

birmingham archaeology

The Walled Garden,
Shugborough Estate,
Milford, Staffordshire
Archaeological Investigations
2009
Volume I: Text and Appendices

UNIVERSITY OF
BIRMINGHAM



The Walled Garden, Shugborough Estate, Milford, Staffordshire

Archaeological Investigations, 2009

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The Walled Garden, Shugborough Estate, Milford, Staffordshire

Archaeological Investigations, 2009

SUMMARY

Birmingham Archaeology was commissioned in May 2009 by Staffordshire County Council to undertake a programme of archaeological investigations at the Walled Gardens, Shugborough Estate, Milford, Staffordshire (NGR SJ 99125 21586). The work comprised an archaeological desk-based assessment, a programme of historic building recording and the excavation of a series of evaluation trenches and test pits within and around the walled garden. The programme of archaeological investigations was undertaken to inform a proposed representation project related to the Georgian Walled Kitchen Garden.

The Walled Gardens were built to the designs of the architect Samuel Wyatt in 1805/6 as part of a wide ranging programme of improvements to the Shugborough Estate undertaken by Thomas Anson II, later to become the 1st Earl Lichfield in 1831, in the early years of the 19th century.

The desk-based assessment reviewed all relevant and readily available published and unpublished documentary source material, including historic maps, early photographs and drawings, written descriptions and primary and secondary sources related to the site. A sizeable collection of historic maps and plans has allowed for the development of the gardens to be traced in some detail.

A programme of historic building recording extended to a drawn, written and photographic record of the boundary walls of the gardens, undertaken to a level commensurate with a 'Level 2' record as defined by English Heritage. Further, a written and photographic record of the Head Gardener's House and associated bothy ranges was undertaken to augment a drawn record Jeremy Milln of the National Trust, completed in 1997-9, prior to remedial stabilisation and refurbishment works to the buildings.

A series of archaeological trenches and test pits excavated within and around the walled gardens investigated former ranges of glasshouses and pathways within the north garden, path routes and a former dipping pool within the south garden and associated garden structures in the east annex and south-east garden areas.

Archaeological excavation revealed that both the extent of survival and state of preservation of below ground remains related to the Georgian and Victorian glasshouse ranges and the associated garden features was good and have potential to both inform and/or be incorporated within any proposed representation scheme.

The Walled Garden, Shugborough Estate, Milford, Staffordshire

Archaeological Investigations, 2009

1 INTRODUCTION

1.1 Background to the Project

- 1.1.1 Birmingham Archaeology was commissioned in May 2009 by Staffordshire County Council (SCC) to undertake a programme of archaeological investigations at the Walled Garden, Shugborough Estate, Milford, Staffordshire (NGR SJ 99125 21586; Figure 1). The work comprised an archaeological desk-based assessment, a programme of historic building recording and the excavation of a series of evaluation trenches within and around the walled garden.

1.2 Reasons for Work

- 1.2.1 The programme of archaeological investigations was required by Staffordshire County Council and was undertaken to inform a proposed representation project related to the Georgian Walled Kitchen Garden.
- 1.2.2 The project was undertaken in accordance with a *Project Brief for Archaeological Trial Trenching and Structural Recording* prepared by Staffordshire County Council (May 2009), following a methodology outlined in a *Tender Proposal* document prepared by Birmingham Archaeology (June 2009; with amendments) and approved by SCC in advance of work. A copy of the *Tender Proposal* document is included below as **Appendix A**.

1.3 Scope of this Report

- 1.3.1 This report outlines the results of the investigations, which were undertaken in accordance with the Institute for Archaeologists' *Standard and Guidance for Archaeological Desk-Based Assessment* (IfA, 2008a), *Standard and Guidance for the Archaeological Recording of Standing Buildings or Structures* (IfA, 2008b) and with English Heritage's *Understanding Historic Buildings: A Guide to Good Recording Practice* (English Heritage, 2006).

1.4 Presentation of this Report

- 1.4.1 Following a statement of the project aims and objectives (§.2), an outline of methodologies employed (§.3) and a summary of the site location and statutory designations (§.4), the results of the study will be presented in three sections. Section §.5 will present an analysis of the archaeological and historical background, including a review of historic mapping and historic photographs, Section §.6 will present detailed descriptions of the recorded buildings and structures and Section §.7 will summarise the results of the archaeological trenching, detailed trench descriptions being included as **Appendix C** with tabulated individual context descriptions in **Appendix E**.
- 1.4.2 Due to the large amount of material and for ease of reference, figures and plates referred to in the following text are presented as a separately bound volume, 'The

*Walled Garden, Shugborough Estate; Archaeological Investigation, 2009; Part 2
Figures and Plates'.*

2 AIMS AND OBJECTIVES

- 2.1 The general aim of the proposed scheme of works was to prepare a baseline record of the walled garden site and to inform understanding as to the basic significance of the origins, development and significance of the extant structures and archaeological remains.
- 2.2 The objective of the project is to evaluate the date, nature, extent and significance of archaeological remains within the walled garden and to inform the appropriateness and scale of further archaeological investigations.
- 2.3 Further objectives are to inform the interpretation and thus the architects' design proposals for the restoration of the walled garden complex.

3 METHODOLOGY

3.1 Desk-Based Assessment

- 3.1.1 A search was made of all relevant and readily available published and unpublished documentary source material, including historic maps, early photographs and drawings, written descriptions and primary and secondary sources related to the site held by the Staffordshire Museums Service at Shugborough, the Staffordshire Record Office, the Lichfield Record Office, the William Salt Library, Stafford and the libraries of the University of Birmingham. The Staffordshire County Council Sites and Monuments Record (SMR), the principal source of archaeological data for the county, was also consulted. Standard on-line resources such as A2A, NMR and Staffordshire County Council's 'Gateway to the Past' were also consulted.
- 3.1.2 Documentation regarding the day to day running of the walled garden (labour lists, cash books, planting schedules, journals etc.)¹ has not been researched in detail as part of the current project.
- 3.1.3 Aerial photographs were not consulted and/or re-plotted as part of the current project.

3.2 Historic Building Survey

Drawn Record

- 3.2.1 Drawn recording of the garden structures was based for the most part upon re-existing survey material generated by Jeremy Milln of the National Trust. All pre-existing drawings have been digitised in AutoCAD. New hand survey was undertaken to the northern dipping pool and the Potato store within the east garden.

Photographic Record

- 3.2.2 The photographic record comprised black and white negative and high resolution digital photography using a Nikon D50 single lens reflex cameras and was commensurate with a 'Level 3' record as defined by English Heritage (2006, 14), extending to include both general and detail shots, contextual views and accessible

¹ SCRO D615/E

exterior elevations, visible structural and decorative details (interior and exterior), and general interior views of principal rooms and circulation areas. Where possible, photographs included graded photographic scales.

Written Record

- 3.2.3 Written notes were compiled on *pro forma* record sheets as a basis for preparing the written description.

3.3 Archaeological Trial Trenching

- 3.3.1 All stratigraphic sequences were recorded, even where no archaeology was present. Features were planned and sections were drawn of all cut features and significant vertical stratigraphy at a scale of 1:20. A comprehensive written record was maintained using a continuous numbered context system on *pro-forma* cards. Written records and scale plans were supplemented by photographs using black and white monochrome, colour slide and digital photography.
- 3.3.2 All project staff adhered to the Code of Conduct of the Institute for Archaeologists. The project followed the requirements set down in the *Standard and Guidance for Archaeological Field Evaluation* (IfA 2008c).
- 3.3.3 Recovered finds were cleaned, marked and remedial conservation work was undertaken as necessary. Treatment of all finds conformed to guidance contained within the Birmingham Archaeology Fieldwork Manual and *First Aid for Finds* (Watkinson and Neal 1998).
- 3.3.4 The full site archive includes all artefactual remains recovered from the site. The site archive was prepared in accordance with guidelines set down in Appendix 3 of the Management of Archaeology Projects (English Heritage 1991), the Guidelines for the Preparation of Excavation Archives for Long-term Storage (UKIC 1990) and Standards in the Museum Care of Archaeological collections (Museum and Art Galleries Commission, 1992). The paper archive will be deposited with the appropriate repository subject to permission from the landowner.

4 SITE LOCATION AND DESIGNATIONS

4.1 Site Location

- 4.1.1 The Shugborough Estate is located close to the village of Milford in Staffordshire, c.7km to the east of the county town of Stafford. The Park lies to the south of the confluence of the rivers Sow and Trent, overlying sand and gravel terrace deposits, with alluvium characterising areas adjacent to the rivers themselves.
- 4.1.2 The Walled Garden is located to the south of the Hall to the eastern side of a metalled roadway leading northwards from the main Stafford-Lichfield Road (A513) to the current Hall, a Grade I listed building dating in part to c.1695. The site comprises three walled gardens surrounded by three unwallled areas all enclosed within a ditch or ha-ha (Plate 1). The gardens are centred on NGR SJ 99125 21586. A watercourse, the Sherbrook, runs parallel to the western side of the walled gardens forming for part of its length the western boundary of the gardens. Beyond the north-west corner of the gardens, the brook is culverted emptying into the mill pond to the north at Park Farm.

4.2 Statutory Designations

- 4.2.1 Shugborough Park is listed as Grade I on the English Heritage's Register of Parks and Gardens of Special Interest and upon the Staffordshire HER **40130**.
- 4.2.2 The Walled Garden and Gardener's Cottage are included on the Statutory List of Buildings of Historic or Architectural Interest as Grade II* listed buildings (see below) and upon the Staffordshire HER **12803**.

Statutory List Entry:

SJ92SE

COLWICH

SHUGBOROUGH ESTATE

603/19/50A

Walled Garden and Gardener's Cottage

II*

Walled garden and conservatory including gardeners house, c.1806. Possibly designed by Samuel Wyatt for Viscount Anson. Brick and ashlar. Gardeners house ashlar with hipped slate roof. Quoins. 4 bay. 2 storey. Central segment headed opening with central double doors with glazed side panels and large oversight, originally opening into conservatory now removed. Either side are single doorways with ashlar moulded surrounds, above 4 glazing bar sashes with continuous cill band, moulded ashlar cornice and low parapet. Either side are brick walls 3 metres high with ashlar coping, forming the northern side of a large trapezoidal shaped, enclosed garden, with central rusticated ashlar gatepiers on the southern wall. The central bisecting wall has a large central opening with rusticated quoins. The entrance gateway on the northern end of the west wall has large rusticated gatepiers with pyramidal caps.

5 GENERAL ARCHAEOLOGICAL AND HISTORICAL CONTEXT

This section of the report describes the known archaeological and historical development of the walled gardens and a study area of 500m radius created for the purposes of the assessment (Figure 2). It is based upon information current and available as of August 2009. Other areas of archaeological or historical importance, not presently recorded, may be identified during subsequent phases of field investigation.

5.1 Known Archaeological Sites

- 5.1.1 A total of 25 sites are recorded on the SCC SMR within a 500m study area centred on the walled gardens.²

HER Ref. No.	Type*	Site name/description	NGR	Period/Date
01649	Doc	Deserted settlement	SJ 98988 21704	Post-Med.
03260	LB II	Railway tunnel	SJ 9847 2161	Victorian (1847)
04073	Doc	Site of army camp/military hospital	SJ 99475 212630	C20th
04074	CM	Field system	SJ 99833 21544	N/K
04075	CM	Double ring ditch	SJ 99601 21370	Late Neo / early BA
04076	CM	Linear feature / trackway	SJ 99560 21279	N/K
04612	CM	Ring ditch, enclosure, pit alignment	SJ 98911 21688	Late Neo / early BA
20045	HB	Military building, army camp	SJ 99595 21554	C20th
20792	EW	Trackway	SJ 98547 21775	N/K
20797	Doc	Deer Park	SJ 98702 20718	Late Med
20798	Doc	Watermill	SJ 99092 21871	Post. Med.
40130		Shugborough Park	SJ 99260 21898	Post Med.
08035	LB II*	Farmhouse, Shugborough Park Fm.	SJ 9915 2186	1803-6
08036	LB II	N Range, Shugborough Park Fm.	SJ 9912 2188	1803-6
08037	LB II*	S Range, Shugborough Park Fm.	SJ 9911 2186	1803-6
12803	LB II* / HB	Walled Garden, Shugborough Park	SJ 9914 2159	c.1805
12802	LB II*	Hay Barn/cottages, White Barn Fm.	SJ 9886 2138	c.1806
12801	LB II*	White Barn Farm	SJ 9889 2136	c.1806
08025	LB II*	Tower of the Winds	SJ 9918 2192	C18th
08029	LB I	Triumphal Arch	SJ 9866 2158	C18th
50720	HB	Sherbrook Aqueduct	SJ 99041 21515	Victorian (1847)
50721	Doc	Mill Pond, Lower Mill	SJ 99015 21995	Post Med.
51302	HB	Milepost adjoining White Barn Farm	SJ 998 212	Georgian-Victorian
51838	HB	Park Farm	SJ 9912 2187	1803-6
51839	HB	White Barn Farm	SJ 9888 2136	Pre-1771

*** Site Classification:**

SAM: Scheduled Ancient Monument	PAW: Previous Archaeological Work
HPG: Historic Park or Garden	LB: Listed Building
AS: Archaeological Site	LLB: Locally Listed Building
FS: Archaeological Findspot	HB: Historic Building (unlisted)
EW: Earthwork	Doc: Documentary Evidence
CM: Cropmark	

TABLE 1: Sites registered with the SCC SMR within the Study Area (see Figure 2).

