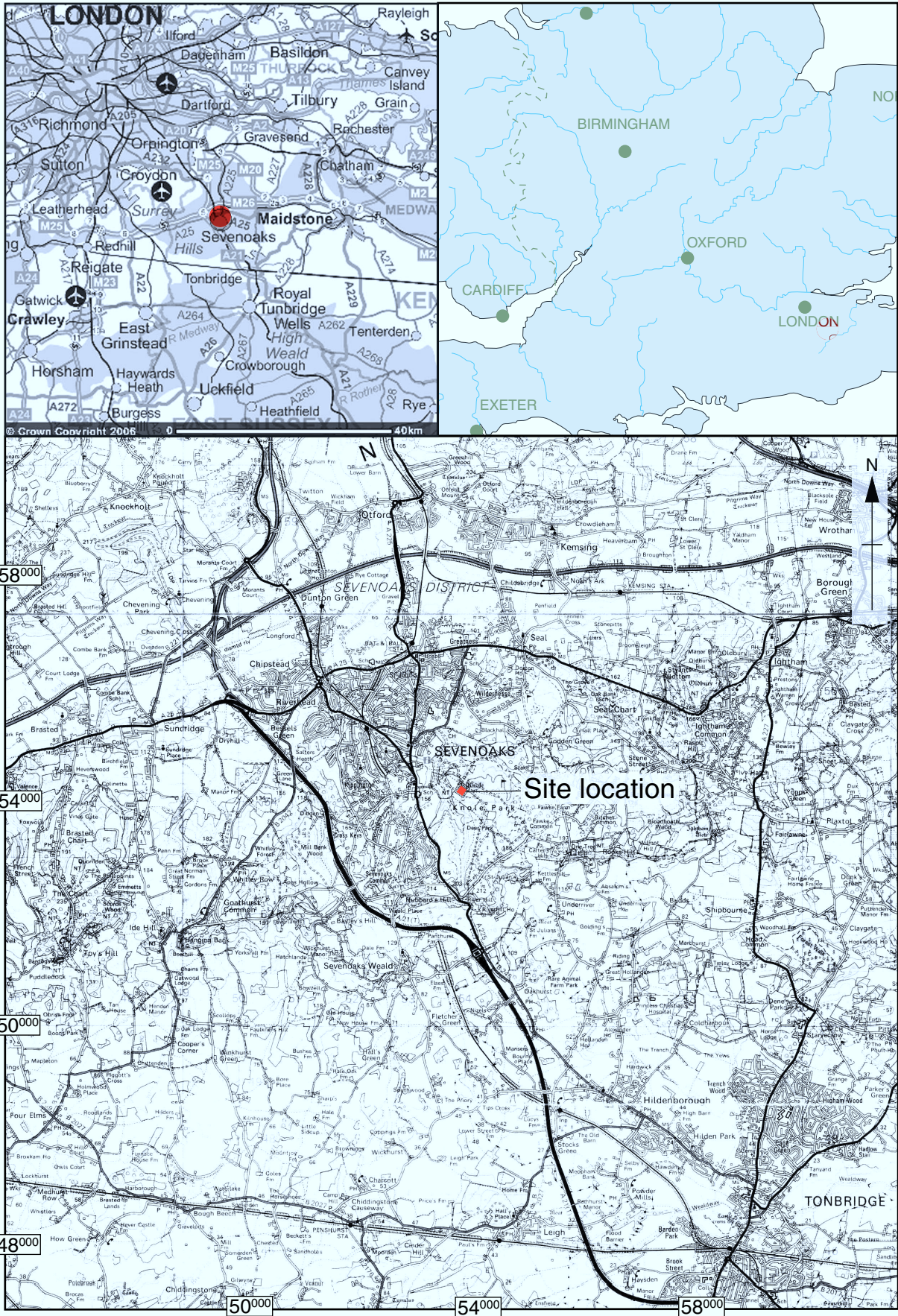
Context	Type	Depth (m)	Comments	Finds	Date
101	Layer	0-0.18	Topsoil	-	30/01/09
102	Layer	0.18-0.38	Demolition layer	Cbm, Bone	30/01/09
103	Layer	0.38-1>	Sand leveling layer	Cbm	30/01/09

