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Staunton Country Park
Middle Park Way
Havant
Hampshire
PO9 5HB

STAUNTON COUNTRY PARK, HAVANT

EXCAVATION OF THE PINE PITS AND 'MELON GROUND' IN THE NORTH GARDEN

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STAUNTON COUNTRY PARK, HAVANT

EXCAVATION OF THE PINE PITS AND 'MELON GROUND' IN THE NORTH GARDEN

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STAUNTON COUNTRY PARK, HAVANT

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1. NON TECHNICAL SUMMARY

1.1 Excavation work in the area of the Pine Pits and what was thought to be the Melon Ground (within the North Garden) were undertaken by Gifford on behalf of Staunton Country Park during April 2004. This work comprised the excavation of three trenches (through Hartley House No.1, across the extant Pine Pit and extending across the Melon ground') and the excavation of two small window samples to the north and south of the extant Pine Pit.

1.2 Work in Hartley House No.1 recovered evidence of one relatively well-preserved pit, one simple frame structure and the possible robbed out remains of a second frame. At the northern end of the trench another structure was identified in section. This appeared to be a foundation supporting three padstones for a possible boiler house or ancillary garden building (possibly a store house raised above ground level and away from damp and rodents). The extant pine pit retained evidence of a stepped foundation and a single stone slab. This rested on brick and slate which acted as waterproofing. Internally the walls were rendered to further waterproof the structure creating a 'tanked' system with warm water circulating to heat the soil and the air within the pine pit. These structures survive almost exclusively as foundations and as such their form and location suggests a wholly utilitarian function with their form and method of construction dictating conditions and species requirements.

1.3 The 'melon house' is now thought to have fulfilled a variety of roles possibly being constructed by Garrett during the early nineteenth century. Documentary research, excavation and a preliminary assessment of the structure indicate that the building 'shrunk' in size under Staunton's ownership. The dimensions of the reduced building, correspond with documentary evidence, indicating the growth of bananas on the estate. If this is the case, the Banana House is considerably larger than the few surviving examples elsewhere and would represent a significant survival of an unusual and nationally important structure. A single sherd of late Bronze Age/early Iron Age pottery was recovered from the surface of the natural sands within the base of this trench further emphasising late prehistoric activity in the area around Wakefords Copse.

1.4 This work has identified significant structural evidence in each of the trenches including the partial survival of two tanked pine pits and at least one lightweight brick with a probably mono-pitch roof. This supports the documentary evidence which implies a mixture of pit and frame structures in this area. If further evidence comes to light to support the conclusions of this report then a Banana House here would represent a building of substantial national importance.

2. INTRODUCTION

2.1 Staunton Country Park, formerly known as Leigh Park, is located on the B2419 approximately 2 miles north of Havant (Figure 1) and currently operates as a country park open to the public. The parkland is a Conservation Area and is designated as Grade II* within the English Heritage Register of Historic Parks and Gardens and contains some 9 Listed Buildings (of Grade II and II* status).

2.2 Gifford previously carried out a historic study of the Leigh Park Estate (Gifford Report No.11373.R02; Volumes 1 and 2). This work sought to characterise the historic landscape, develop a map regression for the estate and clarify previous archaeological work undertaken within the bounds of the estate and adjacent to it. The study also made recommendations as to where further work may be required to elucidate understanding and hence enable better management of the estate. The results of this work will not be repeated here but are available for reference at Staunton Country Park, or within the Hampshire County Council Sites and Monuments Record.

2.3 Staunton Country Park and Hampshire County Council commissioned Gifford and Partners to undertake documentary research and a targeted archaeological evaluation in the area of the North Garden. This work was to identify the presence/absence of pits and frames associated with the cultivation of pines and other produce and to investigate what was commonly referred to as the 'melon house' (Figure 2). This phase of evaluation is in response to a Heritage Lottery Fund bid and aims to provide further information to the architects to allow reconstruction and a reduced impact upon archaeological deposits which survive beneath ground level.

2.4 The aim of this work was to:

- Recover and record structural evidence for the location and construction of surviving pine pits and other structures within this area of the North Garden to aid in the location and construction of new structures on the site.
- To determine the form and function of the 'Melon House'.
- Identify phasing (where possible within surviving below ground structures.
- Identify the level at which underlying natural deposits occur.

2.5 Three trenches and two small window samples were excavated within the North Garden and this work was combined with targeted documentary research by a recognised expert in the field (Susan Campbell). Excavation was undertaken within the greenhouse identified as Hartley House No. 1 on 13-14 April with a second tranche of work within the 'melon house' being undertaken on 19-20 April 2004.

3. METHODOLOGY

3.1 Two archaeologists from Gifford with the support of a specialist gardens archaeologist (Lesley Howes) carried out this work. Within the Hartley House No.1 trench, the surface gravels were stripped and deposits excavated down to natural sands and clays. Excavation halted at natural or at the discovery of structural

evidence within the trench. The two trenches to the north; one excavated within a surviving pine pit and a second across what was thought to be a melon house, were excavated down to natural but also respected structural evidence where it was encountered.

3.2 A contextual record and written account of the work was kept on Gifford proforma site recording sheets. However, the principal output from this work was the production of a drawn record (with plans and sections of each trench at 1:20) supported by colour print and digital photography, a full context record and a site diary.

4. A PRECIS OF THE DOCUMENTARY EVIDENCE

4.1 General Construction Processes

4.1.1 The pineapple or pine is a native species of South America which understandably requires hot and humid conditions in which to thrive. First cultivated in the Netherlands during the sixteenth century the process of cultivation in pots within beds filled with fermenting oak bark or manure was the accepted norm. The cultivation process was undertaken within formal structures (be they timber framed or brick built) with a back wall higher than the front and aligned east west to maximise the quantities of sunlight the plants were exposed to. The tanning bark or manure beds generally heated the soil; the air was heated by horizontal flues heated by nearby furnaces or by open beds of fresh manure. During the nineteenth century manure or tanning bark was still being employed to heat beds although increasingly hot water pipes and boilers had replaced brick flues and furnaces and span frames were now used as well as mono-pitch frames.

4.1.2 The development of the 'tanked pit' during the mid nineteenth century was a great step forward providing uniform heat to the soil and warm moist air into the pinery. It also had the added benefit that this process ran constantly whereas manure or bark lost heat over time. The plants grew in pots within layers of rubble, clinker/ashes and fine sand while below water was heated from the boiler and flowed around the tank. These tanks were between 4 and 6 feet deep, were often cement rendered with a base material of slate or stone slabs.

4.1.3 The cultivation of melons required heat to be supplied via similar processes as with the pine pits although melons were grown in level beds of soil. Bananas, like pineapples, also required tropical heat. However, their great height when fully grown (up to 20 feet) demanded very tall houses. Bananas were usually grown in large tubs and as they required significant quantities of light to thrive the roof was usually completely glazed with brick gable end or ends to the structure.

4.2 Documentary Evidence at Leigh Park

4.2.1 Early maps of the North Garden and to the north of the Great Stove House indicate ranges of long buildings aligned east-west. Given the functional and somewhat dirty nature of the work associated with forcing crops, its location away from the main house, hidden behind the Great Stove is easy to understand. The 1870 1st edition Ordnance Survey map clearly indicates this area as a forcing ground.

4.2.2 Written evidence indicates that, as early as 1828 and following the enlargement of his Stoves and conservatory, Staunton commenced experimentation in growing a single species of banana (*musa paradisiaca*) (Gladwyn 1992, 54). This fruiting plant was grown in his conservatory and was clearly grown as a showpiece plant.

4.2.3 Staunton's notes of 1836 (*ibid*, 36) indicate that a 'pine stove' (measuring 45' x 12'), 'succession pit' (measuring 35' x 7'), 'melon pit (measuring 35' x 5½') and a general 'forcing pit' (measuring 47' x 12') had been constructed. These measurements do not tally exactly with any of the surviving structures although may relate to bed size when 'rounded up'. An article in '*The Gardeners Chronicle*' dated 1845 indicates that pineapples were grown at Leigh Park with a total of 150' of pits for their cultivation and that these crops were heated by hot water pipes rather than the traditional method of fermenting dung.

4.2.4 In 1837 Alexander Scott became Staunton's head gardener. Scott was very much a progressive gardener preferring to rely upon steam rather than dung and tan to heat his pits. Consequently a series of new pits were constructed in this area of the North Garden and their measurements correspond with those provided in the sales particulars of 1860. Scott's pits appear to have been built over the earlier pits and have destroyed any evidence of these structures. The 1860 Sales Particular also refers to a 'Large Green House' which was located to the north of the pits. This was presumably what is now known as the ' melon house'.

4.2.5 The cultivation of bananas was clearly in the mind of Staunton as revealed in an article in '*The Gardeners Magazine*' by his under-gardener Richard Carter in 1842. In this article Carter indicates that Leigh Park had achieved considerable success in the cultivation of as many as eight varieties of banana. However, at this time it would appear that a dedicated house for cultivating bananas did not exist. Carter goes on to propose that a house 40' x 20' and 20' in height would be able to grow some twenty fruiting plants with a bark bed at one end for the establishment of suckers. The whole roof could be fixed as long as it was provided with upright sashes at each to aid in ventilation and hot water pipe heating was much preferred over the use of flues. Three years later little mention is made of bananas beyond listing them as unusual plants.