5.2 Early History

- 5.2.1 Shugborough's location at the confluence of the rivers Trent and Sow, occupying relatively low lying, free draining gravel terraces raise the possibility for prehistoric activity in the area. Such confluence sites have been identified elsewhere in the

² A Register of National Trust HBSMR entries, including cross-referencing to SCC references, is included below as **Appendix B**.

region as loci for prehistoric activity particularly of a ritual or funerary nature (Halsted 2005, 10; SCC nd, 6), for example at Whitemoor Haye (Hewson, 2006) and Catholme (Buteux and Chapman, 2009). Prehistoric activity within the bounds of Shugborough Park and within the current study area is evidenced by a series of undated cropmarks, identified by aerial photography and recorded on the SCC SMR (see Table 1 above; Figure 2). These appear to represent a double ring-ditch (**SMR 04075**), a further ring-ditch, enclosure and pit alignment (**SMR 04612**) and a trackway (**SMR 04076**). Further undated cropmarks represent a probable early field system and associated trackways (**SMR 04074**).

- 5.2.2 Evaluation work carried out by Birmingham Archaeology in 2005 on the site of the new ticket office immediately west of the walled gardens confirmed the presence of prehistoric occupation with well preserved middle Bronze Age ceramics of a type rarely found in the region being recovered from an alluvium sealed context (Halsted 2005, 10).
- 5.2.3 There is no recorded activity dating to the Roman or Anglo-Saxon periods within the study area or the wider Shugborough Estate (SCC nd, 6), although a single sherd of pottery recovered during the 2005 evaluation was dated to the Romano-British period (Halstead 2005, 9). Little can be inferred from such an isolated find.

5.3 Historical Development of the Park³

- 5.3.1 Little is known of the early history of Shugborough; it formerly formed part of the estates of the Bishops of Coventry and Lichfield who owned a moated site beside the River Sow in the area of the present house (Sambrook nd, 25). This house passed in 1546 to William Paget, secretary of State to Henry VIII; Paget's principal Staffordshire residence was however at Beaudesert Hall and he was never resident at Shugborough. The residence was sold on to one Thomas Whitby and further in 1624, together with 80 acres of land, to William Anson of Dunston. The old manor house was demolished in 1695 by Anson's grandson, William Anson III, who erected a new house on the site which survives today as the core of the much altered Shugborough Hall.
- 5.3.2 The former village of Shugborough (**SMR 01649**), a bailiwick of the Manor of Haywood in the Parish of Colwich. Possibly dating from the 14th century, it lay along the road from Cannock Chase to the south to the village of Great Heywood on the northern bank of the Trent. It was accessed via the 16th-century 'Essex Bridge', represented today by the roadway leading from the walled gardens to the mansion house. To the south of the village were a series of open fields, pasture and meadow (Bates 1984, 3; figure 2). Following piecemeal enlargements of the Anson family holdings, the village was swept away during emparking of the Shugborough landscape (**SMR 40130**) undertaken in the later 18th century, effected in the main by William Anson III and his son Thomas, the former villagers being rehoused in cottage property built by the Anson's in Great and Little Haywood (Stitt 1970, 109). Occupation continued on the site of the former village as late as the turn of the 19th century with the last vestiges visible on estate plans from the 1770s and c.1800 (Figures 3 and 5); much of this, however, was new-build of c.1770 erected to house estate staff (Bates 1984, 13), though the unusual alignment and ground plan of 'Widow Sayer's' house, annotated on the 1800 plan (Figure 5) perhaps suggests it may have represented a survival from the original village. At any account, the last traces of the village were

³ It is beyond the scope of the current report to review the history of Shugborough as a whole. The summary presented here is based for the most part on previous studies, principally Bates (1984), Sambrook (n.d.) and Sekers (1998).

removed in the early years of the 19th century; the decline of the village has been discussed at length by Stitt (1970) and will not be repeated here.

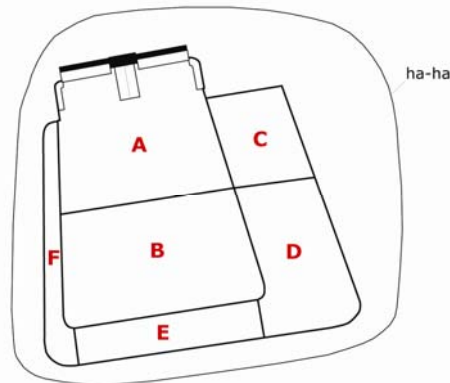
- 5.3.3 Anson was succeeded in 1773 by his nephew George Adams who took the Anson name; together with his son Thomas Anson II (created Viscount Anson in 1802) the control of the former village was completed. Between 1798 and 1805, John Webb was employed as landscape gardener at Shugborough (Bates 1984, 14) while the acclaimed architect Samuel Wyatt was retained on a number of building projects within the park including Park Farm (**SMR 08035-7, 51838**) and White Barn Farm (**SMR 12801/2, 51839**) both of c.1803-6. The result was 'a self-sufficient working estate to rival the best in the country' (Caddy, 2008, 9). It was as part of Wyatt's work that the walled kitchen gardens currently under consideration (**SMR 12803**) were created in 1805 to supply fruit, vegetables and cut flowers for the hall on a year round basis. The original form and development of the walled garden is discussed in more detail in Sections §.5.4 and §.5.5 below.
- 5.3.4 During the first half of the 19th century, two railway lines were cut through the park one of which, the Trent Valley Line of the London and North Western Railway (LNWR) constructed in 1845-7, directly affected the walled garden complex. The line was strongly opposed by the Earl of Lichfield but, as no suitable alternative routes were available, an agreement was finally signed in 1845 and a fee of £30,000 paid for the required land take and compensation for 'injury to the residence' of the Earl (Bates 1984, 34). The impact of the line on the landscape of the park was minimised by the provision of a tunnel (**SMR 03260**), furnished with ornamental stone entrance portals, that to the east being immediately west of the walled gardens. A plan of the proposed railway dating to 1847 (Figure 12),⁴ shows the line truncating the south-western corner of the ha-ha enclosed garden area, with the bank of the associated cutting starting immediately adjacent to the south-west corner of the enclosing wall. This is shown in more detail on the Ordnance Survey map of 1881-2 (Figure 13). With the creation of the cutting, the line of the Sher Brook was carried over the line by a newly created aqueduct (**SMR 50720**).

5.4 The Walled Garden

- 5.4.1 As noted above, the Walled Garden's originated in 1805 forming part of extensive works at Shugborough by the architect Samuel Wyatt, undertaken under the patronage of Thomas Anson II. Anson had married Anne-Margaret Coke, daughter of the renowned agricultural reformer Thomas Coke of Holkham, Norfolk, in 1794 and it may be that this family connection had an influence on the horticultural developments undertaken at Shugborough.⁵

⁴ SCRO Ref. D615/M/6/61.

⁵ Holkham's walled kitchen garden, also by Wyatt, was laid out in the 1780s pre-dating his work at Shugborough.



Schematic plan of Walled Gardens as built 1805/6

- 5.4.2 The gardens as shown on a map of 1806 comprised six discrete areas (A-F in the schematic plan above) all enclosed within a ha-ha with protective tree planting. The arrangements of the original garden have been discussed in some detail by Bates (1984) and will not be repeated here. William Pitt described the gardens in 1817 in his 'Topographical History of Stafford':

'A kitchen garden of several acres is walled and sub-divided; the walls well stored with the choicest fruit trees, with very extensive ranges of hot-houses in which the pineapple, the grape, the peach, the fig and other varieties of hothouse fruits, flowers and plants are cultivated in the highest perfection. One of the hot-houses is heated with steam, in which melons and cucumbers are produced in perfection at all seasons. These gardens are a kind of academy for the study of horticulture, in which young men enter themselves to assist without pay, for the purpose of improving themselves, and gaining knowledge in the art'.

- 5.4.3 The original form and development of the gardens will be discussed at more length below in the context of a review of historical cartographic and photographic sources.
- 5.4.4 The walled gardens ceased to function as the estate kitchen gardens in the 1930s (Bates 1984, 1) after which they were operated by a series of market gardeners and nurserymen working on a commercial basis, the last of whom left in 1959 (*ibid.*). The Shugborough Estate was given over in lieu of death duties in 1966 and is currently owned by the National Trust, being maintained and financed by Staffordshire County Council under the terms of a 99 year lease (Caddy 2008, 12).

5.5 Map Regression

Early Estate Maps

- 5.5.1 The earliest plan of the Shugborough Estate identified in the archives is a survey of c.1770 reproduced below as Figure 3/4.⁶ The plan predates Thomas Anson's development of the kitchen gardens, the future site of which is annotated 'T Clifford

⁶ SCRO D615/M/6/43.

Esq' and 'Mr Lander', although it is apparent that Anson's programme of land acquisition was well underway with a number of plots labelled 'T. Anson Esq' and his 'Triumphal Arch' (**SMR 08029**) had already been constructed on High Leasow to the south-west. To the north, the remnants of Shugborough village are discernible, with various structures depicted including alms houses being annotated on both sides of the road.⁷

- 5.5.2 A plan of the Shugborough estate dating to c.1800 illustrates the layout of the park immediately prior to the reworking by Samuel Wyatt in the early 19th century (Figure 5).⁸ Of particular interest is the fact that the survey depicts the outline of the then proposed walled garden, of trapezoidal plan sketched in pencil, with widths of 70 yards and 120 yards annotated to the northern and southern sides respectively (Figure 6); it is unclear at what date this annotation was made on the plan (ie. whether it depicts a 'proposal' or whether it post-dates the building of the gardens), though it may be relevant that it indicates only the two, earliest walled garden areas (A and B). Other features of interest include a possible previous kitchen garden located to the north-east of the proposed site, laid out with paths and regular rows of planting. Between this garden and the proposed new site were located a marl pit and small (?) pool while to the east were located a 'Cop Shed' and rick yard, the former apparently comprising two short east-west aligned ranges linked by a longer range, open to a hollowed former sandstone quarry to the east. Immediately north of the proposed garden site, a paper mill occupied the site of the later Park Farm (**SMR 51838**) on the northern side of the mill pond (**SMR 50721**).
- 5.5.3 The settlement of Shugborough is shown to the north of the proposed garden site, and at that date included a terrace of estate workers houses (either 7 double fronted or 14 single cottages), dating to c.1770, with associated gardens to the west side of the road, and a scatter of buildings to the east including a cow shed and workshop; 'Widow Sayer's' to the south possibly represents the last remnant of the original Shugborough village.
- 5.5.4 The earliest map to show the walled kitchen garden in detail is a survey of 1806 (Figure 7).⁹ The survey clearly shows the gardens, formed of six separate walled areas within a rounded, approximately rectangular enclosure (the ha-ha) with extensive tree planting, particularly to the north-east corner. The layout of the gardens is much as survives today with the principal northern and southern walled areas, an eastern annex garden, south-east and southern enclosed areas¹⁰ and a narrow strip extending along the western boundary; internal arrangements of the gardens themselves are not indicated. The Sherbrook is clearly visible forming the western boundary of the gardens, being culverted from the north-west corner on. At the northern boundary of the walled gardens, the primary phase of the Head Gardener's House is indicated occupying a simple rectangular plan at the centre of the bounding wall. Solid ranges (the bothies) extended to east and west of the house for the full width of the garden backing onto the northern side of the boundary wall while, to the south, glasshouses are indicated by cross-hatched blocks. The primary phase conservatory is indicated by a further block extending southwards from the centre of the Gardener's House. The northern ends of the eastern and western garden walls

⁷ The existence and nature of these alms houses are discussed at more length by Stitt (1970, 106-7).

⁸ SCRO D615/M/6/44.

⁹ SCRO D615/M/6/46.

¹⁰ Although shown as enclosed on the survey, it is not clear that the south-eastern and southern areas were ever walled; the eastern boundary of the south-eastern area retains a boundary of mature yew trees and this may reflect the original arrangements.

both clearly terminated in curving sections at this date, though the north-west corner was subsequently altered (see §.6.1.2). No details of the internal layout of the gardens is provided by the 1806 plan, likewise no indication of original entrance doors and gates is shown.