Test pit 2

Context	Type	Depth (m)	Comments	Finds	Date
201	Layer	0-0.17	Topsoil	Cbm	30/01/09
202	Deposit	0.17-0.38	Leveling layer	-	30/01/09
203	Deposit	0.3-0.42>	Sandy Gravel layer	Cbm	30/01/09
204	Cut	0.22-0.44>	Wall cut	-	30/01/09
205	Structure	0.12-0.42>	Wall	-	30/01/09
206	Deposit	0.16-0.42>	Demolition layer	Cbm and Bone	30/01/09

Test pit 3

Context	Type	Depth (m)	Comments	Finds	Date
301	Layer	0-0.05	Loose gravel surface	-	18/08/09
302	Deposit	0.05-0.1	Compacted gravel	-	18/08/09
303	Deposit	0.1-0.17	Stone metalling	-	18/08/09
304	Deposit	0.17-0.25	Slag/clinker	-	18/08/09
305	layer	0.25-0.32	Ochre-coloured sand	-	18/08/09
306	Deposit	0.32-0.43	Ligher soil/chalk	-	18/08/09
307	Deposit	0.43-0.61	Sandy ochre	Cut brick	18/08/09
308	Deposit	0.61-0.66	Brown sandy	Blackend brick	18/08/09
309	Wall	0.66- 0.75	Brick wall		18/08/09