4.2.6 It is possible that the 'Large Greenhouse' mentioned in the 1860 Sales Particulars and more recently known as the 'melon house' actually housed banana trees. Its dimensions (47' x 29') are only approximate to those identified by Carter, however, the reuse of a slightly larger structure would appear to be more desirable that its demolition and the construction of a wholly new building. Staunton's own notes reveal that this structure may also at some point grown mangosteens with references to a '*Mangosteen House*' in 1847 and an '*enlarged Mangosteen house*' in 1848 (Gladwyn 1992, 110-111).

4.2.7 Following Staunton's death and the sale of the estate in 1861 Leigh Park, under new ownership, was featured in '*The Journal of Horticulture and Cottage Gardener*' in 1867. This article takes the reader on a tour of the estate gardens and refers to four pineries '*...two of them lean-to's and the other two span-roofed pits... Next came a large and lofty stove housing fine specimens of flowering and ornamental-*

foliaged plants...' (The Journal of Horticulture and Cottage Gardener, June 13th 1867, 404-405). The tour moves from south to north and onwards towards the new Kitchen garden to the east. This document indicates the presence of a mixture of lean-to (framed) and span-roofed structures and the 'lofty stove' is now thought to indicate the Banana House.

5. RESULTS FROM THE HARTLEY HOUSE TRENCH

5.1 General Deposits within the Hartley House No.1 Trench

5.1.1 Work within Hartley House No.1 comprised the excavation of a narrow trench through the centre of the polythene tunnel (Figure 2). The trench was positioned along the central pathway to minimise the levels of disturbance to plants already within the tunnel. As a result a trench approximately 400mm wide and 20m long was excavated (Figure 3).

5.1.2 The principal aim of this trench was to investigate and record evidence for earlier structures below Hartley House No. 1 and within the North Garden. Excavation continued until structures were encountered and from this point work focused upon structural elements to determine their form and nature and that of the underlying natural deposits. Natural sands and clays (007) were encountered within the central portion of the trench at approximately 400mm below the surface.

5.1.3 At the southern end of the trench a substantial area of ash and cinders (005) was identified (Plate 1) which overlay some scatters of brick rubble (006) and sands. This has been interpreted as a scatter or dump of ash and clinker from the Boiler House which still stands immediately to the west of Hartley House No. 1. Both Staunton and Stone (owners of the estate during the nineteenth century) used ash and clinker in the creation and repair of their pathways and this area would have served well as a storage point close to the two North Garden boiler houses.

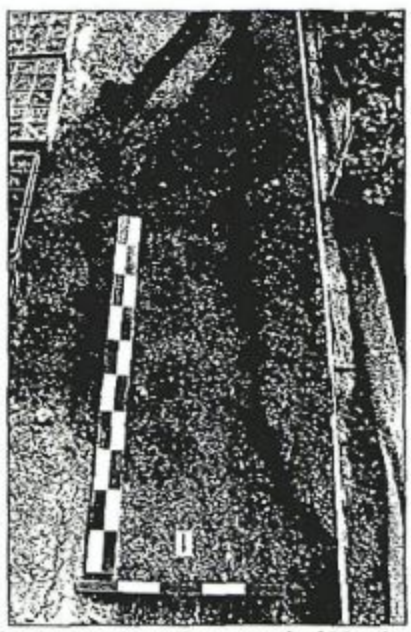


Plate 1. Cinder layer at northern end of Hartley House No.1 Trench.

5.1.4 The plan of the Hartley House trench (Figure 3) identifies three distinct structures (numbered Structures 1, 2 and 3). A fourth possible structure appears to have been almost completely robbed out and survives as an area of collapsed brick overlain by context 005. No substantial cuts for foundation trenches were associated with the brick rubble suggesting that if this was indeed a structure it was most probably a simple lightweight frame rather than a pit-like Structure 1. If this does represent a structure, it would appear (from its relation with other structural evidence) that the southern wall survives as rubble. The northern wall has been completely removed.

5.2 Structure 1

5.2.1 Structure 1 (Plate 2) extended through the trench (aligned east-west) and comprised three comparatively thick (300mm) walls (Contexts 013, 021 and 024).

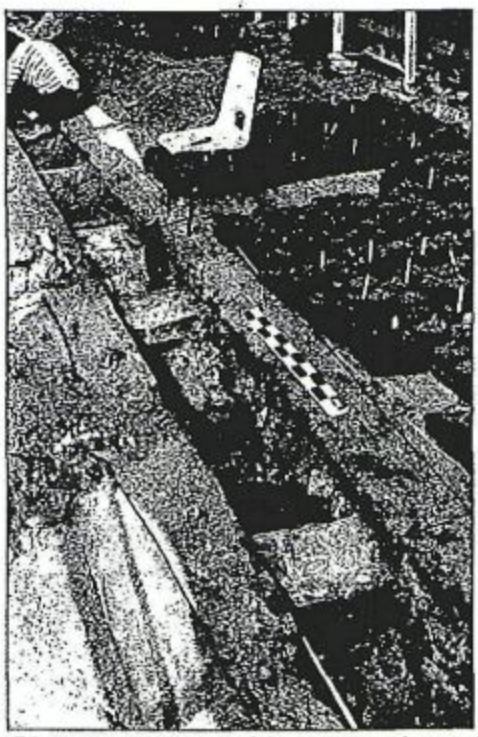


Plate 2. Structure 1 in Hartley House No.1 Trench.

Each wall foundation was made of unfrogged orange/red bricks bonded with lime mortar flecked with ash. The two external walls (northern (024) and southern (014) examples) were each stepped on their external face and four courses of each wall survived (Figure 4, sheets 1 and 2). The middle wall (021) was slightly different; its upper course was 300mm thick although its southern face comprised a single brick resting upon a sandy bedding material.

5.2.2 At the base of the trench between the middle wall and the northern external wall, a red tiled floor (012) abutting each internal wall face had survived (Plate 3). The internal wall faces were both rendered and, combined with the tiled floor appeqard to form a waterproofed channel. This channel had been backfilled with some demolition rubble and a small pipe trench had been cut through this material. The pipe trench turned out to be a relatively modern cable run which had subsequently

been backfilled with more modern material including sands and gravel. Structure 1 measured 3.65m or 12 feet in width and appears to have been extensively truncated, demolition rubble being used in part to backfill the feature. Finds of window glass, unfrogged brick rubble, tile, flower pot, rubber and a single find of undiagnostic clay pipe stem were recovered from within Structure 1.

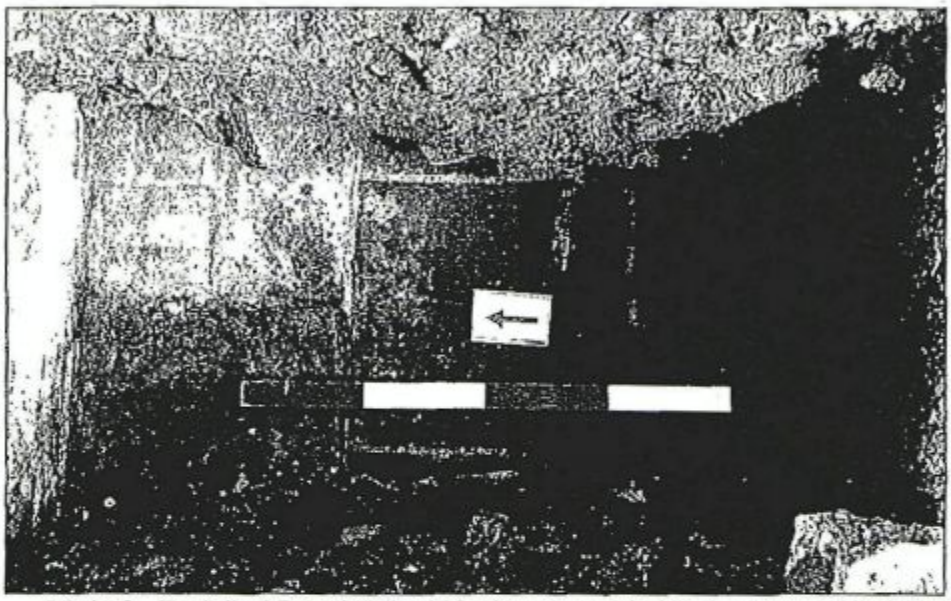


Plate 3. Red-tiled floor (012) within Structure 1 in Hartley House No.1 Trench.

5.3 Interpretation of the Evidence for Structure 1

5.3.1 This structure appears to have been the most substantial building present within the line of the Hartley House trench. The shallow depth of the external walls suggests that this was not a sunken structure but instead included a raised bed and heating system. This is supported by the thickness and depth of the two external walls. The tiled channel may have either originally housed manure for heating the soil and air (with vents at a higher level which have since been removed) or may have held hot water (heated by a pipe from the boiler house) with which to heat the soil and air. Alternatively this may have originally been a manure pit which was altered by Staunton's Head Gardener to contain heated water as technology changed.

5.4 Structure 2

5.4.1 This structure was aligned east-west (Figure 4, sheet 2) and was built of two single brick thick walls (Contexts 026 and 031) of orange red unfrogged bricks (Plate 4). The northern wall (031) appears to have a return wall which extends to the south some 460mm. This resembles either a column rising to support a roof over the frame or may indeed have formed a stable pad upon which to locate an upright timber post to support a framed roof (Plate 5). An east-west wall abuts the eastern side of this brick feature and may the represent later infilling of an open space with a single skin brick wall (Plate 6). The brick bond is not evident but the wall is bonded with a lime mortar. The total width of this structure is 3.40m (or 11 feet 2 inches) with its foundation walls only surviving within bedding trenches which had been backfilled with rubble and soil.