- 5.5.5 Further afield an L-shaped structure had been erected facing the cop shed indicated on the earlier plan to the east, both structures being set within a small wooded area entered via a track from the south.¹¹
- 5.5.6 A survey of c.1818-31 (Figure 8)¹² shows an essentially similar layout to that depicted in the 1806 plan, and may indeed have been based upon the earlier depiction; the arrangement of the buildings remained unchanged though details as to the functional design of the gardens themselves are indicated for the first time. Both the northern and southern gardens were partitioned to form four quadrant plots by rectilinear pathways running on the central axes of the walled enclosures, with further pathways extending around the perimeter in each case. No entranceways are indicated on the plan, though an exterior track, aligned east-west, at the north-west corner suggests that this was the location of the primary access; such a location would be logical, being closest to the Park Farm and to the Hall itself. Subsidiary gardens were served by a similar network of paths. No indication is given of the large dipping pools evident on later maps and surviving today.
- 5.5.7 A further, undated plan (Figure 9)¹³ would appear to be contemporary, showing an almost identical layout, and probably represents a poorer quality copy of the plan described above. A significant detail of this plan, however, is the depiction of the north-eastern and north-western corners of the north garden which are both shown as forming right-angles. While the north-western corner has at some point been changed to this arrangement, it is self-evident that the north-eastern angle retains its curved wall to this day and so the accuracy of the plan must be brought into question in this respect and it cannot be used to draw any conclusions as to the date at which alterations were made at the north-west corner.¹⁴
- 5.5.8 A plan of 1833 (Figure 10)¹⁵ illustrates significant developments within and around the walled gardens. Firstly, the Head Gardener's House had been extended with the addition of a small, approximately square block projecting from the centre of the north elevation, while a small, square structure (possibly a toilet) is shown to the north-west of the house adjacent to the ha-ha. Glasshouses to the east and west of the gardener's house are shown as solid, shaded blocks, as is that in the north-west angle of the garden; no glasshouse is indicated in the north-east angle while the conservatory is shown in outline only, the significance of which is unclear. More detail is given of the internal arrangement of the gardens with the central dipping pools being indicated for the first time along with a number of gateways. Opposing openings are indicated in the northern part of the eastern and western bounding walls while further gateways are shown in the centre of the central dividing wall between the north and south gardens and within the southern wall of the south garden, all of which survive today. Within the east annex garden, two substantial structures had been erected to the north, corresponding to the northern two sets of surviving

¹¹ Later maps, in particular the Ordnance Survey editions (Figures 13-16), indicate that the cop shed and related structures were located within a small, quarried hollow.

¹² SCRO D615/M/6/50.

¹³ SCRO D615/M/6/53.

¹⁴ This cartographic discrepancy is repeated in all later depictions of the gardens, including the Ordnance Survey mapping (Figures 13-16).

¹⁵ SCRO D615/M/6/52.

footings,¹⁶ while the small rectangular potato store structure is first indicated in the south-east corner.

- 5.5.9 To the north-east, beyond the limits of the east annex garden itself but within the ha-ha enclosure, a long range aligned approximately east-west with two (?)chimney projections to the northern elevation is indicated; this building is shown on plans down to c.1847 (Figure 12) though no trace survives today. Its function is unclear though its plan form suggests some form of stove house. Further to the east, the L-shaped range opposite the cop shed, first depicted in the 1806 survey (Figure 7), had been removed.
- 5.5.10 The Colwich Tithe map of 1839 (Figure 11)¹⁷ shows a similar layout to the 1833 plan, though details are more 'sketchy' in nature and the footprints of buildings, for example the Head Gardener's House and the north-western glasshouse, appear indicative. The line of the planned Trent Valley Railway Line of 1847 is shown in outline, cutting across the south-western corner of the ha-ha enclosure, though this feature would appear to have been added to the map at a later stage.
- 5.5.11 The last pre-Ordnance Survey depiction of the gardens is a plan of c.1847 (Figure 12).¹⁸ The single major change evident from this depiction would appear to be the removal of a bounding wall (if one originally existed) defining the southern edge of the garden beyond the south walled garden area (E on the schematic plan above).¹⁹ Thus the south-eastern garden (D) would appear to have been enclosed by a wall on its eastern and southern sides, the latter returning northwards to abut the bounding wall of the southern walled garden immediately west of its curving south-eastern corner. The internal arrangements of the gardens are shown in some detail though it is unclear whether this represents an accurate depiction or is merely indicative.

Ordnance Survey Maps

- 5.5.12 General developments within and around the gardens in the later 19th century and during the course of the 20th century can be gleaned from a review of Ordnance Survey mapping. Unfortunately, the single, largest known programme of work within the gardens, *viz.* the remodelling of the vineries and conservatory in the later-19th century, is not traceable through historic plans, as the new glasshouses maintained the same plan form as the earlier buildings.
- 5.5.13 The greatest development evident on the 1st Edition Ordnance Survey map of 1881-2 (Figure 13) is the introduction of the Trent Valley Line railway, clipping the south-west corner of the walled garden area. As discussed above, this development may have necessitated the removal of a section of southern bounding wall of the garden complex; the extent of change evident on the 1881-2 plan is greater than that shown on the 1847 view, with the south-western garden area (D) being here bounded only to the eastern side, a boundary today formed solely by an alignment of mature yew trees.
- 5.5.14 Developments within the gardens include the introduction of a new glasshouse within the south walled garden, backing onto the south side of the north-east wall (see

¹⁶ Labelled 'mess room and tool shed (boiler house under)/glasshouse' and 'tomato house' on Milln's survey of 1997 (see Figure 52).

¹⁷ SCRO D1274/2/1. No accompanying schedule.

¹⁸ SCRO D615/M/6/61.

¹⁹ The original existence of this southern wall has not been established.

Figure 18); on-site observations (see §.6.5.2) indicate this glasshouse was constructed by Messenger and Co. of Loughborough. Within the east annex garden a series of three additional east-west aligned ranges had been added to the south of the two ranges indicated on the earlier plan (see Figure 22) while, beyond the garden to the north-east, the stove house evident on plans between 1883 and 1847 had been removed. The system of pathways within and external to the gardens imply that the pedestrian doorway within the west wall of the north garden (see §.6.1.3) was in place by this date.

- 5.5.15 The 1st Revision map of 1901-2 (Figure 14) records the introduction of a further long glasshouse range, backing onto the southern side of the south wall of the east annex garden (see Figure 22a); on-site observations again indicate that this glasshouse was erected by Messenger and Co. of Loughborough. At the north-east corner of the north garden, the former glasshouse backing onto the boundary wall had been removed and been replaced by a small, free-standing structure on the north side of the east-west path immediately west of the gateway (see Figure 21a), the north-east corner of this glasshouse has been exposed during the current phase of works (see §.7.2.8; Figure 65, Plate 176).²⁰ A long, narrow structure is for the first time implied (by an area of hatching) backing onto the east face of the east wall of the east-annex garden.
- 5.5.16 No significant change is indicated on the 2nd Revision map of 1923-4 (Figure 15), save for the introduction of a pair of small structures within the western slip.
- 5.5.17 The National Grid Series edition of 1971 (Figure 16) shows the gardens after they came into the ownership of the National Trust and the occupation of Staffordshire Council. The southern garden had become transformed to a works compound by this date, with all trace of former garden arrangements removed and a large museum store (Plate 131) occupying the western side of the enclosure. A wide gateway at the south-west corner (Figure 49; Plate 142) presumably relates to the same phase of works. The small free-standing greenhouse at the north-east corner of the north walled garden had been removed and the number of upstanding structures within the east annex garden had been reduced to two.

5.6 Historic Photographs

- 5.6.1 A number of historic photographs (Figures 17-22) are of use in tracing the development and assessing the appearance of the walled garden and associated glasshouses, though these date primarily to the early and middle years of the 20th century, following the Victorian reordering.
- 5.6.2 A single photograph of the late-19th century (Figure 17a)²¹ shows the appearance of the Head Gardener's House flanked to east and west by the original Georgian vinery glasshouses and to the south by the conservatory. The latter structure can be seen to have a low ridge line, the apex being coincident with the projecting string course of the Gardener's House. Both eastern and western glasshouses share a similar ridge level, the eastern vinery appearing to comprise c.20 bays of glazing. In the north-east corner of the garden, the original glasshouse can be seen backing onto the boundary wall, extending to meet the southern return of the north wall though the details of construction at the curving angle cannot be readily discerned.

²⁰ It is interesting to note that the north-east angle of the walled garden is depicted in all OS editions as forming a right angle, although this wall retains its original curved form.

²¹ SCMS FB81.022.0013 (17/1662)

- 5.6.3 A photograph of 1935 (Figure 17b)²² shows the arrangements following the late 19th-century reorganisations, with the conservatory displaying a heightened side wall and ridge levels, the slopes of the raised roofline cutting across the inner windows of the first floor of the Head Gardener's House (see also Figure 19a).²³ The ridge of the western vinery can also be seen to have been raised to a similar height, the apex being set forward (ie. south) of the north boundary wall. The stacks of the Gardener's House had also been heightened significantly since the time of the earlier view.
- 5.6.4 A photograph of 1931/2 (Figure 18)²⁴ depicts a long view of the Head Gardener's House, seen from the south garden looking northwards along the central path, over the southern dipping pool and through the central gateway of the dividing wall. The end gable of the conservatory is clearly visible at the centre of the photograph along with the late 19th-century glasshouse on the southern side of the eastern dividing wall.
- 5.6.5 Two photographs of the interiors of the vineries (Figure 20), dating to the early 20th century, are useful in assessing the internal arrangements of the glasshouses. An image of the interior of the north-east vinery (Figure 20a)²⁵ is of particular interest as this glasshouse would appear to have remained unchanged during the Victorian reordering; the photograph, which dates to c.1940, shows the low outer (southern) wall and shallow roof profile supported by regularly spaced, circular-section (?)iron columns set atop (?)stone piers. The roof itself comprised regularly spaced, solid timber rafters, chamfered to the lower arises, enclosing glazing panels of five lights.
- 5.6.6 The interior of the north-western vinery (Figure 20b; undated)²⁶ illustrates the enlarged Victorian glasshouse with heightened exterior (south) wall and a framework evidently of much lighter construction. The ridge of the glasshouse can clearly be seen set forward of the northern boundary wall and the floor level is set at the same level as that within the corridor of the Head Gardener's House to the east.
- 5.6.7 Two views over the east-annex garden (Figure 21) give a useful overview of the series of free standing structures formerly occupying that space. The first view, Figure 21a looking south-east from the upper floor of the Gardener's House, clearly depicts the late 19th-century, free-standing greenhouse in the foreground while the roofs of the east-annex structures can be seen in the distance; these include a tall chimney at the eastern end of the Tomato House (see Figure 52) and a clear view of the stack at the south-east corner rising above the potato store. A second view looking north-west (Figure 21b) again shows the tall stack at the eastern end of the Tomato House and also depicts a pent roofed range abutting the exterior face of the annex garden east wall.
- 5.6.8 A final pair of photographs (Figure 22) are useful in providing a graphic record of the glasshouses and frames within the east annex garden (Figure 22b) and a view of the Messenger and Co. glasshouse built against the south wall of the east annex garden (Figure 22a).

²² SCMS Acc. No. P98.8.5 img. 1460 (18/1915).

²³ SCMS Acc. No. 99.004.00006.

²⁴ SAMS ref. 2007.007.0009 (32/221474)

²⁵ SAMS Acc. No. FP11.3.84.

²⁶ SCMS P98.8.2 img. 3213 (18/3516).

5.7 Previous Archaeological Work

- 5.7.1 The Staffordshire SMR records no known archaeological fieldwork undertaken within the boundary of the walled gardens themselves.
- 5.7.2 In 1984, an extended programme of research work was carried out by Cheryl Bates as a Community Programme Scheme, funded by the Manpower Services Commission, and sponsored jointly by the NT and SCC. This work has been previously reported (Bates 1984). A further programme of work, comprising a vegetation clearance exercise within the east annex garden was undertaken by volunteers in April 1999 supervised by Mr Jeremy Milln of the National Trust. 'Finds' from the latter exercise were recorded and catalogued by Andrew Birch of the NT Haywood Cliff Volunteer Group (Birch, 1999). Neither programme of National Trust work is included on the Staffordshire HER.
- 5.7.3 Birmingham Archaeology undertook an archaeological evaluation in 2005 on the site of the new ticket office immediately west of the walled gardens (Halsted, 2005). In addition to exposing remains of structures associated with the western slip of the walled garden, the evaluation confirmed the presence of prehistoric occupation within the study area (*ibid.*, 10).