1:100,000

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Figure 1: Site location

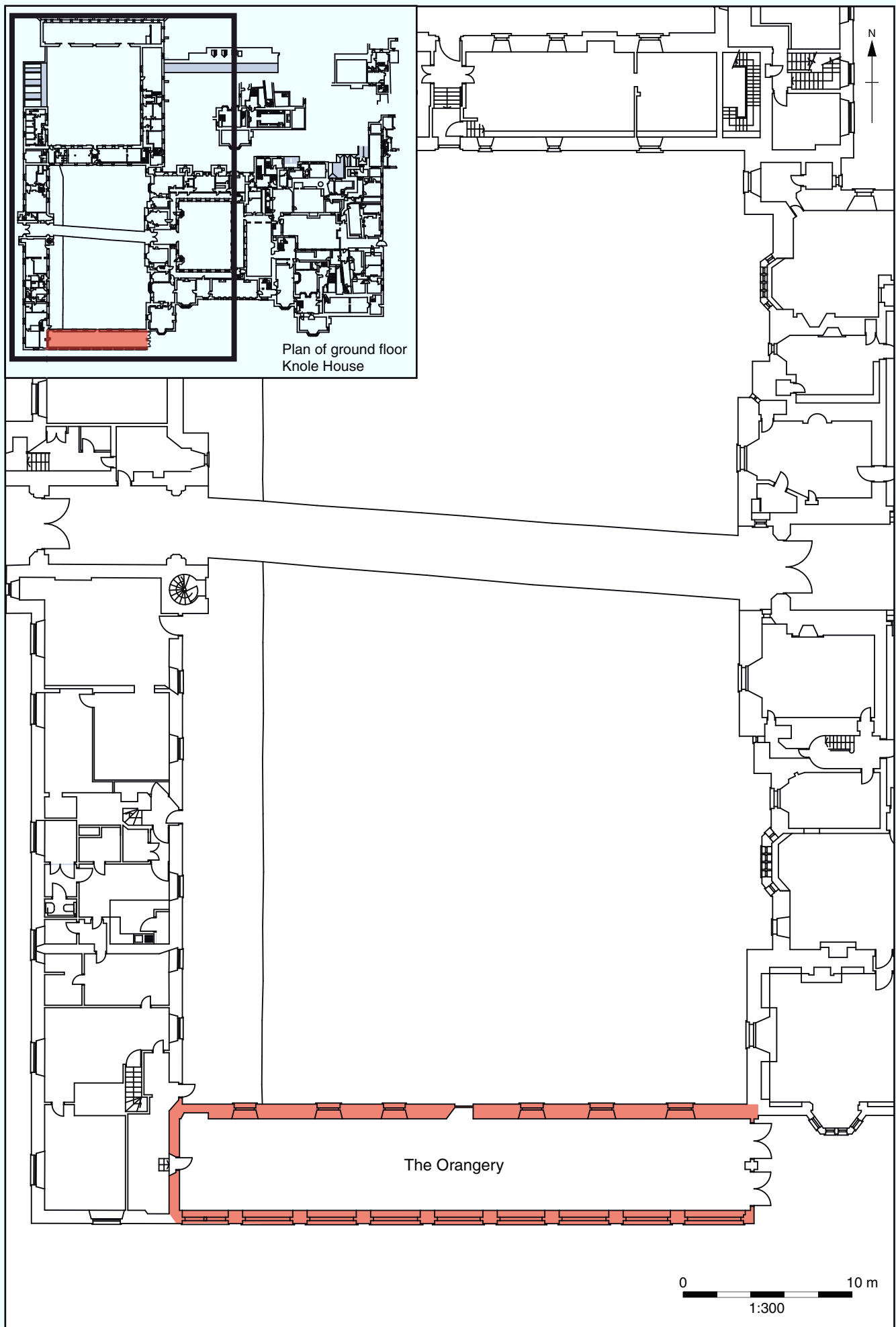