Plate 4. Structure 2 in Hartley House No.1 Trench.

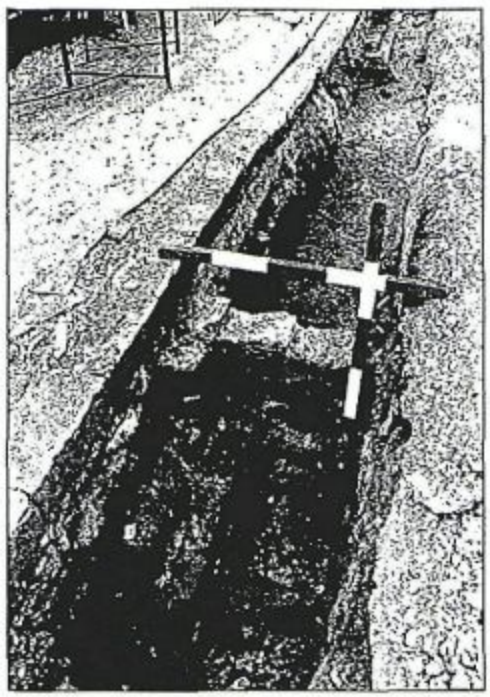


Plate 5. Brick feature associated with Structure 2.

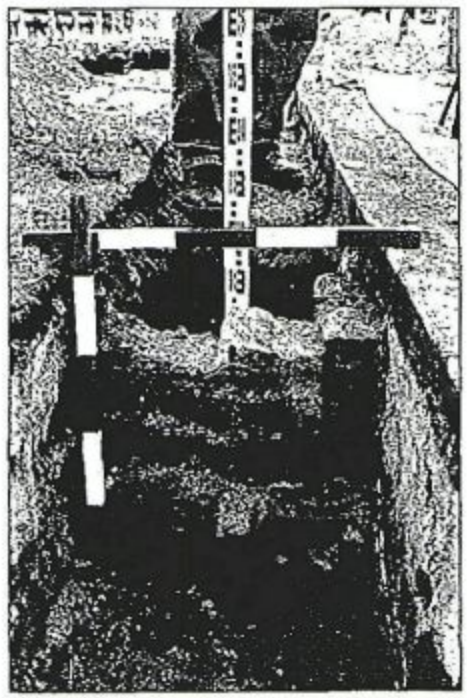


Plate 6. Infill wall abutting brick feature.

5.5 Interpretation of the Evidence for Structure 2

5.5.1 The relative thickness of the external walls for this structure when compared with those of Structure 1 suggests a considerably more ephemeral building. This may in fact have supported a timber-framed structure with raised brick or timber beds that have since been removed. No central brick wall was identified and there was little evidence recovered to suggest the employment of artificial heating techniques within this structure. It is probable then that Structure 2 was one of the lighter single pitched frames rather than the more complex and heated pits (evidenced by structure 1).

5.6 Structure 3

5.6.1 This structure was observed at the northern end of the Hartley House trench (Figure 4, sheet 3) within the western trench section (Plate 7). A base of red bricks (040) two courses thick was exposed. This appears to support three bricks positioned possibly to act as pads to support either a structure or possibly a further boiler. A quantity of clinker (041) was recovered from within the trench alongside Structure 3.

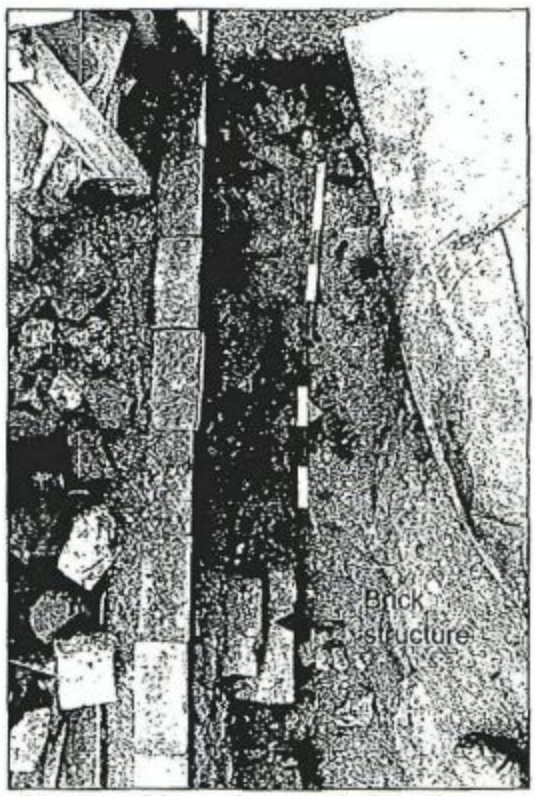


Plate 7. Structure 3 in northern end of Hartley House No.1 Trench.

5.7 Interpretation of the Evidence for Structure 3

5.7.1 A third pine pit extending east-west was thought to have been present within this area of Hartley House No. 1. No evidence for this structure was recovered and it was either completely destroyed during levelling and demolition or was in fact never constructed. Structure 3 appears to have been the base for an ancillary building

housing either a boiler (hence the quantity of clinker close by) or a store house (with brick pads to raise the floor above ground level. The structure does not continue through the trench and so is unlikely to be one of the longer east-west pine pits present within this area of the garden.

6. RESULTS FROM THE EXTANT PINE PIT TRENCH

6.1 Introduction

6.1.1 A single trench was excavated north-south through the remaining extant pine pit located immediately to the south of the 'Melon House' (Figure 2). This trench was requested by the HCC Architect to identify evidence for the structural make-up of the surviving pine pit. It was hoped that this would in turn inform the design and building of other pine pits further to the south.

6.1.2 In conjunction with the single trench, two small window sample pits were excavated immediately to the north and south of the main pit. These small pits were sunk to determine the presence or absence of earlier floor surfaces which were thought to have extended along one side of the main pine pit.

6.2 The Main Trench

6.2.1 The top 1.20m of stratigraphy comprised two distinct layers of garden soil. The upper layer (201) was considerably richer in organic material with manure surviving in section attesting to recent digging. Below this was a layer of lighter coloured soil (202) representing a relatively less disturbed layer which contained unfrogged brick rubble, tile and fragments of slate and glass. This overlay a strata of light greyish brown soil (203) from which a significant quantity of clinker and ash was recovered (Figure 5). The clinker and ash layer appears to have been deposited across the base of the trench and also covered the limestone, brick and slates.

6.2.2 Lying above the natural (204) and partially covered by the clinker layer (203) within the east facing section of the Pine Pit Trench (Figure 5) was a single limestone slab (206) approximately three inches thick and one foot long (Plate 8). This feature rested upon a layer of slate, brick and a second layer of slate (grouped into the context (207) which lay directly upon the sandy natural. This feature was only observed in one area of the section and at this point only just protruded from the line of the trench. Consequently it was recorded but not excavated further. Elsewhere within the trench, a deposit (130mm thick) of light greyish brown soil containing large quantities of clinker was observed (203).

6.2.3 The trench was excavated to a total depth of 1.50m below the bed surface, at which point a firm sandy natural (204) was encountered (Figure 5). This natural closely resembled that encountered within the base of the 'Melon House' trench. Here a single sherd of late Bronze Age or early Iron Age sandy pottery with a flint temper was recovered from the surface of the natural.

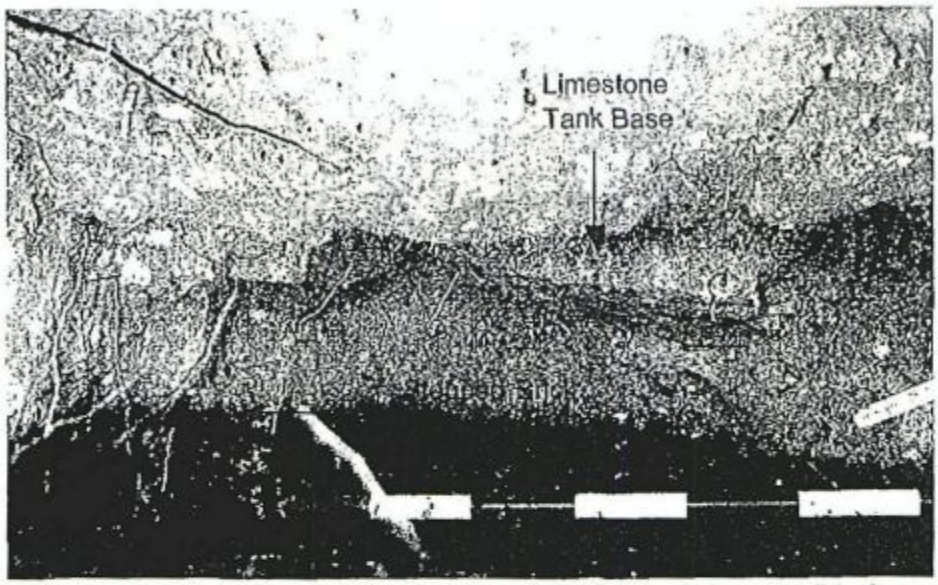


Plate 8. Stepped foundation and limestone slab tank base visible in section of extant Pine Pit Trench.