6 SITE ASSESSMENT AND DESCRIPTION OF STANDING BUILDINGS

6.1 The North Garden: General Arrangements

- 6.1.1 The northern walled garden (Plates 2/3) measures 75m wide to the north, widening to 92m at the southern boundary, extending to an area of approximately 0.7 ha. The garden is set out to form four equally sized, quadrant beds, delineated by a series of gravelled pathways surrounding and intersecting the enclosed area (Plates 2/3). At the central crossing of the axial pathways is located an elliptical 'dipping pool' (see §.6.1.7).
- 6.1.2 The eastern and western sides of the garden are bounded by 14in. (1½ brick) brick-built walls (brick dims: 9¼ x 4½ x 3in.) standing c.3.5m (11ft 6in) tall in lightly fired orange-red brick laid to Flemish stretcher bond with three courses of stretchers between Flemish courses, topped throughout by sandstone coping (Plates 4 and 6). To the northern end of the eastern and western walls, primary access is afforded by opposing gateways, 2.85m (9ft 4in) wide, flanked by characteristic sandstone ashlar piers with chamfered quoins, moulded capitals and low pyramidal capstones (see Figures 25/28; Plates 7/15). To the north of the eastern gateway, the brickwork of the boundary wall is angled in slightly and terminated in a curving section of wall (Plate 14) which meets the southern end of the southern return of the north wall. The western wall was originally similarly arranged, as clearly indicated in early plans (Figure 8) and as verified by the current phase of archaeological investigations (section §.7.2.4 below), though the curved terminal was subsequently removed and the wall rebuilt on a rectilinear alignment terminating in a perpendicular return. A straight joint in the brickwork denotes the limit of survival of the original brickwork (Figure 25; Plate 8); cartographic evidence is of no use in identifying a date for this alteration which thus remains unclear.
- 6.1.3 Midway along the eastern wall, a pedestrian doorway with sandstone jambs with chamfered quoins, moulded capitals and elliptical arched head (Plate 17) gives access to the eastern Annex garden. The irregular truncation of bricks to each side of this doorway may indicate that it was inserted into a pre-existing, solid wall though the stylistic similarity to the gateway entrances implies that it formed a part of the original scheme. A pedestrian doorway with segmental brick arch towards the southern end of the west wall (Plate 5) appears to be an insertion, though it was certainly in place by the time of the 1st Edition Ordnance Survey map (Figure 13).
- 6.1.4 The north wall of the garden comprises the rear wall of opposed vineries which were originally arranged to the east and west of the Head Gardener's House (Figures 26/27; Plates 11/12); they also form the rear walls of the bothy ranges to the north (Plates 106/116). Walls are of brick construction, of pale orange-red brick (9in x 3in.), laid to stretcher bond; with symmetrically arranged paired doorway / arched recesses, doors [d36] and [d29] giving access to the western and eastern bothy ranges respectively. Each elevation includes two superimposed 1m (c.3ft) wide bands of brick laid on edge, each capped with a single course of stone, representing the exterior facing of inter-mural heating voids (see Figures 46 and 48). To the west, a number of secondary window openings lighting the bothy ranges ([w30/31]) have been inserted across these wall voids, post-dating the Victorian conversion of the heating system to steam pipes and the redundancy of the inter-mural ducts.

- 6.1.5 The southern returns at the east and west ends of the north wall include significant evidence related to the arrangements of the original vineries and, in the case of the western wall, a later 19th-century reorganisation. At the eastern end of the north wall, the southern return displays the roof scar of the original glasshouse (Figure 27b; Plate 13); this glasshouse would have stood to 3.5m (11½ ft) to the north with a low south wall standing c.1m (3ft 4in.) above current ground level. That section of the wall outside of the profile of the sloping glasshouse roof is constructed in regularly coursed sandstone ashlar, that part originally forming an interior wall in brick, indicating that walls and glasshouse were contemporary; the line of the original glasshouse roof is delineated by a sloping, incised groove within the sandstone blocks. A central socket denotes the location of an original longitudinal, mid-slope purlin which would have been supported on regularly spaced columns along the length of the vinery, depicted in a surviving historic photograph (Figure 20a).²⁷ The western return retains similar evidence for the original glasshouse arrangements (Figure 26a; Plate 10) though here, a further scar and incised groove indicate the profile of the secondary glasshouse introduced in the latter years of the 19th century.²⁸ This glasshouse stood c.5m (16ft 5in.) above current ground level to its apex, which was set forward (south) of the north boundary wall by approximately 1m (3ft 4in.), the arrangements again being captured in historic photographic images (see Figure 20b).
- 6.1.6 The southern wall of the garden comprises two discrete sections (Figures 30/31), brick-built with stone coping as elsewhere, with a 7.75m (c.25½ ft) wide central gateway flanked by sandstone ashlar piers identical to those employed in the north-eastern and north western gateways (Plate 21). The south wall does not extend to meet the boundary wall to either east or west, terminating in matching ashlar quoins creating c.9.5m (31 ft.) wide, through access to the south garden at the eastern and western sides. The wall is heated, horizontal flues being accessible in a number of locations where bricks have become loose (Figure 30; Plate 18); the eastern section of wall includes a brick-built stack (Plates 18/19) while a number of flue access points are evidenced by paired straight joints (eg. Plate 20).

The North Dipping Pool (Figure 32; Plates 23-6)

- 6.1.7 The northern dipping pool is located centrally within the northern walled garden at the intersection of the axial pathways. It is elliptical in plan with maximum dimensions of 9.60m / 31ft 6in. (N/S) x 6.40m / 21ft (E/W). The upper part of the retaining walls of the pool are constructed of two courses of 6in. wide, shaped sandstone blocks, the upper course having rounded tops which stand slightly proud of the surrounding ground level. Below the stonework, the retaining walls extend in 2¾ in. brick to a maximum of 6 courses, giving the pool a depth of 1.20m / 4ft to a base of red-brown brick, laid east-west. Within the centre of the pool is a second, inner 4 in. brick-built retaining wall (Plate 25), again elliptical in plan, measuring 6.2m / 20ft 4in. (N/S) x 3.1m / 10ft 2in. (E/W), and standing to 4 courses of 3in. brick. Originally fed from the Sherbrook to west, the details of which remain unclear, the pool would originally have been drained via a grill set centrally at high level in the northern retaining wall (Plate 26), thus maintaining a circulation of water supply and avoiding problems of stagnation. The original function of the inner elliptical wall is unclear, though it may be related to the cultivation of water lilies or other aquatic plants.²⁹ The northern dipping pool, together with a matching feature located centrally to the south garden, is not shown on early maps and is first illustrated on a plan of 1833; it remains unclear

²⁷ SAMS Acc No. FP11.3.84.

²⁸ The form of this late 19th-century vinery is known as a '¾ span house' (J Milln, *pers. comm.*).

²⁹ Recollections of Mr George Ambrose Mason Miller (recorded in Bates 1984, 79).

whether the pools represent original features or later introductions to the garden arrangements.

6.2 The Head Gardener's House (Figures 33-45; Plates 27-105)

Overview

- 6.2.1 The Head Gardener's House is located centrally within the northern boundary wall of the north walled garden. The primary building is rectangular in plan, of two storeys, in brick and Tixall sandstone with a low-pitched, hipped roof clad in slate with two ridge stacks. Central to the northern elevation is an early 19th-century extension, approximately square in plan and again rising through two storeys.

The South Elevation (Figure 37, Plates 27-30)

- 6.2.2 The south elevation of the house (Figure 37, Plate 27) faces the walled garden. Symmetrically arranged, it is predominantly of ashlar construction in pale green-grey Tixall sandstone laid to regular courses (though see §.6.2.3 below). At ground floor level, a wide entrance embrasure houses the principal entrance doorway [d15], giving on to corridor passage [G1], flanked by half-glazed panels, the whole housed within a moulded timber surround topped by a segmental fanlight or lunette [w1]. This doorway originally provided communication between the conservatory and the main house. To the east and west are symmetrically arranged doorways ([d7] and [d16]) within stone architraves and with projecting, moulded flat hoods providing access, both currently and historically, between the house to the exterior. At first floor level are four evenly spaced openings with flat heads ([w7]-[w10] from east to west; Figure 37) housing 6/6 unhorned, double-hung sash windows with recessed frames (renewed). Window openings are furnished with narrow, projecting stone cills which extend to the full width of the elevation as a continuous string. Eaves level is enhanced by a projecting stone moulding above which rises a low parapet. The roof is shallow pitched and hipped, clad in slate with low ridge stacks to the east and west; historic photographs indicate taller chimneys in the early years of the 20th century, though the earliest known view (Figure 17a) again shows low stacks.
- 6.2.3 The elevation includes the scars of two phases of conservatory building, formerly abutting the south side of the house. The earlier, lower structure was furnished with stone built side walls c.1m tall and rose to an apex coincident with the string level at the base of the first floor windows (Figure 37; Plates 27/8). That section of walling originally within the primary conservatory building is in red brick, laid to English bond (Plates 27-9), indicating that the house and conservatory were contemporary. The later, Victorian conservatory structure had higher side walls, standing 2.4m tall and a correspondingly high ridge level, some 5m above the threshold level of doorway [d15]. The line of the pitched roof of the secondary conservatory cuts across the inner lower corners of windows [w8] and [w9] to east and west respectively (Plate 30). The raising of the conservatory roof necessitated the removal of the central section of projecting string, this feature having been recently reinstated (Figure 37). A small section of low stone wall survives to the western side of the former conservatory footprint (Plate 34), while the line of the walls is picked out in planting (Plate 33).

The North Elevation (Figure 38, Plates 35-38)

- 6.2.4 The north elevation of the house (Figure 38) faces a small yard area set within the ha-ha which surrounds the entire walled garden complex. It is predominantly of brick

construction, save for the eastern and western angles which are formed of Tixall stone quoins extending from the end elevations (Plates 35/6). Brickwork is laid to Flemish stretcher bond with three stretcher courses between Flemish courses; eaves level is again enhanced by a projecting stone moulding below a low stone parapet. The central part of the elevation is obscured by a secondary, projecting block (see §.6.2.5); to the east and west of this block are symmetrically arranged openings at ground and first floor levels all with flat heads of gauged brick (renewed in parts). To the east are two windows openings at ground and first floor levels housing 6/6 unhorned sashes (renewed) with recessed frames (Plate 35); the western window at ground floor has been adapted from a former doorway, evidenced by paired straight joints below cill level, infilled with English bond brickwork (Plate 38). A similar arrangement exists to the west of the projecting block, though here the western doorway opening survives (Plate 36). As in the south elevation, the upper window openings are furnished with narrow, projecting stone cills forming a continuous string which extends onto the east and west elevations of the house, and is carried onto the secondary extension as two courses of projecting brick. Observations internally (see §.6.2.23) indicate that the original elevation was of five window bays, with a doorway occupying the central bay at ground floor level.

- 6.2.5 Projecting from the centre of the north elevation is a two-storey extension, introduced early in the development of the garden complex and certainly in place by 1833 when it was first indicated on historic plans (see Figure 10). The extension is approximately square in plan, brick-built laid to Flemish bond rising over two storeys with eaves decoration comprising a dentillated course above a single $\frac{1}{4}$ brick oversail; the eaves level of the extension is set slightly above that of the main range resulting in the stone cornice of the latter being truncated (Plates 37 and 105). The structure has a low pitched roof, hipped to the south and gabled to the north, the gable end incorporating a central brick stack which projects slightly from the wall face. The stone string of the main block is continued around extension block as two courses of projecting brickwork. The northern and western elevations (Plate 36) are free of openings while the eastern elevation displays superimposed 6/6 unhorned, double-hung sashes with stone cills and chamfered stone lintels. A clear area of blocking between the ground and first floor windows (Plate 39) indicates historic alterations to this pattern of fenestration and implies significant changes have been made to the extension building, further evidenced internally (see §.6.2.23 below). An indistinct area of English bond brickwork, extending to four courses below the cill of the ground floor window, further evidences a phase of historical change.

The Eastern and Western Elevations (Figures 39/40)

- 6.2.6 The short elevations to east (Plates 31 and 35) and west (Plates 32 and 36) are essentially similar, constructed principally of Tixall sandstone ashlar; localised areas to the ground floor of both elevations, south of the bounding wall, are constructed in red-brick (Plates 31/2), having originally formed end walls of the glasshouses formerly abutting the main house. The profiles of the primary glasshouses are delineated by the extent of brickwork within each elevation and the roof lines clearly expressed by sloping double courses of stretcher brickwork. The west elevation (Figure 39; Plate 32) evidences two phases of glasshouse; an early, lower lean-to glasshouse matched that to the east while a higher ridge (max. 5.2m above present floor level) is evident as a shadow on the stone ashlar masonry of the upper wall. Opposing ground floor doorways ([d20] and [d17]) within the lower, southern sections of the elevations gave primary access from the axial corridor passage [G1] within the house to the glasshouses, while to the north opposing doorways ([d19] and [d11]) originally gave

access to the bothy ranges to the east and west; that to the west having subsequently been blocked (Plate 56).