Figure 3: Knole house plan, showing the Orangery

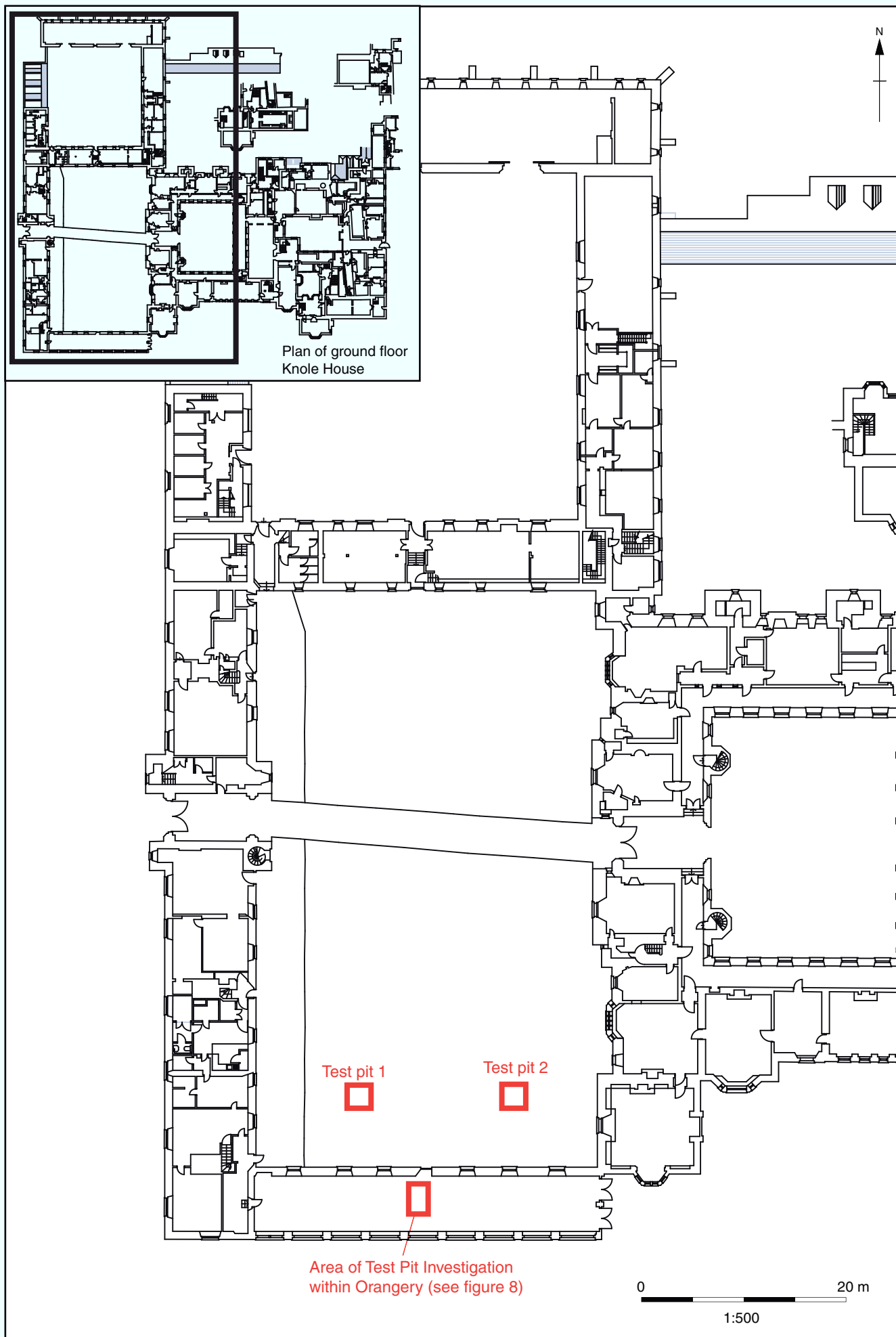


Figure 4: Test pit plan