6.2.4 The exposed internal walls (on the north and south sides) of the pine pit were examined and recorded for further structural evidence. The upper levels appear to have been substantially rebuilt (208) with slightly wider jointing of the mortar beds. This rebuilding may explain why little remains of internal structural detail at higher levels within the bed of the pine pit. Further down, the wall appears to be original and displays evidence (on both walls) of patchy internal rendering (Plate 9). At each base, the wall steps out twice to provide a firm foundation and these elements sit directly upon the sandy natural. At the base of the north wall of the pit, in line with the surviving limestone slab, a slight lip in the render was identified.



Plate 9. Remains of render on southern wall of extant Pine Pit.

6.3 Interpretation of the Evidence for the Extant Pine Pit

6.3.1 It would appear from the surviving evidence that a single element of the base of the tank (206) survived in section. This feature rested upon courses of slate, brick and slate (207) and these functioned as a form of further waterproofing for the base of the tank. The primary waterproofing agent for the tank was the skin of render which would appear to have extended across the base of the tank and at least part way up the side walls of the pine pit. The pit had been excavated down to natural and this provided a firm foundation for the base of what was probably a water tank used in the heating of soil to permit the growing of pineapples.

6.3.2 The change in build and the survival of render only at the base of both walls indictates that at some point the upper portions of the pine pit have been rebuilt. This may well have occurred at the same time as the removal of much of the limestone base. This activity represents a clearly defined change of use with the removal of the limestone blocks and water proofing, coupled with the deposition of clinker designed to improve drainage within the bed. Over the clinker deposit was laid a thick layer of soil containing mixed demolition rubble. The upper layers of this have, over the years, been further enriched and re-dug creating a more organically rich topsoil for the growth of new crops.

6.4 Window Sampling Exercise

6.4.1 As previously stated, two small pits were hand dug immediately to the north and south of the extant pine pit. The southern window sample (WS1) broke through a pathway comprised of a single layer of mortared bricks placed on end. These bricks were unfrogged and retained evidence of mortar on their upward sides and so have been reused from an earlier structure. Below this surface was a sandy levelling layer which overlay a greyish brown sandy soil. Below the soil was a dump of unfrogged brick rubble which extended to the base of the excavated pit (almost 700mm below the current path surface).

6.4.2 The window sample immediately to the north of the extant pine pit (WS2) was excavated through a dark soil deposit before coming down onto a layer of sand and mortar. This layer occurred at approximately 300mm below the surface and was at least 70mm thick.

6.5 Interpretation of the Evidence for the Window Sampling Exercise by the Extant Pine Pit

6.5.1 From the surviving evidence it would appear that randomly deposited unfrogged brick rubble probably from the demolition of the pine pit was dumped to raise the ground level and permit the laying of a brick path at a higher level to the south of the pine pit. No evidence was recovered to indicate even the partial survival of a floor surface at a lower level. A metal spike was driven through the base of WS1 close to the wall but no hard surface was encountered.

6.5.2 To the north of the pine pit the WS2 recovered evidence of a sand/mortar layer which appears to have been laid to a depth of at least 70mm. It is thought that this may represent the remains of a levelling layer for a brick or tile floor surface to the

north of the pine pit bed to provide access to the bed itself. A metal spike was driven through the sand to determine the survival of floor surfaces at lower depths, however, no hard spots were encountered to a depth of 700mm below the ground surface.

7. THE MELON HOUSE TRENCH

7.1 Introduction

7.1.1 A single trench was excavated through this structure which only partially survives above ground (Figure 2). The outline of the building remains as a series of beds which form three sides of a rectangle while at the northern end the gable end of an inserted wall survives to head height. To the north of this gable end the building survives beneath thick undergrowth and only the water tank survives as a clearly discernable feature.

7.1.2 Planted borders run internally along the east, west and south walls which flank one side of a brick path. The brick path extends around three sides of a large centrally located raised bed and the path has been blocked in two places by a low wall with a centrally located drainage hole (Plate 10). This low wall and the upstanding gable end to the north appear to have been inserted at a later date to reduce the size of the building while possibly also altering its function.

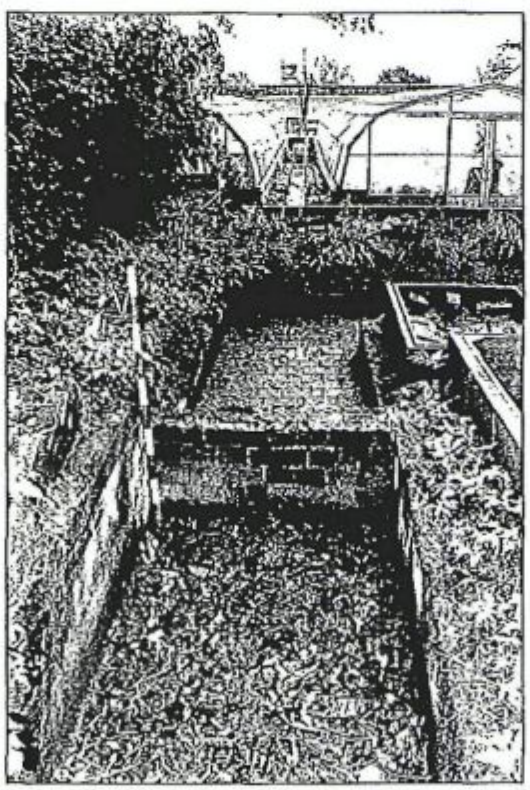


Plate 10. Inserted wall with drain visible in eastern path of 'Melon House'.

7.2 The Main Trench

7.2.1 The trench was excavated east-west cutting across the main axis of the 'Melon House' and was positioned to extend both sides of the low southern wall which blocked the internal paths (Figure 6). A firm, yellow/orange mottled sandy natural (107) was encountered at 1.20m below the surface of the main raised central bed and laying upon this surface was a single abraided sherd of pinky-buff sandy pottery with a flint temper (Plate 11). Assessment of this sherd indicates a late Bronze Age/early Iron Age date and its abraided nature would suggest that it had laid on a surface for some time before being covered.

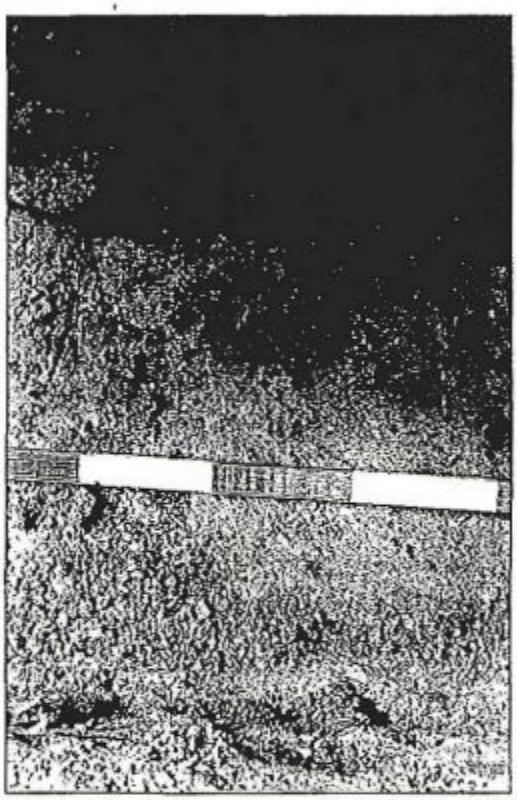


Plate 11. Late bronze Age/early Iron Age pottery sherd visible in base of 'Melon House' Trench.

7.2.2 Within the main bed little structural evidence was recovered apart from a single substantial brick built pier (112) with a stepped footing (Plate 12) which stood upon the natural sands (107).



Plate 12. Brick pier and redeposited sands in 'Melon House' Trench.

Following the construction of the brick pier, sandy deposits (contexts 105, 106, 108 and 112) had been backfilled around the pier to provide stability and above this were two layers of sandy loam (Figure 7). The lower layer was relatively undisturbed while the topsoil had been substantially re-dug and manured in recent years.

7.2.3 Towards the western end of the excavation, the bed extends across the line of the blocked pathway. This had been blocked initially by the insertion of a brick wall (110) complete with a hole for drainage and subsequently the area to the south of the wall had been filled with soil to act as an external bed. At the base of this and at the level of the drainage hole through the wall, a quantity of brick and stone rubble (Plate 13) had been deposited (114). This material presumably ensured that drainage along the path continued through the wall, beneath the inserted bed and down to a small drain at the southern end of the structure. This rubble was not excavated to record the continuation of the pathway. The walls which flanked the path and formed the raised beds were rendered and this was observed to extend behind the later inserted brick wall.

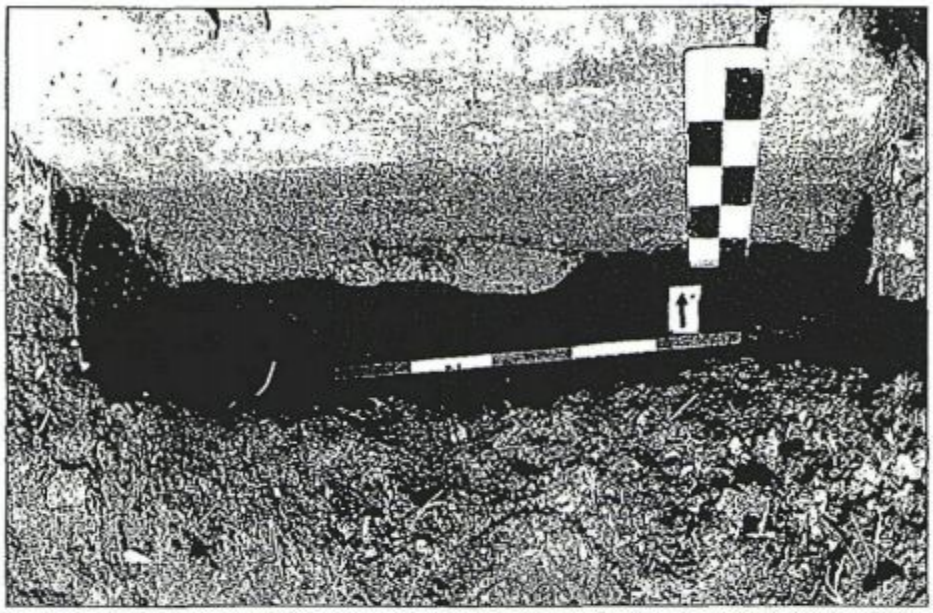


Plate 13. Rubble permitting free drainage through the inserted bed within the 'Melon House' Trench.