The Interior: Basement (Figure 33; Plates 40-44)

- 6.2.7 At basement level, a low tunnel [B1] runs the full length of the Gardener's House, immediately below axial corridor [G1] at ground floor level on the southern side of the building. The tunnel is currently accessed solely via a floor void within [G1] adjacent to alcove [f20] (Figure 34; Plate 48), which formerly housed a grille. The void gives onto a partitioned chamber at the east end of the tunnel (reflecting [B7] to the west), brick-built with segmental-arched vault, aligned north-south. This chamber displays blocked, low doorways within each of the north [d4], east and south walls [d1]; the southern door is blocked in stone, those to the east and north in brick. The northern door formerly gave access to a sub-floor space below Room [G2]; this space was not accessible, though a break in the fabric of the wall allowed for limited visual inspection which revealed three north-south aligned, chequerwork brick support walls for the floor structure of Room [G2] above, while the brickwork support for the GF stack would appear to have been built up against the blocking of the door indicating that it is secondary. The southern opening off the eastern chamber gave onto a longitudinal vaulted chamber [B2] running parallel to the tunnel to the south. The remnants of a segmental arch of headers can be seen to either side of the eastern doorway, mirroring the blocked doorway recorded in the west wall of [B7] (Plate 74); reference to previous survey drawings³⁰ indicates that this doorway formerly communicated with the low-level Boiler Room [B5] within the eastern Bothy Range (see Figure 45). A fourth doorway (inserted) within the west wall of the eastern chamber opens, via a single step down, onto the eastern end of the main tunnel.
- 6.2.8 The main tunnel [B1] is again brick-built, with a segmental-arched vault aligned east-west, this being stepped up slightly towards the west (Plates 40/41), and is floored for the most part in brick. The eastern wall is brick built with a secondary doorway opening onto the eastern chamber, previously described; at low level, a brick-lined heating flue is aligned north-south, adjacent to the wall, capped in stone blocks and slate (Plate 42). Midway along the tunnel, opposing doorways [d2] and [d5] in the south and north walls, both blocked in brick, formerly gave onto a longitudinal chamber ([B2]; not accessed) and a sub-floor space below [G3]/[G4] respectively; the floor of [B1] between these opposing doors is of stone slab construction. Towards the western end of the tunnel, an angled wall projecting from the south wall incorporates a small fireplace [f1] with segmental arch. The western end of the tunnel is closed by a solid brick wall (which forms the east wall of [B7]) and includes a brick-lined flue with stone capping at ground level (Plate 44) mirroring that to the east. Each of the long walls of the tunnel retain regularly two levels of regularly spaced sockets at 1.6m (5ft 3in.) centres, possibly representing supports for former racks of shelving.
- 6.2.9 A series of four secondary, brick-built piers ([f2]) are aligned along the centre of the tunnel, carrying two super-imposed, high level cast-iron heating pipes. These pipes run the full length of the tunnel immediately below the crown of the vault, extending into (and beyond) the chamber to the east and room [B7] to the west (Plate 74), and formerly served the adjacent vinery structures. Subsidiary pipes branch off the central alignment in two places (eg. Plate 43), breaking through the brick vault and presumably originally serving the conservatory structure to the south. The introduction

³⁰ See J Milln Survey Drg. SH/S9/2 of August 2000.

of the steam heating pipes, presumably during the Victorian reorganisations of the vinery glasshouses, superseded the former system of inter-mural heating ducts.

The Interior: Ground Floor (Figure 34, Plates 45-78)

- 6.2.10 The interior of the Head Gardener's House is accessed via doorways within each of the four principal elevations. The principal entries are located within the walled garden, the single, northern door being subsidiary. In the south wall are three doorways, all opening onto lateral corridor [G1] which runs the full length of the building on its southern side; a central opening flanked by three light windows set within a wide embrasure [f19] beneath a segmental fanlight or lunette [w1] (Plate 49) formerly serving the conservatory to the south and, to east and west, single pedestrian doors ([d7] and [d16] respectively) serving the exterior, again set within wider embrasures with segmental arches over (eg. Figure 44, Plate 48). Each of these embrasures is reflected in the north wall of corridor [G1], the eastern and western alcoves ([f20] and [f18]) being blind (eg. Plate 43) while the central recess [f19] includes a doorway [d13] serving room [G3] to the north (Plate 45). Opposing, part-glazed doors (renewed) with moulded timber architraves set centrally within the eastern and western walls ([d20] and [d17] respectively; Plate 47) currently give onto the exterior, though they formerly provided through access to the adjacent vineries. The corridor is plain, with rendered brick walls and flat ceiling, 6 in. slate skirting and a narrow moulded cornice strip; the floor is flagged in large slabs in three rows, individual stones measuring up to 3ft x 2ft. A void at the eastern end of the corridor, formerly housing a grille,³¹ gives access to the basement 'mushroom tunnel' [B1] below.
- 6.2.11 Doorway [d13] gives onto a quarter landing of a stair [f9] (renewed) in the south-west corner of Stair Hall [G3], the floor level of which is set 1.00m / 3ft 3in. below the floor level of corridor [G1]. A short, straight flight against the west wall descends the the floor level of Room [G3]; the room is rectangular in plan, occupying approximately 1½ bays of the range, with stair [f9] rising to first floor level against the western, southern and eastern walls (Plates 51/2); the stair has been recently renewed though scars on the wall clearly indicate that it reflects a previous arrangement. Walls are of exposed brick throughout with localised survival of plaster render, the north wall includes a single window opening to the east housing a 6/6 unhorned sash [w5] (straight joints below cill level evidence a former doorway). To the west of this window a doorway ([d12]) gives onto Room [G5] (Plate 53); this doorway represents a secondary adaptation, most likely contemporary with the construction of [G5]; an original doorway (blocked in brick) occupies the western section of the north wall, the extent of blocking being coincident with the west wall (Plate 54). The original form of this door, which would have been central to the elevation, is more clearly seen within room [G5]; the early 19th-century reordering of openings is also evidenced at first floor level (see §.6.2.23). The western wall of [G3] is of note in that it represents one of only two single-brick walls recorded at this level and displays regular timber lacing (Plate 52). Further, the brickwork clearly abuts the northern and southern walls and a fragment of distemper washed plaster was recovered from the related straight joint; taken together this evidence would seem to imply that the west wall of [G3] represents a secondary insertion and that rooms [G3]/[G4] formerly comprised a single space. Opposing doorways in the northern part of the eastern and western walls ([d8] and [d9] respectively) give access to Room [G2] and [G4]. The floor of [G3] is

³¹ See J. Milln survey drawing No. SH/S6/2 of November 1997.

of polychrome tile with decorative verges (Plate 55), evidently of later 19th-century date.

- 6.2.12 Opening off the north side of [G3] is Room [G5] (Plates 64-9) which forms the ground floor level of the approximately square, two-storey extension, introduced at some point before 1833. The current floor level of [G5] is set slightly above the remainder of the range and is reached by a single low step (Plate 53). The walls are of exposed brickwork, of mixed bond to north, east and west though the south wall, which represents the former exterior elevation of the original Gardener's House, is characterised by higher quality Flemish stretcher bond brickwork with fine mortar joints and struck pointing. Remains of a former moulded plaster cornice survive in parts, set significantly below the level of the current (renewed) first floor (Plate 64). The room is lit by a single 6/6 unhorned sash [w4] within the east wall; the rough jambs of this opening imply that it most probably represents an insertion or at least an adaptation, supported by the evidence recorded externally (see §.6.2.5). A relatively plain, blocked doorway with segmental brick head is visible within the centre of the south wall (Plate 67) and would originally have formed a central doorway within the north elevation of the house. The north wall includes a projecting brick stack incorporating an iron fireplace surround with splayed cheeks, formerly taking inset tiles, the whole set within a stone surround with moulded mantle supported on fluted brackets (Plate 69) and with a hearth set with quartered polychrome tiles with floral motifs. Paired straight joints at high level within the projecting stack (Plate 65) indicate a former opening into the flue and it is of interest that this opening and its associated blocking extends across, and thus predates, the level of the former plaster cornice previously noted. Joist sockets within the west wall at the level of the plaster cornice evidence the form of the earlier ceiling structure (Plate 66) while a second series of possible former sockets (blocked in brick) was also noted, the level of which corresponds exactly with the base of the opening within the projecting stack of the north wall. All of the evidence recorded within Room [G5] would appear to suggest a significant programme of reordering within the northern extension, though the precise nature of this change remains unclear.³²
- 6.2.13 West of [G3] and accessed via a doorway in the north end of the inserted west wall of that room is located Room [G4] (Plates 61-3). Approximately square in plan with stone-flagged floor, the walls are of brick construction retaining plaster render in places, particularly on the southern and western walls. The east wall shows clear evidence of having been inserted and has been previously described as it appears within Room [G3]. The north wall includes a single window opening [w3] housing a 6/6 unhorned sash (renewed) while the south wall incorporates a central fireplace [f8] with the remains of a small cast-iron range (Plate 63); above the fireplace a diagonal band of brick on edge rises to the west and denotes the line of the associated flue, the smoke blackened lining of which has been partly exposed by the removal of a number of bricks. This feature ties with the historical association of the part of the range with the kitchen. A steeply rising scar is evident within the fabric of the west wall (Plate 62), reasonably indicating the location of a former stair though the steep inclination of the scar is of note should this be the case.³³ The western doorway serving lobby [G6]

³² Two former occupants of the Head Gardener's House (Mr George Bentley, 1909-1918; Mr George Ambrose Mason Miller, 1910-1922) refer to the northern extension as the kitchen and relate that it was open through two floors to a skylight (Bates, 1984). By the early 1940s, the kitchen would appear to have moved to Room [G4].

³³ Mr George Bentley, resident at Shugborough in 1909-1918, refers to the room north of the corridor as having a 'ladder stairway' eventually replaced by an 'ordinary staircase' (Bates, 1984, 57). The inclination of the scar would be consistent with a ladder access.

has had a long RSJ lintel inserted during the recent phase of consolidation works, introduced presumably to counter the spreading of the vault of [G6]/[G7].

- 6.2.14 The northern section of eastern bay at ground floor level is occupied by Room [G2]³⁴ (Plates 56-9); of approximately square plan, walls are predominantly in brick, retaining plaster render to a significant degree (Plates 56/7) and ceiled by a brick-built barrel vault of semi-circular profile aligned north-south (Plates 58/9). The room is lit by a single opening in the north wall ([w6]), housing a 6/6 unhorned sash (renewed). A stack projects centrally from the south wall (Plate 59) with plain stone surround and mantle supported on fluted brackets (Plate 60); evidence recorded at basement level would appear to indicate that this fireplace and stack are secondary (see §.6.2.7 above). A recess in the northern part of the east wall occupies the location of a former doorway ([d19]) which would originally have given access to Room [B5] within the eastern Bothy Range (see Plate 113); the original jamb was slightly to the south of the recess and three surviving bricks of a segmental-headed arch can be discerned (Plate 56). The junction of the brick vault at the north wall is somewhat unsatisfactory, simply butting up against the outer wall in a straight joint (and clipping the upper corner of the window embrasure; Plate 58), however, no clear evidence exists for the insertion of the vault and it is assumed to be primary, presumably required for reasons of fireproofing related to the use of Room [F2] above as a smoke/soot chamber (see §.6.2.18).
- 6.2.15 To the west of [G4], lobby [G6] (Plates 70/1) and larder [G7] (Plates 72/3) together reflect to a degree the arrangements of Room [G2] to the east, previously described, sharing a brick-built barrel vault aligned north south. The space here is, however, sub-divided by a single-skin brick wall, aligned east-west and defining the southern side of [G6]. Room [G6] forms a simple lobby, accessed from the exterior by doorway [d18], set centrally within the north wall,³⁵ and providing through access from Kitchen [G4] to the east to washroom [G8] to the west. A single door within the south wall gives access, descending via two low steps, to larder [G7], the quarry tile floor of which is set some 0.46m (1ft 6in.) below that of [G6] and the remainder of the range. Larder [G7] is unlit save for a borrow-light set high in the north wall and retains evidence of shelving, supported by both iron wall brackets (Plate 72/3) and low brick piers to the east (Plate 73). A small doorway in the south wall ([d6], Figure 33) opens onto a further flight of stone steps which descend to Room [B7] at the western end of Tunnel [B1] described above. Arrangements within this small chamber are similar to those of the chamber to the east of [B1], with segmental brick-vaulted roof aligned north-south and primary openings within each of the north, south and west walls; of these, only the northern door ([d6]) remains open, that to the south having been blocked in stone and that to the west in brick (Plate 74). The paired cast-iron heating pipes recorded within [B1], were noted to extend across the width of [B7] passing through the western blocking, formerly serving to heat the western vinery.
- 6.2.16 Washroom [G8] is located beyond the Head Gardener's House, forming the easternmost room of the Western Bothy Range; it is, however, accessed solely from the interior of the Head Gardener's House and is thus included here. The room is accessed via a door ([d11]) from lobby [G6] to the east; approximately square in plan with quarry tile floor and exposed brick walls (significantly rebuilt to the west; Plate 78), it is lit by a single window opening in the north wall [w2] housing a standard 6/6 unhorned sash (renewed). The room retains the brick-built setting for a copper centrally within the south wall (f9; Plate 76), an arched alcove within the east wall

³⁴ 'Maid's Room' on J. Milln's survey drawing of 1997 (Drg. SH/S6/2).

³⁵ It is unclear whether [d18] represents an original feature or has been adapted from a primary window.

(f16; Plate 75) and two brick piers beneath the northern window (Plate 77), formerly supporting a sink (f10; a short length of lead piping is chased into the brickwork of the west wall above the level of the former sink).