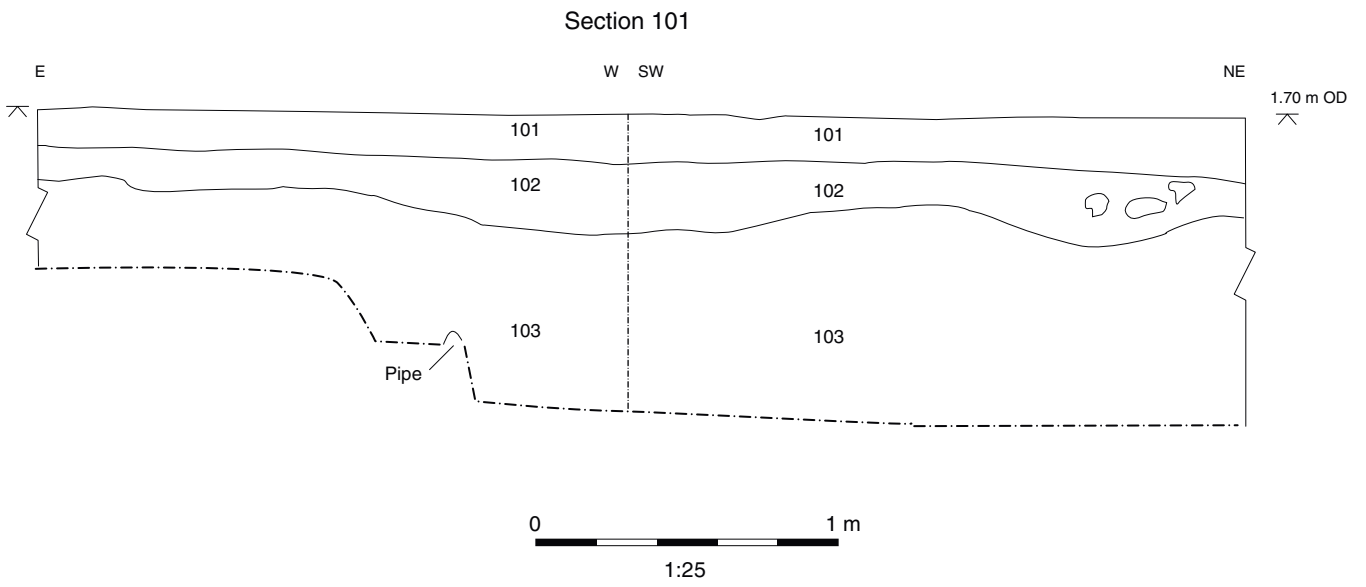
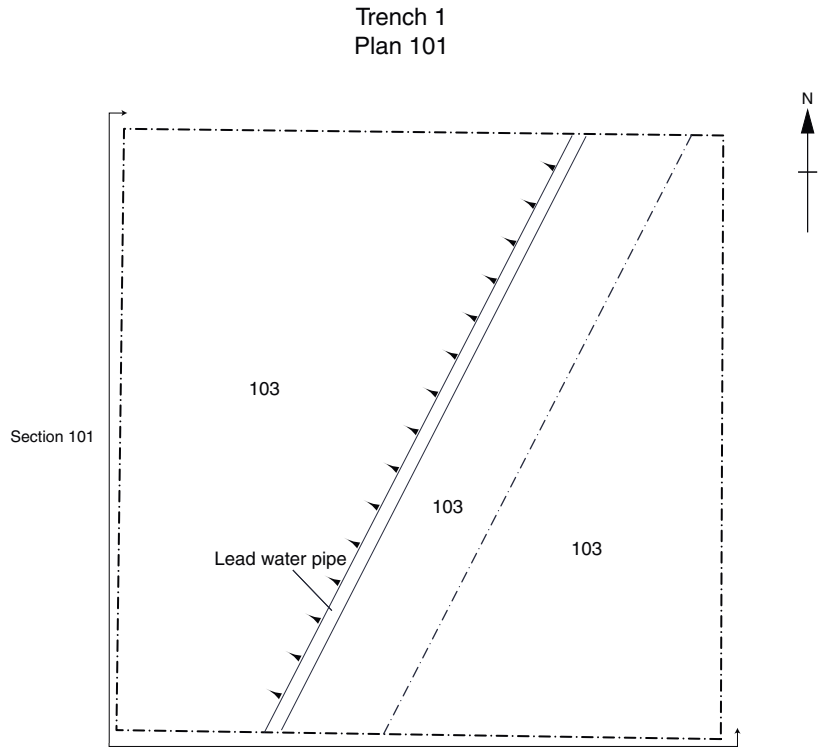
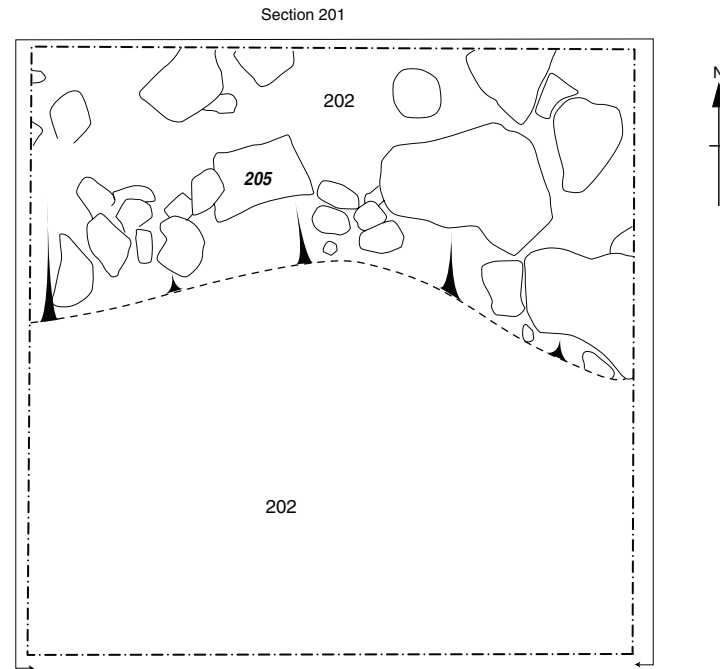