7.2.4 At the western end no structural evidence was identified to suggest the continuation of a southern gable wall, however a small stub wall did project into the bed from the western flanking wall to the path. Within the side bed a rich dark topsoil (101) overlay a thick deposit of clinker (103) presumably dumped to improve drainage.

7.2.5 The eastern side of the structure was not excavated because of the presence of modern concrete, the insertion of which appears to have damaged structural remains within the building.

7.3 The Northern Gable End Wall of the 'Melon House'

7.3.1 The northern gable end wall retains several interesting features and while these will not be discussed in detail here some reference is necessary. Across the extent of the wall a line of headers is present, presumably to strengthen the wall as it was constructed over a series of hard spots (beds walls) and soft points (over the beds themselves). Within the wall, a pair of blocked openings (Plate 14) are present level with the central bed and the western example corresponds with the line of the brick pier present within the trench. At the top of the surviving wall and directly above each of the two blocked openings is a pair of cast iron plates with bolts extending through the wall. Above these two plates there is an opening through the wall façade.

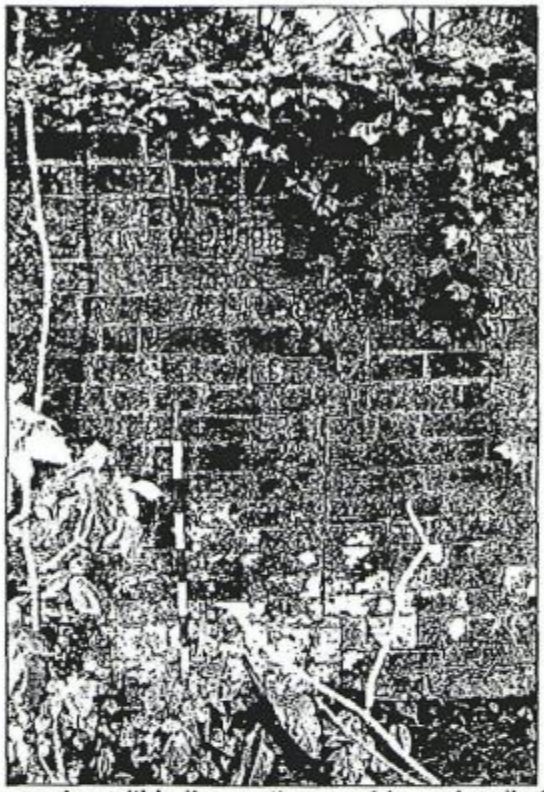


Plate 14. Blocked opening within the northern gable end wall of the 'Melon House'.

7.3.2 The rear of the wall was covered in ivy (which was not cleared as this may have weakened the structure). Two 'buttress-like' features protruded from the line of the wall. *Upon initial inspection these appeared to have been positioned solely to* support the gable wall however, they also lined up with the blocked features identified above. Two hypotheses have been proposed to explain these features should they be more than simple buttresses:

a) The buttresses forms a hollow within the wall to permit the passage of wire or string to act as an opening/closing mechanism for ventilation within the glazed roof of the structure. The base of the blocked opening held a wheel to permit control of the openings at roof level and corresponded with a similar system higher up the wall. Similar systems are known to have been employed in hot houses around the country.

b) That the blocked openings represent raking out points or maintenance points for flues which extended up the colder north gable end wall and allowed this façade to be heated in a controlled manner. The pipes are known to extend up to the gable wall and an extension at the base of the wall within the western path may house such a pipe before it supplied heat to the wall. This form of wall heating is known from the hot houses at Audley End (L Howes pers comm. April 2004).

7.4 Interpretation of the Evidence for the 'Melon House'

7.4.1 The archaeological evaluation did not find evidence for a substantial cross wall running through the main central bed similar to the surviving gable at the northern end of the building. Instead, low walls survive inserted into the two paths which

flank the main bed. These may represent the southern gable wall of a reduced structure designed to make use of a larger and earlier building.

7.4.2 Within the main bed a single brick pier was present standing upon natural sands. This appears to have been constructed later than the larger building and corresponds to various fixtures and blocked openings upon the northern gable wall. What may survive here is a pier base for a timber southern wall which, because of its south facing nature would be comprised mainly of glass in a timber frame. Conversely the main wall could be solid brick as lower levels of light came from this direction. Similarly, the mature trees are to be found to the north of the building while to the south, its location overlooking the lower lying pine pits, outhouses, backhouses and boiler sheds minimised the obstruction of light to the building.

7.4.3 The surviving structural evidence points to a larger structure with an internal pathway providing access to all of its beds. The building was later reduced in size with the insertion of at least one gable end wall, built to extend the structure upwards and provide a stable platform for glazing. The pier in turn could support a substantial timber upright able to carry a transverse truss to hold a pitched and glazed roof. The southern gable would of necessity have been a lightweight glazed structure to permit the maximum ingress of light into the structure. No evidence of a bedding trench or brick footing was identified, possibly because these would have been extremely ephemeral and easily grubbed out in more recent years.

7.4.4 The need to reduce the size of the structure requires some explanation in order to understand the role and function of this building. It may be that this process was carried out in order to more easily heat a smaller space as pipe runs are known to extend beneath the side beds. Similarly, the rear brick wall would retain the heat from sunlight entering through the southern gable wall and release this more slowly and regularly to maintain a regular heat.

7.4.5 The views of the historic garden specialists Lesley Howes and Susan Campbell were sought to determine the form and function of this building. The initial impression was that even the smaller structure would appear to have been too large for the propagation of melons (S Campbell *pers comm.* April 2004). Documentary research has subsequently identified evidence which points to the smaller building functioning as a 'Banana House'. A reference by the Head Gardener in 1842 mentions that a house should or could be built for the growing of banana trees. The dimensions of the smaller building excavated by the Gifford team appear to match those given for the 'Banana House' of 20 feet x 40 feet and the internal layout would certainly promote the growth of such plants.

8. CONCLUSIONS

8.1.1 It should be noted that the excavation of a series of narrow linear trenches would not be a large enough sample of the area to answer more expansive, site based and phasing related questions. However, the preliminary evaluation work within the area of Hartley House No.1, the Pine Pit and 'Melon House' has thrown up a series of interesting possibilities for this area of the North Garden at Staunton Country Park.

8.1.2 Two definite structures have been identified crossing the line of the Hartley House No. 1 trench with a third present in the east facing section. Assessment of the materials and alignment of the two main structures would indicate that they are of comparable date, although the size of their foundations would indicate radically different above ground structures, possibly for the cultivation of different plant species. A fourth structure may survive only as a single, largely robbed out trench towards the southern end of the Hartley House trench; however, no further evidence was identified to support this conjecture. It would appear from the size of the foundations that a mixture of structures was present within this area of the backhouse complex. They appear to respect each others alignments and so are likely to be of contemporary date. The possible four long, thin structures (two surviving as foundations, a third heavily robbed out and the fourth as an extant pit) correspond with documentary references suggesting the presence of two pits and two frames within this area.

8.1.3 The level of survival and the presence of natural sands and clays close to the surface would suggest that the structural evidence recovered represents foundations only and that careful demolition of these structures was carried out during the late nineteenth century. The 'Melon House' survived because of its location, sufficiently far north and 'out of the way' from the backhouse complex to avoid purposeful demolition during the remodelling of this area. It also provided an area of raised beds and planting possibilities at the northern end of the complex on a terrace overlooking the area.

8.1.4 The extant pine pit appears to have had its upper portion rebuilt following the demolition and removal of many of the pine pit fixtures and fittings. What survives below ground level does indicate the presence of tanked heating system with a limestone slab floor resting upon a waterproofing and levelling layer of slate and brick. The presence of the render lip also suggests that the base as well as the sides of the tank were rendered. Unfortunately little of the upper level survives to indicate pit or tank depth.

8.1.5 At the northern end of the area, the 'Melon House' would actually appear in fact to be a Banana House. This structure survives in relatively good order and if it is indeed the remains of a Banana House it would also appear to be a sizeable example. Consequently this feature would represent a significant and nationally important survival of an unusual garden structure at Staunton Country Park.

9. RECOMMENDATIONS

9.1 This evaluation has been designed to answer specific questions regarding the location and construction of buildings to the north of the Great Stove House in the North Garden. As such we have identified the presence of two and possibly three structures associated with the pinery and a fourth structure which may have been a boiler pad or a store room raised slightly above ground level. An intensive watching brief during ground works is recommended given the good survival of some structures and their close proximity to the current ground surface.