The Interior: First Floor (Figure 35; Plates 79 - 92)

- 6.2.17 The first floor of the Head Gardener's House is accessed via a stair [f9] (renewed; Plates 51/79) rising around three sides of Stair Hall [G3] and returning along the north wall in front of window [w14] onto a narrow landing (Plate 80), aligned across the width of the building to the east of Room [F4], off which doorways give onto Rooms [F6], [F4] and [F3] to north, west and south respectively.
- 6.2.18 Opening off the east flight of stair [f9], and occupying the northern part of the easternmost bay is a vaulted chamber [F2] (Plate 97-101), together with associated spaces [F8] and [F9], the 'floor' level of these spaces being is some 0.5m below the first floor proper. The floor of [F2] comprises rammed earth and plaster laid over the crown of the brick vault of room [G2] below, while the room is itself furnished with a corresponding brick barrel vault, this extending to the area of [F2] only, not reaching the exterior wall to the north (Plate 98). The northern limit of the vault is reflected at floor level by a low brick wall constructed atop the vault of [G2] (Plate 97) and formerly rising to seal off [F2], evidenced by a wall scar visible to the east. An iron tie rod has been introduced at the level of the vault springing (Plate 97). The south wall of [F2] is dominated by the principal eastern stack with a number of associated flues entering from the head of the heated walls of the eastern vinery (Plate 99/100); further flue access points are located to the west of the stack (Plate 101). The stack shows clear signs of being partly rebuilt to the east where the brickwork is not smoke blackened.
- 6.2.19 The principal room at first floor level is room [F4] which occupies two full bays in the centre of the range. The southern and northern walls (Plates 83 and 84 respectively) are of brick (9¼ x 4½ x 3in.), representing exterior walls, laid to a mixed bond approximating to English/English stretcher bond within a pale, creamy lime mortar. At the wall head, a double plate detail is employed to accommodate the interior face of the exterior moulded stone cornice, and will be described further below (§.6.2.25). The southern wall represents a brick inner facing to the exterior ashlarwork and a number of stone blocks are visible where they extend through the full depth of the wall. Each wall includes a single window opening, housing a 6/6 unhorned sash (renewed). To the eastern side of the north wall, a series of blockings (Plate 86) denote the location of a further original window ([w13]), which would have been set centrally within the original elevation, and which was partly blocked and altered to form a doorway at the time of the construction of the northern extension [F6]. This door was itself subsequently blocked, in English stretcher bond brickwork, presumably when the door to [F6] was moved eastwards to its current location at the head of stair [f9]. The west wall is partly of brick, representing the principal western stack (fireplace removed), the brickwork of which is continued northwards; the southern section of the wall is of studwork (Plate 81) with a single diagonal brace and a doorway opening giving onto Room [F5] which occupies the south-west corner of the house. The eastern wall of [F4] is again of simple studwork construction, enclosing the landing at the head of stair [f9], with studs set at c.1ft centres with two long diagonal braces and showing evidence of former lath and plaster render (Plate 85). The floor of [F4] is of 7½ in. softwood boards, aligned east-west while the ceiling would originally have been of lath and plaster applied to north-south aligned batons nailed to the soffit of the surviving ceiling beams (see below). The room retains no

internal finishes, save for three areas of plaster render around the fireplace in the west wall and a further area at the east end of the south wall (Plates 82 and 84). Window lintels have been renewed in concrete while a substantial and unsympathetic steel joist has been introduced over the fireplace (Plate 82).

- 6.2.20 Room **[F5]** occupies the southern part of Bay 1, to the south of the principal western stack, and is accessed from **[F4]** via a door within its studwork eastern wall (**[d25]**). North, west and south walls are of brick construction. The room is lit by a single window opening **[w10]** in the south wall, housing a 6/6 unhorned sash (renewed) beneath a replacement concrete lintel (Plate 87). Heating was provided by fireplace in the southern side of the main stack (Plate 88) which retains a fine, early 19th-century hob-grate of semi-Forest pattern (with square fire bar aperture) and decoration comprising neo-classical motifs (Plate 89). The room again retains no internal finishes, save for plaster render of indeterminate date surviving in places on the north wall; flooring is continuous with that of **[F4]** to the east, formed of 7¼ in. softwood boards, aligned east-west.
- 6.2.21 The northern part of Bay 1 is occupied by a brick vaulted chamber **[F1]** and associated void **[F10]**, reflecting the arrangements of Room **[F2]** to the east, though it was not possible to gain access to these spaces.
- 6.2.22 Room **[F3/7]** occupies the southern part of Bays 4 and 5 at the south-eastern corner of the house, to the south of the landing and the eastern stack. Though of larger proportions, the room reflects to an extent the layout of Room **[F5]**. It is lit by two 6/6 unhorned sash windows (renewed) within the south wall (Plate 91) and was heated by a fireplace in the southern side of the eastern stack (Plate 90), which again retains a fine, early 19th-century Forest pattern hob-grate with neo-classical detailing (Plate 92). The room was at some point divided into two spaces (forming a bedroom **[F3]** and bathroom **[F7]**)³⁶ by an angled, ephemeral stud partition wall immediately east of the projecting stack, though was presumably originally a single space as survives today. As elsewhere at this level, the room retains no internal finishes, save for patches of plaster render of unknown date, mainly on the northern wall around the fireplace. Flooring is again of 7¼ in. softwood boards, aligned east-west.
- 6.2.23 Opening off the north side of the landing at the head of stair **[f9]**, Room **[F6]** represents the first floor of the approximately square, two-storey north extension, introduced at some point before 1833. The walls of **[F6]** are in brick throughout laid to mixed bond, save the south wall which represents the former exterior elevation of the original Gardener's House reflected in the enhanced quality of the Flemish stretcher bond brickwork with fine mortar joints and struck pointing surviving to the west.³⁷ At high level, this wall incorporates the former exterior stone cornice (Plate 103), which has been truncated (Plate 105) while at the centre of the elevation a former window with gauged brick head is discernible, having been later converted to a doorway a subsequently blocked (Plate 104) when the door was relocated to the east; this arrangement has been previously described as recorded within Room **[F4]**. The eastern and western walls meet the south wall in clear but joints, the western wall is free of features while the eastern wall includes a central window opening **[w16]** housing a 6/6 unhorned sash, slightly taller and narrower than those of the main range. The 'ragged' jambs of **[w16]** show clear evidence of being cut into existing brickwork, while a clear area of patching beneath the opening (also visible externally;

³⁶ See J. Milln survey drawing No. SH/S6/2 of November 1997.

³⁷ Brickwork is pecked to take later plaster render.

Plate 39) implies that significant alterations have taken place in the past. The north wall includes a small fireplace ([f12]), set off-centre to the west of a projecting brick stack (Plate 102).

- 6.2.24 The roof of [F6] has been fully renewed; supported on a single tier of purlins, it is hipped to the south and gabled to the north.

The Roof (Figure 36; Plates 93-6)

- 6.2.25 The roof of the Head Gardener's House is solidly constructed, of five bays (here numbered 1 to 5 from west to east) demarcated by four low-pitched, King-post trusses with joggled King-posts and raking struts (Plates 93 and 95). Trusses display a fairly consistent system of original carpenter's marks comprising short chiselled Roman numerals, I – IIII from west to east. The roof structure is carried on a single tier of trenched through-purlins, supported by timber cleats applied to the exterior face of the principals, in three parts jointed with simple splayed scarfs (double pegged) and by a ridge purlin (renewed). All common rafters (six per bay) have been replaced. At the wall head, a double plate arrangement is employed, with ties resting on a lower plate atop the brickwork wall and common rafters being carried by a secondary plate set above the level of the stone blocks forming the exterior cornice and supported on short struts much in the way of ashlar pieces (Plate 94). In Bays 1 and 5, the base of the hip rafters are carried on a dragon tie and spur arrangement while, in the southern angles, intermediary, mid-slope support is provided by small, subsidiary King-post trusses with ties aligned east-west extending between the tie of the main trusses and the lower plate of the exterior walls (Plate 96). The first floor ceiling is formed of longitudinal joists aligned east-west, four per bay, extending between adjacent ties and jointed by housed, central tenons with diminished haunches, single pegged. Nail holes in the soffit of the main joists indicate the location of former batons, aligned north-south at c.1 ft centres.

Discussion

- 6.2.26 The Head Gardener's House occupies a central place within the walled garden, both physically and functionally. Its physical location in the centre of the north wall, set between two contemporary glasshouses and bothy ranges (which would have housed store rooms, boiler rooms and junior-gardeners accommodation) and overlooking the main axis of the two principal gardens, reflects its status as the functional hub of the country house walled garden. Outwardly genteel, with the appearance of a comfortable residence, analysis of the fabric illustrates that the Gardener's House combined the roles of residence and office together with more operational functions, such as the processing and dispersal of smoke from the heated glasshouse walls via the house chimneys.
- 6.2.27 Originally constructed on a simple rectangular plan with five window bays to the north and four to the south, the house was extended fairly early on (before 1833) by the addition of a square projection in the centre of the north elevation. The construction of this extension involved the blocking of an original doorway central to the north elevation and the conversion of the first floor central window to a doorway. The nature and original form of the extension remains unclear though it is apparent that significant change has taken place, with floor levels having been altered on at least two occasions and the fenestration of the east elevation having been introduced or changed from a former layout; it is possible that the extension was built purely as a functional annex to the house and may have originally been without exterior windows.

It is also clear that the main range of the house has undergone significant modification. At basement level, for example, it would appear reasonable to surmise that the arrangements of the eastern chamber to tunnel [B1] originally reflected those [B7] to the west, resulting in a fairly symmetrical layout. Likewise, at ground floor level, the apparent insertion of the single-skin dividing wall between rooms [G3] and [G4] suggests a radically different original appearance with a relatively small, central north door opening into a symmetrically arranged ground floor room of substantial proportions. Recollections of former residents, recorded by Bates in 1984, suggest significant changes have been undertaken within the house during the course of the 20th century.

- 6.2.28 The development of the glasshouse heating systems, with well preserved remains of both the original Georgian period smoke flues and the later, Victorian cast-iron steam heating pipes represents a feature of particular interest. The survival of purely domestic features within the house, such as the fine hob-grates (assumed primary) within the side rooms at first floor level, is of intrinsic interest, though it is the close juxtaposition of such domestic details and the more functional, 'industrial' elements within a single building which makes it of special importance and significance.
- 6.2.29 In addition to the development of the structure itself, the fabric of the Gardener's House retains important evidence for the development of the adjoining structures, for example the successive roof profiles of the abutting vineries and conservatory. In conjunction with the results of archaeological trial trenching (see Section §.7), a valuable body of evidence survives to inform any proposed reconstruction of the complex.

6.3 The Eastern Bothy Range (Figure 45/6; Plates 106-115)

The Exterior

- 6.3.1 Located to the east of the Head Gardener's House, the eastern bothy range (Plates 106/7) extends to a maximum length of 89ft 4in. (27.25m), measuring 11ft (3.35m) wide with mono-pitched roof backing onto the north side of the north garden boundary wall. It is brick-built, of pale orange-red brick laid to Flemish stretcher bond with three courses of stretchers between Flemish courses. The range has been subject to extensive refurbishment in the past 10 years including roof repair and re-cladding in slate. In its current state, the south elevation includes an irregular series of two door ([d26/27]) and six window openings ([w17-23]). Two former window openings are implied by straight joints within the brickwork between openings [w20]/[w22] and [d27]/[w23]. Reference to a historic photograph of 1931/2, however, appears to indicate that the easternmost three window openings ([w17-19] at least may have been inserted during the course of the 20th century. Doorway [d26] displays a moulded stone lintel with keystone and stopped chamfer detailing similar to the eastern windows of the Gardener's House extension; otherwise openings are spanned by simple timber lintels or the heads are formed by the main wall plate (renewed).

The Interior

- 6.3.2 Internally, the range is of seven regular bays, demarcated by two simple half-trusses with raking struts, and is subdivided to form four separate rooms or areas; three of these appear to represent original divisions, the fourth (Room [G10]) represents a secondary modification. The eastern room [G9] (Plates 108/9) occupies three bays. The room has an uneven floor of small, square quarry tiles; walls are of exposed brick

though render survives in places on the lower parts of the south wall indicating that the room was formerly ceiled over at the level of the ties (Plate 108). The room is lit by three 3/6 sash windows in the north wall, one per bay ([w17, 18 and 19] from east to west). A number of recollections from former residents (quoted in Bates, 1984) identify room [G9] as the 'Head Gardener's Office' at least as far back as the first decades of the 20th century - the photograph showing an apparently unfenestrated north elevation in 1931 is therefore somewhat ambiguous.