Figure 5: Trench 1, plan and section

Trench 2
Plan 201



Section 201

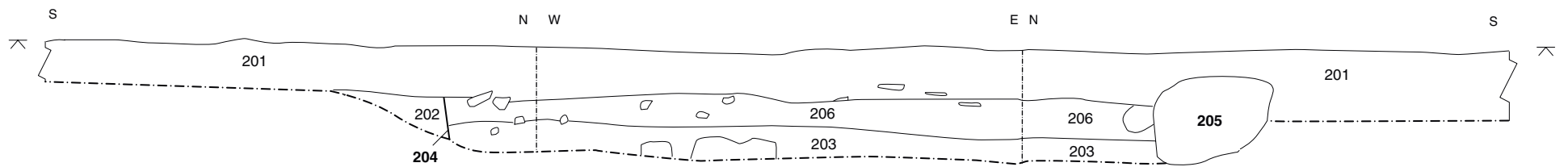


Figure 6: Trench 2, plan and section

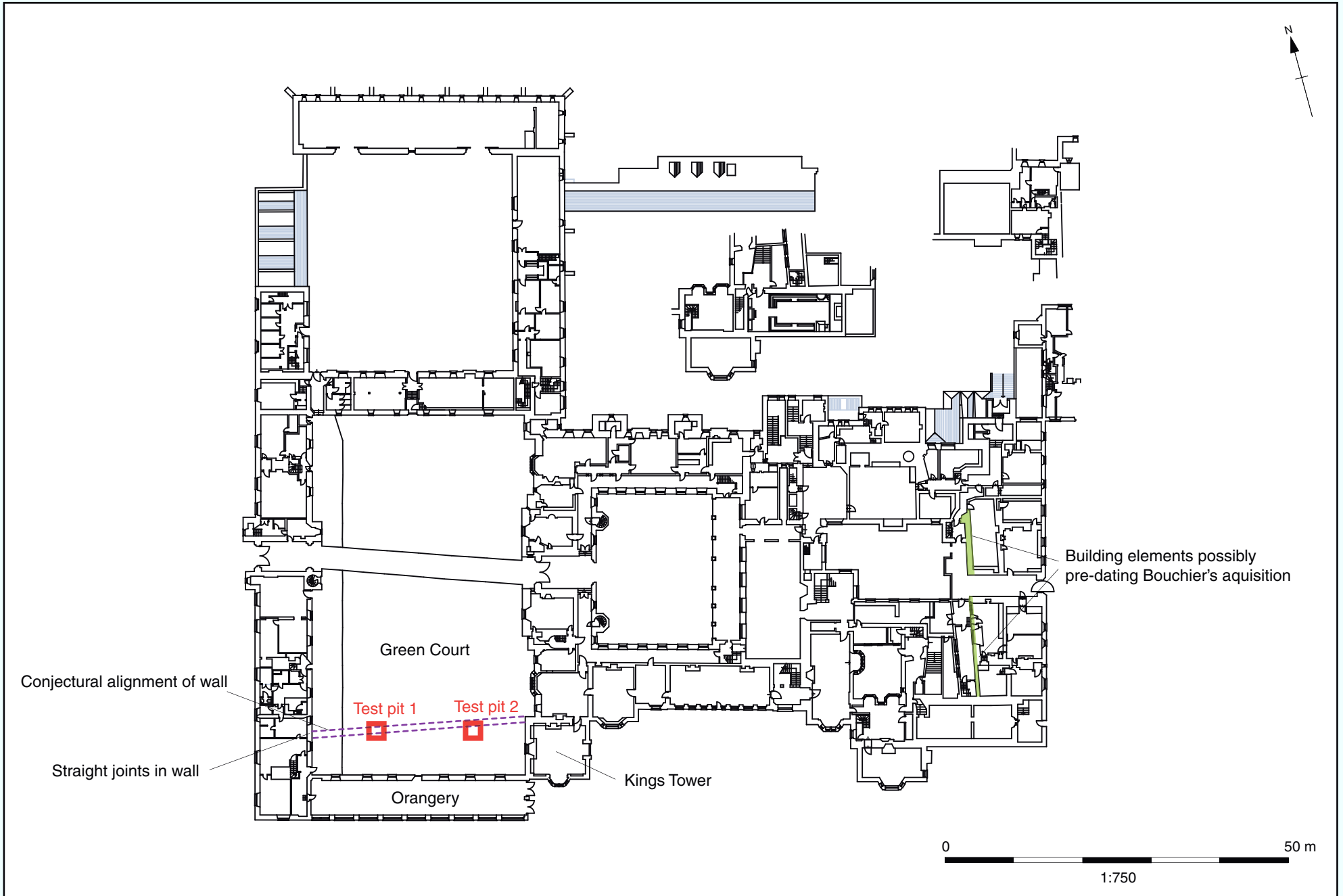


Figure 7: Location and conjectural alignment of wall, possibly in connection with those elements identified as Phase 1 (Pre-Bouchiers)