9.2 The archaeologist undertaking the watching brief should also be aware of the shallow nature of natural in the area and the recovery of a sherd of prehistoric pottery from the base of the 'melon house' trench. There remains the possibility of further prehistoric remains including features cutting into the natural sands and clays surviving within the area to the north of the Great Stove house.

9.3 The work within what is known as the 'melon house' has thrown up several interesting questions which may well only be answered through a detailed investigation of the upstanding structure. It is clear from the archaeological work to date on the structure and in particular the documentary work that this structure has probably functioned as a specialist house for several species and the surviving structural elements may serve to provide further information of this. Consequently it is recommended that a detailed building recording be undertaken on this structure to follow on from a careful removal of the obscuring scrub vegetation particularly at its northern end.

10. BIBLIOGRAPHY

Campbell, S. (1988). *Walled Kitchen Gardens.* Shire Album 339. Princes Risborough, Shire Publications Ltd.

Campbell, S. (1996). *Charleston Kedding. A History of Kitchen Gardening.* London, Edbury Press.

Gladwyn, D. (1992). *Leigh Park. A 19th Century Pleasure Ground.* Midhurst, Middleton Press.

Macintosh, C. (1847). *The Book of the Garden. Volume 1. Structural.* London, William Blackwood & Sons.

Macintosh, C. (1859). *The Book of the Garden. Volume 1. Structural.* London, William Blackwood & Sons.

Mills, G. (c.1841). *Treatise on the Cucumber and Melon.* No publisher given.

Moore, T. (1881). *Epitome of Gardening.* Edinburgh, Adam & Charles Black.

Neill, P. (1849). *The Fruit, Flower and Kitchen Garden.* Encyclopaedia Britannica. 4th Edition. Edinburgh, Adam & Charles Black.

Pevsner, N. and Lloyd, D. (1999). *The Buildings of England. Hampshire and the Isle of Wight.* London, Penguin.

Thompson, D. (1881). *Fruit Culture under Glass.* No publisher given.

11. APPENDIX A:FIGURES

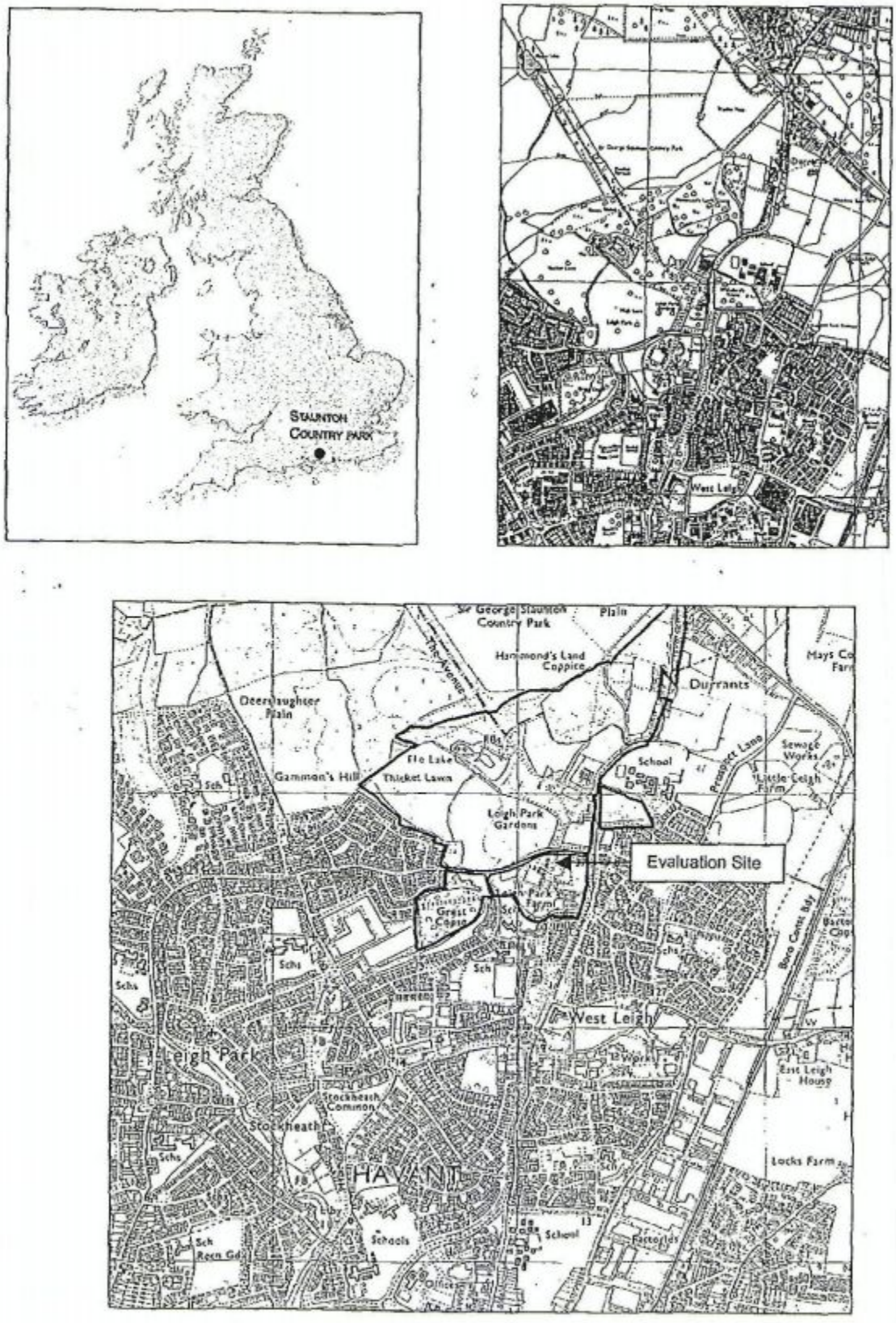
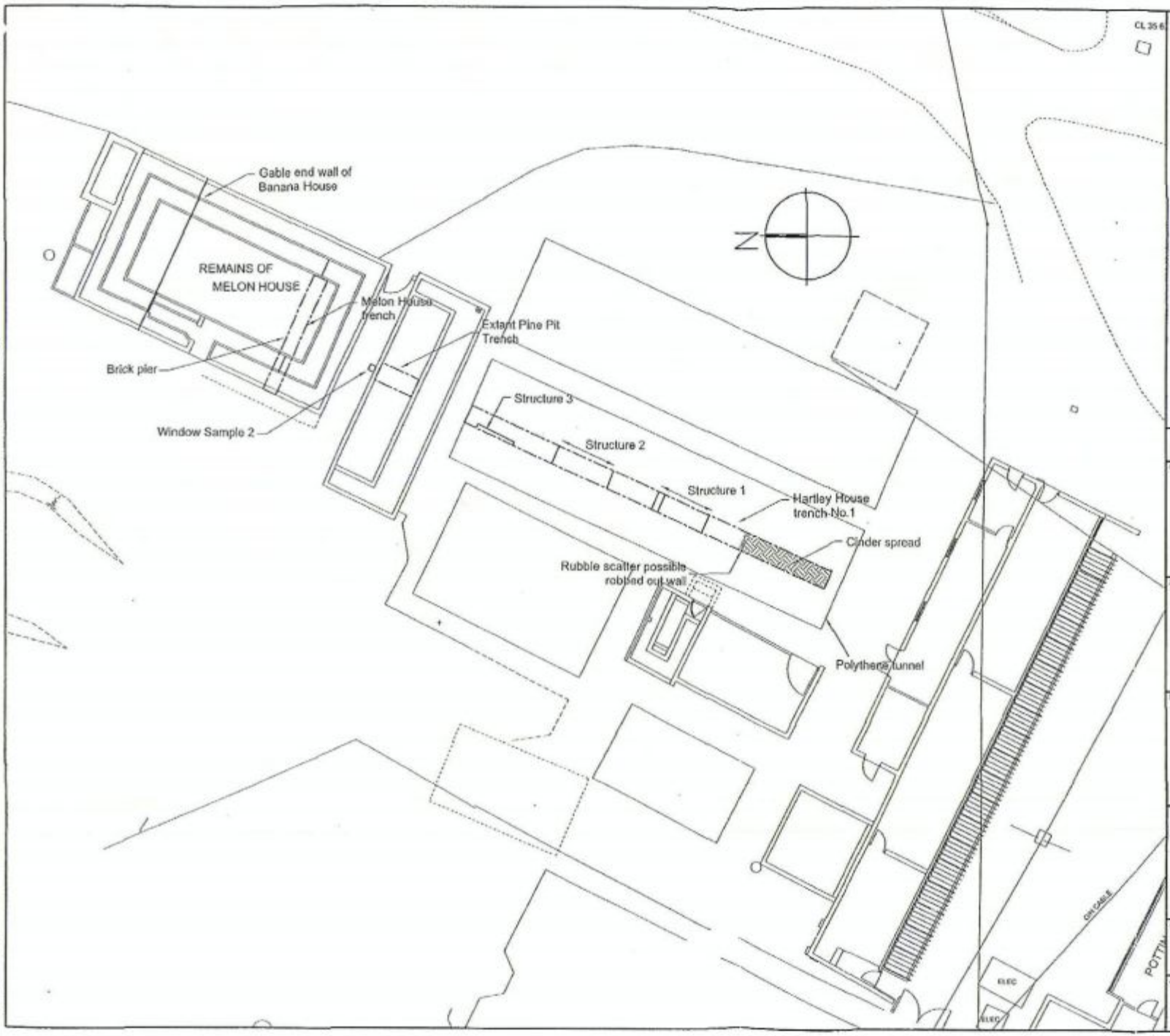