- 6.3.3 Opening off the west end of [G9], via a doorway [d28] within an original transverse wall (Plate 109), is a small storeroom ([G10]) formed by the insertion of a wall to the west within the eastern end of room [G11]. The partition wall butts up against the north wall in a clear straight joint, while externally it would appear that a former window ([w21]) was blocked at the time of the internal alterations. This room is currently lit by a single 3/6 unhorned sash window in the north wall and formerly served as a grape store (*ibid.*).
- 6.3.4 The western end of the east bothy range comprises two conjoined spaces, [G11] (Plate 110/111) and [B5] (Plate 113) which together occupy the 3½ western structural bays of the range, demarcated by three simple half-trusses with raking struts; again, all common rafters have been renewed. The rooms are accessed via a single door [d27] which opens onto [G11] from the exterior, and are lit by two 3/6 unhorned sash windows ([w22/3]) within the north elevation. As noted above, the eastern end of [G11] has been closed off by the insertion of a brick wall to form store room [G10]. Immediately west of the inserted wall, a doorway [d29] within the south wall, reached via a short flight of steps (Plate 112), opens into the area of the former eastern vinery (Plate 12), the brick floor level of [G11] being 0.75m below the southern external ground level. Recollections of former residents identify room [G11] as a potting shed in the early years of the 20th century and the direct access to the glasshouse ranges would support this. To the west, a straight flight stair descends against the north wall (Plate 113) to a former low-level boiler house [B5], the floor level here being 4ft 3in. (1.30m) below the adjacent range; the brickwork of the lower wall is in narrow (2¼ in.) brick. A brick-vaulted chamber (3.6m deep x 2.2m wide) opens off the north side of the boiler house (Plate 115), formerly functioning as a coal cellar fed by a chute at ground level externally, set within the area of brick paving immediately north-east of the Gardener's House. A segmental headed doorway (blocked) in the west end of the south wall (Plate 114) presumably originally led to the eastern chamber at the end of tunnel [B1] beneath the Gardener's House; a further doorway [d19] within the north end of the west wall (blocked) formerly opened onto the Room [G2] within the Gardener's House. Mr George Bentley described the boiler house at the turn of the century as housing two boilers, an early 'Trentham' and slightly later 'Robin Hood' model, both supplied by Foster and Pearson of Nottingham. The flues from the boilers discharged via the south wall to heat the vineries and conservatory (each would have been capable of heating upwards of 1,850 ft of 4in. pipe), a large diameter pipe survives projecting from the north wall (Plate 114). A wall void beneath the projecting pipe probably relates to the early heating system of the Georgian glasshouses, otherwise no definitive evidence for the pre-Victorian heating system was recorded within [B5].

6.4 The Western Bothy Range (Figure 47/8; Plates 116-128)

The Exterior

- 6.4.1 Located to the west of the Gardener's House, the western bothy range (Plates 116/7) extends to a maximum length of 88ft (26.8m), measuring 11ft 6in. (3.5m) wide with mono-pitch roof backing onto the north side of the north garden boundary wall. It is brick-built, of pale orange-red brick laid to Flemish stretcher bond with three courses of stretchers between Flemish courses. Again, the range has been subject to extensive refurbishment in the past 10 years including complete roof repair and re-cladding in slate. The north elevation displays three doorways ([d37/30 and 36]) and seven 3/6, unhorned sash windows ([w2/24-29]) from east to west ([w25] having been adapted from a former door). A further doorway ([d31], blocked in brick, is located to the western end of the range between door [d36] and window [w29]. The exterior brickwork of the westernmost three bays is distinct from the remainder of the elevation (Plate 117), of 2¼in. pale orange-red brick laid to Flemish stretcher bond and delimited by clear straight joints to east and west (Figure 47), denoting either a phase of rebuild or an infilling of a former open (?) cart shed. A brick stack rises at the ridge at the far west end, serving a fireplace within room [G17].

The Interior

- 6.4.2 Internally, the range is of seven bays demarcated by two simple half-trusses with raking struts, and is divided to form six separate rooms; the original arrangement would appear to have comprised four spaces, these having been subsequently subdivided by the introduction of single-skin partition walls. To the far east end, room [G8], although forming a part of the bothy range, opens off passage [G6] within the Gardener's House and has been described above. To the west of [G8], a single large room has been subdivided to form two separate spaces, [G12] and [G13]. The eastern of these, [G12] (Plates 118/9), is accessed via doorway [d37] in the north wall; the room is approximately square in plan with walls of exposed brick and secondary, concrete slab floor. It is lit by a single window opening in the north wall ([w24]) and retains a cast-iron, arch-plate fireplace [f26] set into the south wall at the south-east corner (Plate 118) with angled flue over, rising to the east and faced with bricks on edge; straight joints vertically above the fireplace (Plate 119) presumably relate to an earlier flue arrangement. The wall defining the western side of room [G12] is secondary, of single-skin construction and abutting the north and south walls in clear straight joints; a modern doorway hard against the north wall gives access, via a single step down, to room [G13] to the west (Plates 120/1). Again of square plan, the floor here combines brick setts and stone pavements (Plate 120), with a distinct linear flagged area to the south of window [w25]; straight joints below cill level indicate that [w25] previously formed a doorway (Plate 121).
- 6.4.3 Room [G14] (Plates 122-124) occupies the central part of the range; rectangular in plan and extending to 1½ structural bays, it is bounded to both east and west by primary brick-built walls. It is entered via doorway [d30] in the north wall and is furnished with a second doorway [d36] within the south wall, reached via a short flight of brick stairs [f27] (Plate 122) with stone treads and opening onto the area of the former western vinery (Plate 11). Walls are of exposed brick throughout and the floor is formed of brick setts aligned east-west (Plates 122/3). A small recess [f30] is located at the west end of the south wall, with segmental head of bull-nose brick.

- 6.4.4 The western three bays of the range is formed of two rooms, [G15] and [G17], with associated entrance lobby [G18] and larder [G16]. Observations externally suggest that the whole of the north wall has been rebuilt or that it represents an infilling of a former open fronted shed (see above). In its current form, the rooms are accessed via a single door [d36] in the north elevation, which opens onto a small lobby [G18] while a further blocked door [d31], immediately west of [d36], would formerly have given exclusive access to room [G17]. Room [G15] (Plates 125/6), together with lobby [G18] and larder [G16], occupies two bays; the latter two rooms would appear to be secondary adaptations, formed by the introduction of a single-skin brick wall within the west end of the room, which clearly abuts the north and south exterior walls. [G15] has exposed brick walls and a modern concrete slab floor; it is lit by two 3/6 sash windows in the north wall [w27/8], one per bay; a further window-vent [w31] is set high up in the south wall. The room retains little evidence of former usage, though a cast-iron steam heating pipe [f29] survives in the south-east corner. A connecting door between [G15] and [G14] is shown on previous survey drawings³⁸ and it is assumed this feature survives, though contemporary use of both rooms precluded investigation. To the extreme west end of the range is a small, square room [G17]; currently accessed from lobby [G18] to the east, this room was formerly entered via its own door [d31] in the north elevation, now blocked in brick (Plate 128). The room is lit by a single 3/6 unhorned sash window [w29] in the north elevation and, as in [G15], is furnished with a high level window-vent [w30] in the south wall. The room is heated by a fireplace [f31] within a projecting stack set centrally within the west wall (Plate 127). A small doorway to the south of the stack [d37] (blocked) formerly gave access to a lean-to structure against the exterior wall, housing a WC.
- 6.4.5 Recollections of former residents (recounted in Bates, 1984) indicate that the western bothy range was used predominantly as domestic accommodation for assistant garden staff living on site. The western end of the range in particular is described in c.1910 as comprising two bedrooms, each with two single beds (presumably a sub-division of [G15]) with associated kitchen/living room [G17]. Later descriptions (c.1940s) allot the whole of [G15]–[G18] to the foreman and his wife, reflecting a significant improvement in accommodation standards for estate staff. [G14] and [G12/13] are variously described as store rooms, potting sheds and forcing houses, though the fireplace surround surviving within [G12] is clearly domestic in nature.
- 6.5 The South Garden** (Figures 49-51; Plates 129-144)
- 6.5.1 The southern walled garden (Plates 129/30) measures 92m (c.101 yds) wide to the north, widening to 110m (120 yds) at the southern boundary, extending to an area of approximately 0.63 ha. The garden has been used in the recent past, and continues to be used, as a works compound for the Shugborough Estate; such usage has resulted in compaction of the ground surface throughout while a number of utilitarian storage sheds and lean-to structures occupy the central and perimeter areas of the garden (Plate 131 and 138); a large spoil heap occupies the centre of the garden (Plates 129-30), overlying the location of the southern dipping pool. As such, the southern garden retains little of immediate historical interest, beyond its bounding walls.
- 6.5.2 Large areas of bounding wall were obscured by structures and/or heavy vegetation cover at the time of survey and were not inspected in detail. The north wall of the garden is the most accessible (Figure 51; Plates 132/3), representing the southern

³⁸ J. Milln Drg SH/S9/1 of August 2000.

elevation of the north garden, south wall (previously described). Additional details of the brick stack are visible (Plate 134), including an iron 'bin' with slate capping set into the brickwork of the wall (Plate 135), presumably related to the 'stoke hole' referred to by Mr George Bentley (Bates 1984, 63), while a number of loose bricks again revealed the existence of wall heating voids or ducts. A late 19th-century glasshouse³⁹ (the 'Apricot House') formerly backed onto the eastern section of the wall (see Figure 18), c.32m (35 yds) long x 3m (10ft) wide; a single lever mechanism for a longitudinal ridge vent, by Messenger and Co. of Loughborough, survives to the central part of the wall, while the fittings for further levers survive to the east and west (Figure 51).⁴⁰

- 6.5.3 Where visible, the eastern (Plate 136), southern (Plate 139/40) and western (Plate 143) walls were noted to comprise 14in. (1½ brick) brick-built walls (brick dims: 9¼ x 4½ x 3in.) standing c.3.5m (11½ ft) tall, in orange-red brick laid principally to Flemish stretcher bond with three courses of stretchers between Flemish courses, topped throughout by sandstone coping (Figures 49/50). At the south-eastern and south-western corners, the bounding walls curve gently to meet the line of the southern wall. The southern wall includes a c.2.80m (9ft) wide gateway flanked by dressed ashlar piers with chamfered quoins and low pyramidal capstones, located on the central north-south axis of the garden (Figure 50; Plate 139). At the southern end of the west wall, a secondary gateway, 4.7m (15½ ft.) wide, has been forced through the boundary wall (Figure 49; Plate 142), with plain jambs formed in rebuilt section of wall in purple brick (Plate 143).
- 6.5.4 Historic plans (Figures 8-15) and photographs (Figure 18) indicate that the southern garden was originally laid out in a similar fashion to that to the north, with quadrant planting beds defined by axial and perimeter pathways and a central dipping pool. None of these features survive at the surface within the garden, though the current programme of archaeological trenching has revealed traces of both the dipping pool (see §.7.7; Figure 76, Plates 195/6) and the former path routes (see §.7.6; Figure 66, Plate 177).

6.6 The East Annex Garden (Figures 52-56; Plates 145-148)

- 6.6.1 The east annex garden (Figure 52) is located to the eastern side of the north garden; trapezoid in plan, it measures 50m N/S x 41m E/W, extending to a total area of c.0.21 ha. The garden is bounded to north, east and south by 24in (2½ brick) walls standing c.3.2m tall (Figures 53, 54/5 and 56 respectively); the head of the walls are heavily obscured by vegetation to much of the garden though in places it retains a coping course of slate. The northern and southern walls clearly abut the eastern wall of the main north garden with only three courses of tied in brickwork at mid-height, implying that the eastern annex was appended to a pre-existing structure. The garden is accessed via opposing gateways within the western ends of the north and south walls (Figures 53 and 56); these gates vary from those of the main garden in having projecting piers of bull-nose brick, sandstone hinge-blocks and closed arches of elliptical form, again using rounded brick (Plates 159-61); further pedestrian access from the north garden is provided by a doorway with sandstone jambs with chamfered quoins, moulded capitals and elliptical arched head, described above as seen from within the north garden (§.6.1.3; Plate 17).

³⁹ First depicted on Ordnance Survey 1st Edition 1:2500 map of 1881-2 (Figure 13).

⁴⁰ The ridge vent lever mechanism is identical to the examples recorded within the south-east garden (see §.6.8.2, Plate 163).

6.6.2 The garden includes the footings of six ranges of buildings and garden structures of various dates, all aligned east-west (Figures 52 and 22b), together with a 'Potato Store' at the south-east corner (Figure 57). The structures comprise (from north to south):

- Mess room and tool shed with boiler house under (extant)
- Glasshouse and (?)truffle tunnel (footings only)
- Tomato house (footings only)
- Melon and cucumber pit (footings only)
- Fernery pit (footings only)
- Vegetable propagation frame (footings only)
- Potted chrysanthemum frame (footings only)
- Potato store at the south-east corner (extant)

6.6.3 With the exception of the potato store (see below), the recording of these structures was beyond the scope of the current project. The surviving footings were recorded in plan by Jeremy Milln of the National Trust in 1999,⁴¹ while a representative strip has been cleared across the footings during the current phase of works to evaluate the state of preservation (see §.7.5 below).

6.7 The 'Potato Store' (Figure 57; Plates 150-159)

6.7.1 The potato store is located hard in the south-east angle of the eastern annex garden abutting the southern wall thereof (Figure 57; Plate 150). It is a single-storey, brick-built structure, rectangular in plan (29ft 6 in. / 9m E/W x 11ft 2 in. / 3.4m N/S) with a mono-pitch roof, clad in substantial roofing slates. The exterior walls are a single brick deep, of mid orange-red, lightly fired brick (9¼ x 4¼ x 2¾ in.) laid to Flemish garden wall bond (north elevation; Plate 151) and plain Flemish bond (west elevation; Plate 152). The eaves level is defined by a ¼ brick oversail course which returns onto the western elevation as a projecting string (Plate 152). The exterior walls of the building were noted to meet the eastern and southern garden bounding walls in clear butt joints, denoting that the structure was secondary to the creation of the annex garden, a supposition that is supported by the evidence of historic maps (see §.5.5.8). Access to the interior is furnished via a single, 3ft (0.93m) wide segmental-headed doorway set centrally within the short, western wall (Plate 152); otherwise the building displays no primary openings.