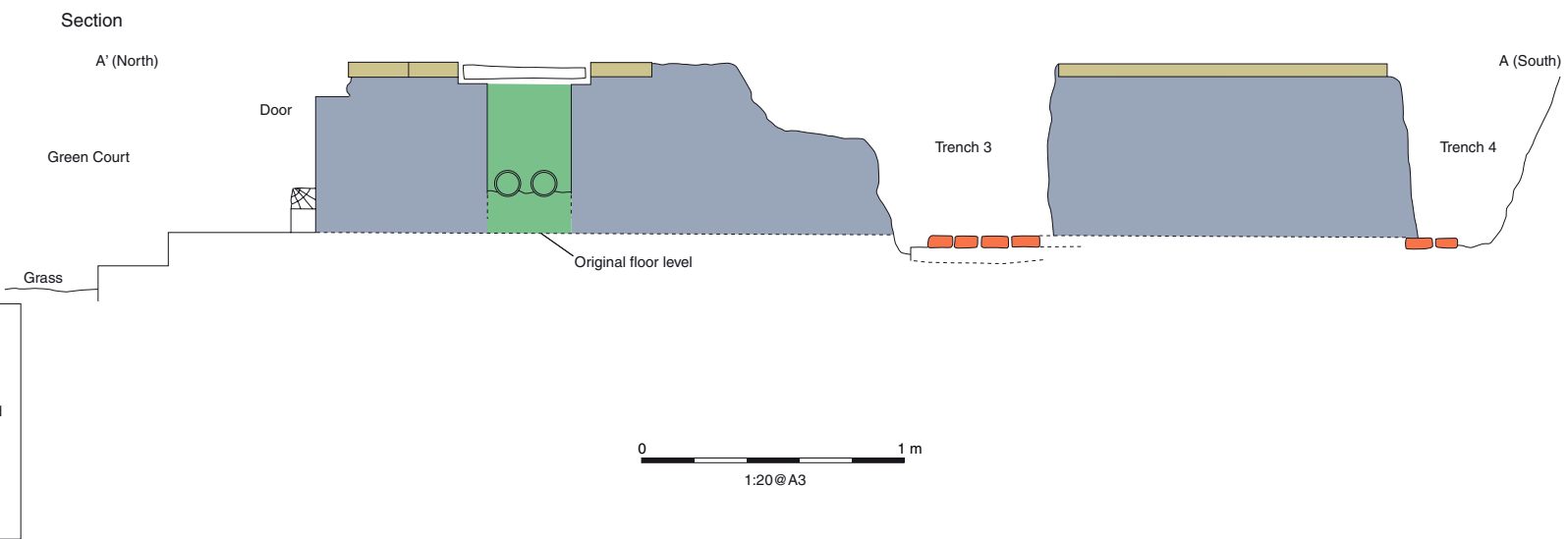
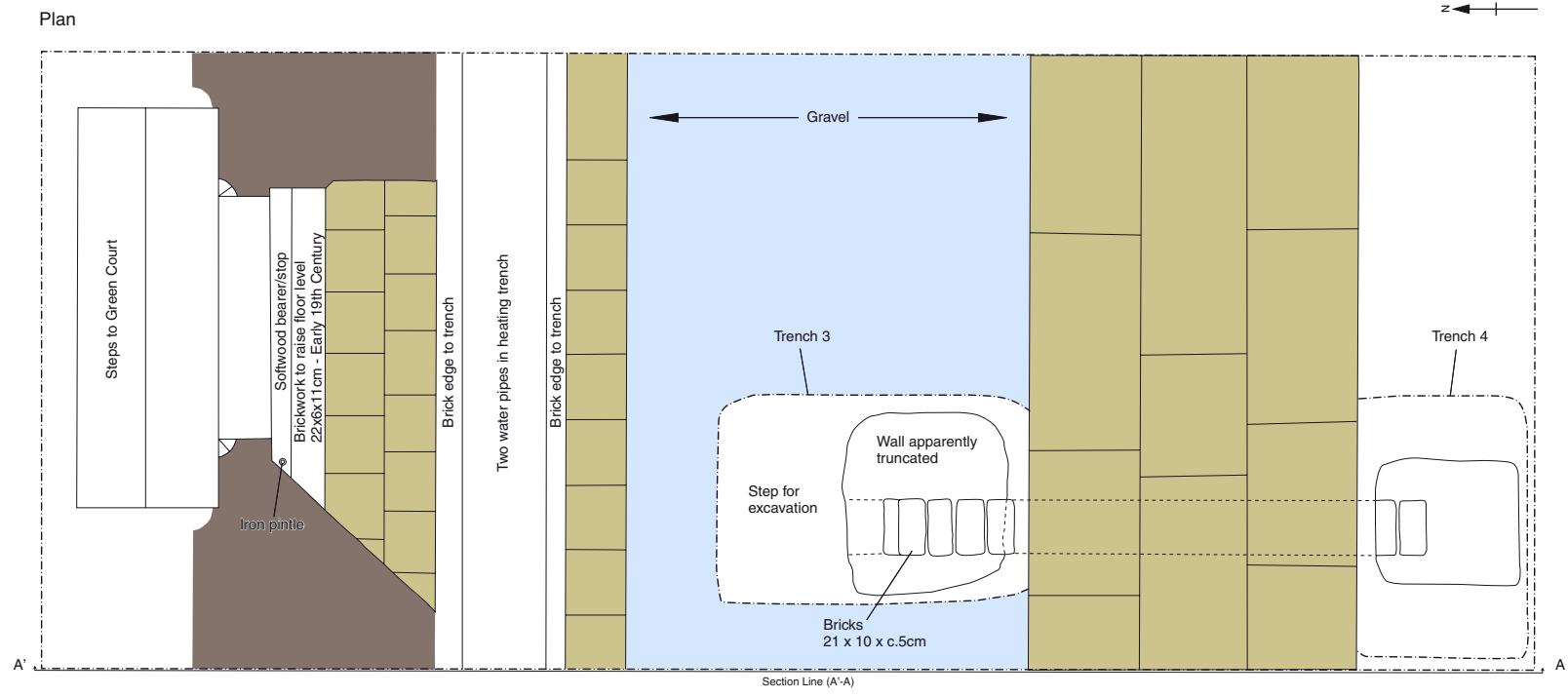