Figure 1 – Site Location Plan



rev.	drawn	chkd.	apprvd.	date	description

CLIENT:-

STAUNTON COUNTRY PARK
MIDDLE PARK WAY
HAVANT
HAMPSHIRE
S051 8GZ

PROJECT:-

STAUNTON COUNTRY PARK EVALUATION OF THE PINE PITS AND 'MELON GROUND'

DRAWING TITLE:-

FIGURE 2:-
TRENCH LOCATION PLAN

CONSULTING ENGINEERS **Gifford**
Carlton House, Ringwood Road
Woodlands, Southampton
Hampshire SO40 7HT
www.gifford-consulting.co.uk
Tel: 023 8081 7000
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scale	date	drawn
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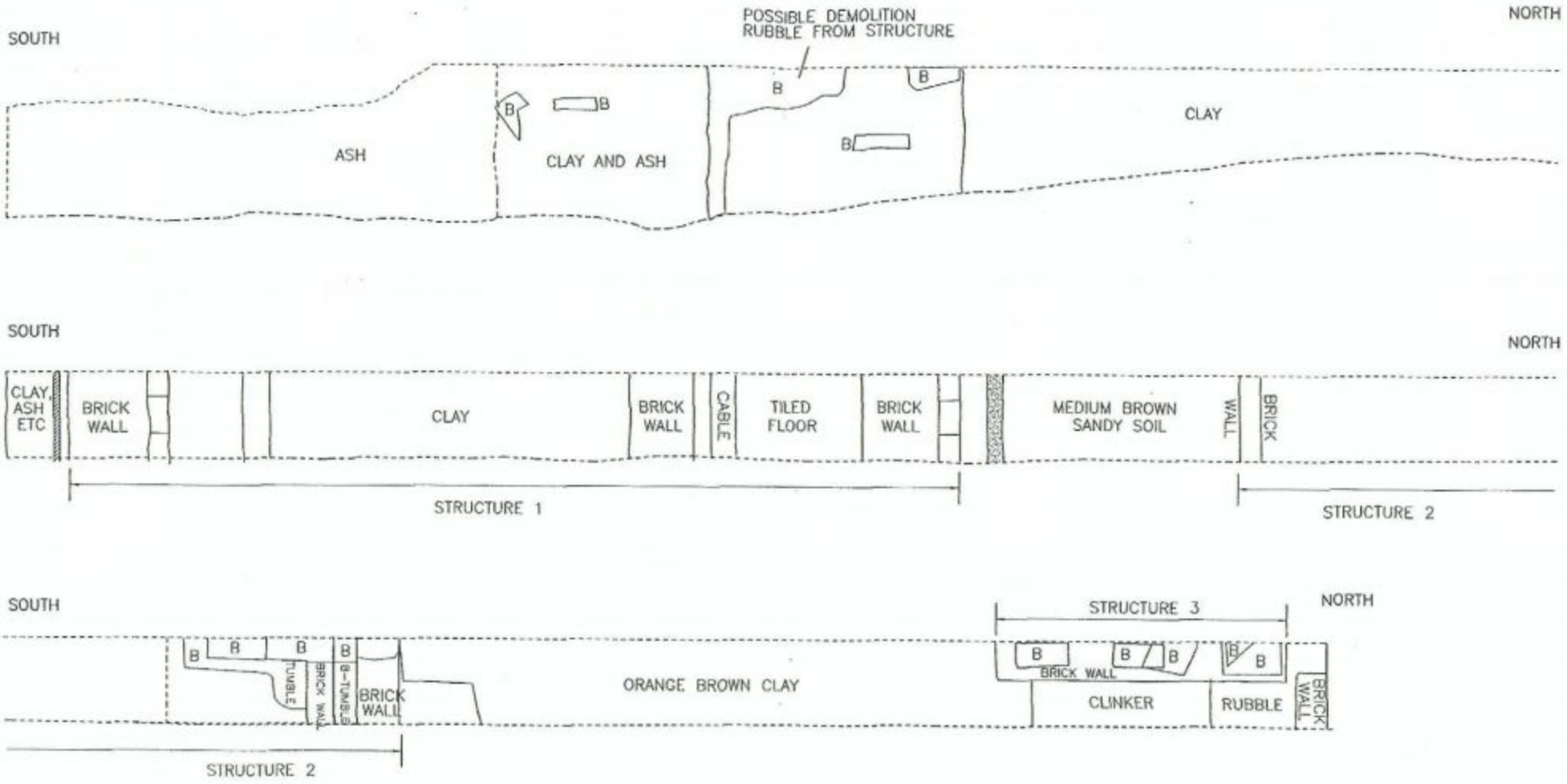
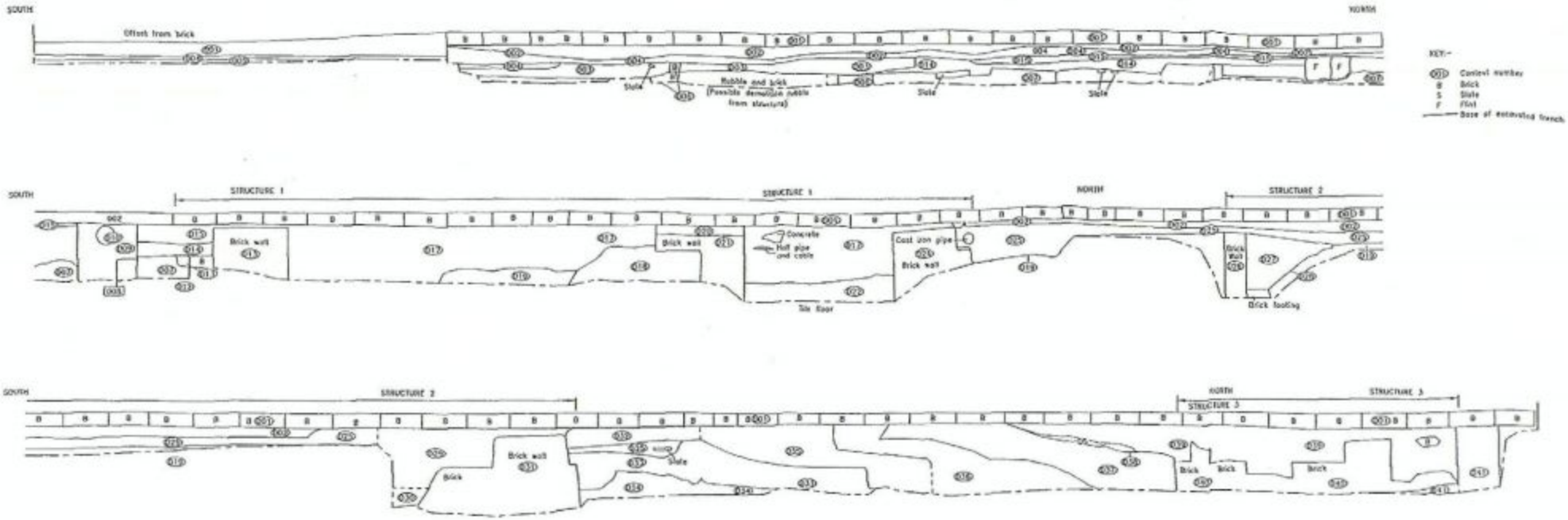
dwg. no.	rev.
11373/PLAN	-



CLIENT:- STAUNTON COUNTRY PARK MIDDLE PARK WAY HAVANT HAMPSHIRE SO51 8GZ	PROJECT:- STAUNTON COUNTRY PARK EVALUATION OF THE PINE PITS AND 'MELON GROUND'	DRAWING TITLE:- FIGURE 3 HARTLEY HOUSE No.1 TRENCH GROUND PLAN	CONSULTING ENGINEERS Gifford Carlton House, Ringwood Road Woodlands, Southampton Hampshire SO40 7HT www.gifford-consulting.co.uk structures.solent@gifford-consulting.co.uk Tel: 023 8061 7500 Fax: 023 8061 7500	scale 1:20	date MAY 04	drawn B HARPER
				drg. no. 11373/S-01		rev.