Figure 8: Plan and section of two trenches within Orangery (see Figure 4 for location)



Plate 1: General view of the north facade



Plate 2: General view of the south facade



Plate 3:
General view
of the east
facade



Plate 4:
General
view
inside the
Orangerij
east



Plate 5: General view of the attic towards the east



Plate 6: Main fabric, eastern end of the north facade



Plate 7: The southern end of the east range



Plate 8a: Straight joints in the eastern end of the north facade (first floor) suggesting alterations to the fenestration. Easternmost window



Plate 8b: Second easternmost window. Image taken from rectified photographic survey undertaken by The Downland Partnersip.



Plate 9: Blocked doorway in the north facade (west)



Plate 10: Phasing in north facade from insertion of windows



Plate 11: Current central doorway in the north facade



Plate 12: Base of the south facade with partially coursed stone



Plate 13: Main fabric. South facade



Plate 14: Gable, south facade



Plate 15: The two westernmost gables, only the one on the right is part of The Orangery



Plate 16: Doors, east facade



Plate 17: Coat of arms in the Gable with the date 1823, east facade



Plate 18: Central doorway in the north wall, inside



Plate 19: Lintel of a window on the ground floor north wall



Plate 20: Sill of a window on the ground floor, north wall



Figure 21: Black stain , probably due to fire in the inner arch of the easternmost window of the south wall



Figure 22: Sill of a window with some broken and some repaired tiles.
South wall



Figure 23: Western wall



Figure 24: Graffiti on the western wall



Figure 25: Current floor , photo facing south-west



Figure 26: Western half of the current ceiling



Figure 27: Remains of the decorated plaster on the west wall



Figure 28: Recent metallic bracing for the tie beams and sockets in the wall



Figure 29: Roman numerals and carpenters marks



Plate 30: Central bay (6th) where a staircase might have been placed



Plate 31: Central gable from the inside south wall



Plate 32: Lintel of the eastern gable with the date of 1974



Plate 33: Blackened timbers due to fire



Plate 34: Section 101



Plate 35: Section 201



Plate 36 : Wall foundation **205**



Plate 37: Wall foundation **205**



Plate 38. Vertical scar of a break in the east wall of the western range in Green Court



Plate 39: Trench 3 within Orangery showing surviving footings from former partition



Plate 40: Trench 4 within Orangery showing partition footings



Plate 41: Heating pipes within duct/trench along north wall of Orangery



Plate 42: Former doorway in north wall showing raised floor level