Client
STAUNTON COUNTRY PARK
MIDDLE PARK WAY
HAVANT
HAMPSHIRE
SO51 8GZ

Project
STAUNTON COUNTRY PARK
EVALUATION OF THE PINE PITS AND 'MELON GROUND'

Drawing Title
FIGURE 4
HARTLEY HOUSE No.1 TRENCH
EAST FACING SECTION

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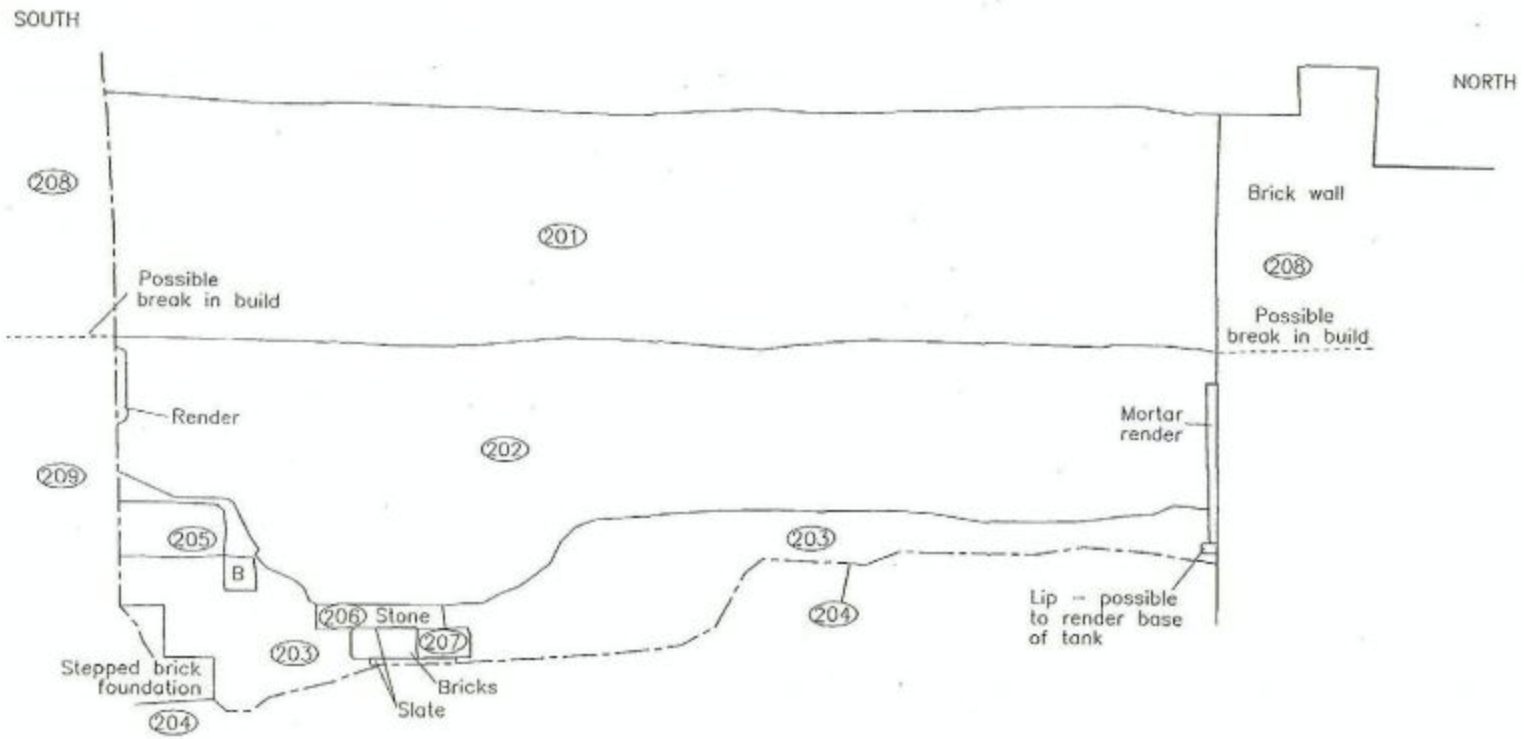
drawn B HARPER
drg. no. 11373/S-01
rev. -



KEY:–

(001)	Context number
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001	Slate
001	Flint
– – –	Base of excavated trench

rev.	drawn	chkd.	apprvd.	date	description

CLIENT:–

STAUNTON COUNTRY PARK
MIDDLE PARK WAY
HAVANT
HAMPSHIRE
SO51 8GZ

PROJECT:–

STAUNTON COUNTRY PARK:- EVALUATION OF THE PINE PITS AND 'MELON GROUND'

DRAWING TITLE:–

FIGURE 5:-
EXTANT PINE PIT TRENCH
EAST FACING SECTION

CONSULTING ENGINEERS **Gifford**
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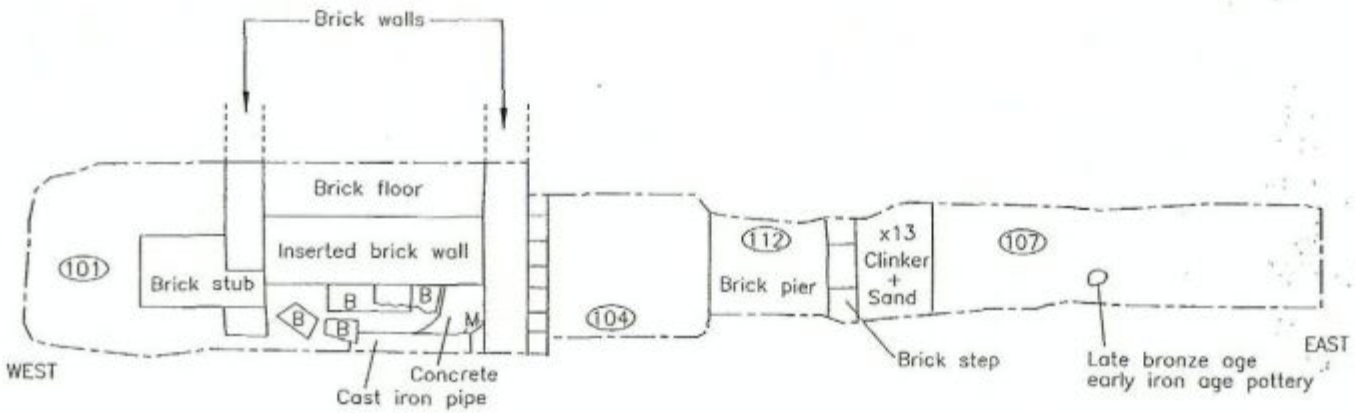

FIGURE 6 TRENCH PLAN

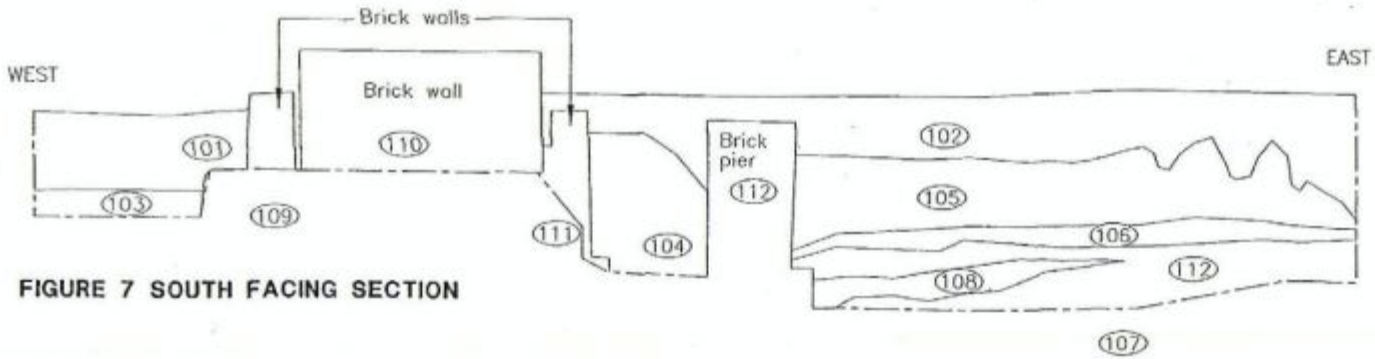

FIGURE 7 SOUTH FACING SECTION

KEY:-

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Brick
001 Slate
001 Flint
Base of excavated trench

rev.	drawn	chkd.	appvd	date	description

CLIENT:-

**STAUNTON COUNTRY PARK
MIDDLE PARK WAY
HAVANT
HAMPSHIRE
S051 8GZ**

PROJECT:-

**STAUNTON COUNTRY PARK:-
EVALUATION OF THE PINE PITS AND 'MELON GROUND'**

DRAWING TITLE:-

**FIGURES 6 AND 7:-
'MELON HOUSE' TRENCH PLAN AND SOUTH FACING SECTION**

CONSULTING ENGINEERS **Gifford**
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11373/S02+P02	-

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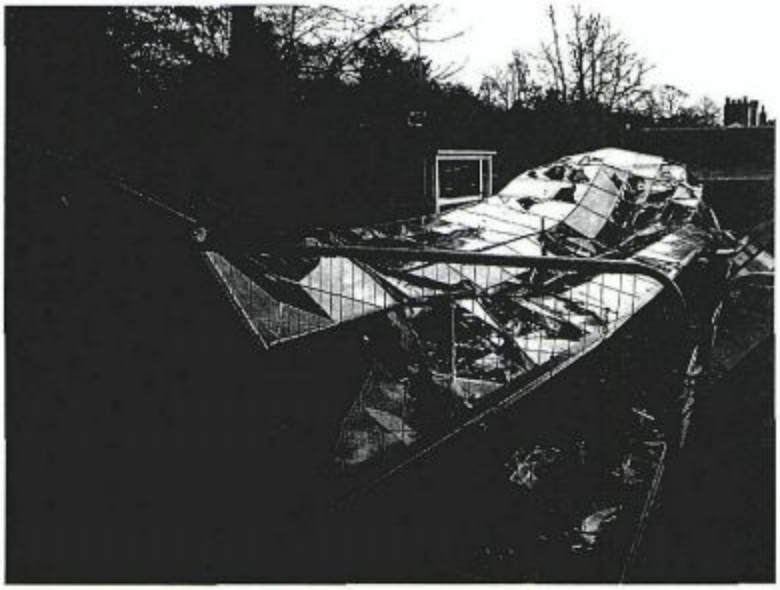

The Hartley No.2 Greenhouse



The Hartley No.2 Greenhouse



The Hartley No.1 Greenhouse

IMAGES OF THE SITE AS EXISTING
Circa. 03.2010

Hampshire County Council