6.7.2 Internally, the structure is of four c.7 ft (2.15m) bays defined by timber principals, set into the brickwork of the garden boundary wall and carried on a timber plate atop the north wall (Plates 153/4). The principals carry two tiers of timber purlins on their upper face; the roof is lined internally with timber lathes applied to the soffit of the common rafters and originally plastered, though much render has been lost and, where it survives, does not appear to be original. Long, secondary battens following the slope of the roof, have been applied to the soffit of the purlins and these retain fragments of packed heather insulation material, previously noted by Bates (1984). Two brick-lined flues, 10 in. (0.25m) wide, with ceramic capping slabs are aligned longitudinally running the full length of the building (Figure 57c); removal of one of the capping slabs revealed the flues extend to a depth of c.2 ft (0.6m) and display evidence of soot blackening (Plate 154). The flues align with a void in the eastern wall which opens to the exterior where the remains of a (?)furnace house have been investigated as part of the current programme of work (see §.7.8.5). This void is

⁴¹ J Milln Survey Drg No. SH/S8, May 1999.

partially obscured by a secondary, iron boiler (Plate 156) which feeds iron heating pipes extending through the depth of the south garden wall. To either side of the central flue system the floor surface comprised loose earth. The southern side of the range houses a system of cast-iron shelving (Plate 155), arranged over two levels, comprising five circular section uprights carrying longitudinal and transverse horizontal bars; the transverse members are formed of angle profile sections and are tied into the brickwork of the south wall. Regularly spaced sockets within the north wall suggest the arrangement may formerly have been mirrored on the opposite wall. An ephemeral stud partition of no great age has been introduced midway along the range.

- 6.7.3 The structure is secondary to the creation of the east annex garden, being first clearly indicated on the survey of 1833 (Figure 10). The nomenclature of potato/apple store relates to its 20th-century use (J. Milln *pers. comm.*) and does not necessarily signify its original function. While the lack of primary openings (except the single access door to the west) would make the space suitable for storage purposes, the inclusion of a primary heating system is somewhat contradictory.

6.8 The South-East Garden (Figure 58; Plates 160-165)

- 6.8.1 The south-east garden is located to the south of the east annex garden from which it is accessed via a wide gateway entrance in the southern wall of the latter (Plate 160/1). The garden is bounded to the north by the south wall of the east annex garden (Figure 58; Plate 162) and to the west by the east wall of the south walled garden; it has no bounding walls to the east or to the south, the eastern boundary comprising a short length of brick wall with pedestrian doorway (Plate 165), the alignment of which is continued by a line of mature yew trees. Historically the south-east garden is known to have been used as an orchard.
- 6.8.2 A late 19th-century glasshouse (the 'Nectarine House') formerly backed onto the southern face of the north wall, first indicated on the Ordnance Survey 1st Revision 1:2500 map of 1901-2 (Figure 14) and recorded in historic photographs (Figure 22a). The glasshouse was c.32m (35 yds) long x 3m (10ft) wide with a low brick wall to the south and a timber superstructure. A series of three lever mechanisms for longitudinal ridge ventilators by Messenger and Co. Of Loughborough⁴² survive along the length of the wall (Figure 58; Plate 163). At the far east end of the elevation, a corner stack was noted rising above the head of the wall; presumably related to the boiler house exterior to the east wall of the annex garden, this stack was too heavily overgrown to allow detailed investigation (Plate 164).
- 6.8.3 The Nectarine House was investigated as part of the current programme of works (see §.7.4 below).

7 ARCHAEOLOGICAL TRENCHES by C. Hewitson

7.1 Introduction

- 7.1.1 The requirement for archaeological trenching is set out in section 8.7 of the project brief. Closer definition was provided and some deletions made to the brief following

⁴² Formed in 1858, the firm of Messenger and Co. became famous, particularly in the Victorian and Edwardian periods, for greenhouses, verandahs, summer houses, cucumber frames, melon pits, mushroom beds, orchid stages, vineries and peach houses. The company archives are deposited at the Museum of English Rural Life, University of Reading.

on-site discussions with Stephen Dean of Staffordshire County Council and Jeremy Milln of the National Trust both prior to and during work. The following scheme reflects the results of those discussions. Trench locations are illustrated in Figure 59. Detailed trench descriptions have been provided in Appendix C and contextual descriptions have been provided in Appendix E.

7.2 **Vineries and conservatory: *Brief Item 8.7a*** (Trenches 1-6; Figures. 60-5; Plates 166-76)

The site

- 7.2.1 A total of five buildings are known from historic mapping (see Figures 3-16). These are two vinery buildings either side of the Gardener's House (each measuring approximately 26m long by 5.5m wide), two glasshouses 10m long glasshouses against the northwestern and northeastern section of boundary wall and a conservatory that is known to have extended to the south of the Gardener's House, measuring approximately 13m (north – south) by 10m (east – west).

Objectives

- 7.2.2 In all cases the trenches were excavated purely to investigate the survival and nature of historic floor surfaces and under floor heating systems related to the Georgian and Victorian glass houses. A small *sondage* was excavated within one of the northern trenches to establish the level of natural sub-soil.

The trenches

- 7.2.3 A series of 6 trenches were proposed, one to investigate the northwestern greenhouse, measuring 5m x 1.2m (Trench 1); three trenches to investigate the vineries against the north wall, each measuring 1.2m x 5.5m (Trenches 2, 3 and 5); a trench to investigate the eastern greenhouse (Trench 6) measuring 5m x 1.2m and a further trench measuring 1.2 m x 15m long was excavated to investigate the conservatory (Trench 4).

Interpretation

- 7.2.4 The earliest remains in Trench 1 (Figure 60; Plates 166/7) relate to the earliest phase of the walled garden, that contained a curvilinear outer wall boundary (107). Remains relating to a ceramic flue structure (104) suggest the earliest phase of below-ground soil heating were located at the front of the trench. Other structures within the trench appear to relate to internal frames (105, 103), but their structure is at variance to the simple rectilinear plans encountered elsewhere and it is possible that the shape reflects the curvilinear wall to the west of the trench.
- 7.2.5 Trenches 2 and 3 revealed remains relating to below-ground structures associated with the western vinery (Trenches 2 and 3; Figure 61, Plates 168/9 and Figure 62, Plates 170/1 respectively). In particular the outer southern wall and sandstone capping survives (215; 304), with associated 'vine-holes' (Plate 170), revealing that the walls were adopted for growing vines through their structure. As part of the external wall of the bothies are a series of below-ground structural arches (213, 309). East – west walls (212; 305, 308) and associated roughly coursed brick floors (211; 310, 312) define the remains of 'pine' pits. The base of these survives at a depth of at least 0.9m. Within these the line for a series of pillars supporting either the primary or secondary roof structure are located in both Trenches 2 and 3. In Trench 2 this is a sandstone pillar base (210), whilst in Trench 3 it survives as a brick pier (306).
- 7.2.6 Trench 4 (Figure 63; Plates 172/3) reveals a clear correlation between the internal and external walls visible on the historic mapping and images. The external eastern

and western walls are shallow sandstone capped brick walls (405, 412), again with 'vine holes' for the growing of vines through the external structure (Plate 173). Internally the conservatory is sub-divided into two with the central north – south path (409), following the line of the current concrete path, and the remains of the below-ground supporting brick structure (422) surviving below this. The internal sub-division by two parallel walls (406, 407; 412, 418), mirrored in east and west side of the conservatory possibly suggests the conservatory was remodelled from an earlier shallow bed structure, to include 'pine pits' either side of the central path. These are brick-lined at the base (423) like those in the western vinery.

- 7.2.7 The eastern vinery (Trench 5, Figure 64; Plates 174/5) was excavated and revealed the remains of the vinery walls that in essence mirrored those in the western vinery. The front wall is constructed in rough brick foundations (508) but the sandstone capping has been removed. The bothy wall (503) again displayed the below-ground structural arches (Plate 175). The internal structure was dominated by sub-dividing walls (502, 507) that defined the deep 'pine pits' with a cement floor surface (516) located at a depth of 1.2m (Plate 174). Within these is a brick pier (505) as before but located to the south of the trench, suggesting that they in fact acted as supports for under-floor heating pipes perhaps below the level of the staging. The internal structures may suggest later alteration of the original 'pine pits' as their original function was modified.

- 7.2.8 Examination of the eastern glasshouse did not reveal the external structure (Trench 6, Figure 65; Plate 176). The front wall of the structure remained unexcavated but remains of a sub-dividing north – south wall (607) suggest that abutting the back-wall may have been a bed. Other remains represent the north-east angle of a later rectangular, free-standing glasshouse (603, 606) first evident on the Ordnance Survey of 1901-2 (Figure 14) and recorded in historic photographs (Figure 21a).

Survival/ Condition

- 7.2.9 Overall the below-ground survival of structures associated with the northern half of the walled garden was good. Clear definition of the western and eastern glasshouses and the western and eastern vineries as well as the conservatory has occurred.

Conservation

- 7.2.10 The level of survival within the area of the northern vineries and conservatory mean there is the potential to rebuild or adapt these former building outlines as part of the proposed bid. The earliest floor levels within the trenches have generally been in excess of 1m below the current ground level suggesting that a strategy of reducing the floor level in either the eastern or western vinery would be possible.
- 7.2.11 Any proposed adaptation or reconstruction would certainly require excavation as part of the planning schedule. Initial discussions with Chris Evans of Staffordshire County Council and Jeremy Milln of the National Trust have suggested there is scope that at least some of the excavations could be undertaken as a community project with the involvement of professional archaeologists to implement the programme and the potential for this should be explored in particular as it may contribute to a positive outcome with any proposed funding bid.
- 7.2.12 This would certainly involve the loss of some internal features, but exposure of these features may allow their adaptation into a final design and the flexibility within the design scope should perhaps be allowed. These features include walls of the pineapple pits, frame walls and column bases. The involvement of the project design team during archaeological excavation stage would potentially allow this.

7.3 Ha-ha: Brief Item 8.7b (Trench 10, Figure 68, Plate 181; Trench 14, Figure 172, Plate 185)

The site

- 7.3.1 The walled garden is encircled by a ha-ha which extends round its north, east and southern sides (Figure 23). The fourth (west) side is defined by the Sher Brook. It extends to a maximum length of approximately 500m and measures between 2.5 and 3m wide. The ha-ha is faced with a wall of sandstone ashlar.

Objectives

- 7.3.2 The intention was to investigate the manner of construction of the ha-ha, its relationship to natural soil horizons and assess the survival of evidence and its potential for conservation.

The trenches

- 7.3.3 Two short trenches were excavated across the line of the ha-ha. Exact locations were established on site, one trench on the northern arm (Trench 14; Figure 72, Plate 185) and one trench on the eastern arm (Trench 10; Figure 68, Plate 181) of the ha-ha. Trench 10 was orientated east-west, 1.2m in width by 3m in length. Trench 14 was orientated southeast-northwest, 1.2m in width by 3m in length.

Interpretation

- 7.3.4 The two trenches revealed that the ha-ha consists of the visible sandstone ashlar wall (1004, 1405), with an asymmetric ditch (1006, 1403) that rises to a height level with the ha-ha wall. The addition of the pathway (1001, 1002, 1402) in the 1990s has resulted in some infilling of the base of the ha-ha ditch but this was minimal.

Survival/ Condition

- 7.3.5 The ha-ha survives well as an open ditch with retaining wall over most of its course. It is understood that it was cleared of silt in the 1980's and some repairs done. Today the top course of stones is mostly in poor repair, with some blocks missing.

Conservation

- 7.3.6 The line of the ha-ha survives almost completely intact at the two locations. The addition of the pathway in the 1990s has resulted in some infilling of the base of the ha-ha ditch but this was minimal. Subsequent neglect of the ha-ha had seen the collapse of the ha-ha wall in places. It is considered, from the good survival, that the ha-ha is very capable of archaeologically-informed repair and consolidation of the remains which in places are in a fragile state. A programme of clearing of the undergrowth surrounding them, in particular the walls and rebuilding where collapse has already occurred, should prevent any further damage.

7.4 Apricot and Nectarine Houses: Brief Item 8.7c (Trench 11, Figure 69, Plate 182, TP-15, Figure 69, Plate 186 and Trench 17 Figure 73, Plate 188)

The site

- 7.4.1 The Apricot and Nectarine Houses were located to the south of the north walled garden and east annex garden respectively. Reference to the Ordnance Survey maps (see Figures 13 and 14) suggests they were of similar scale and measured approximately 30m long by 3m wide. The Apricot House would appear to be slightly earlier, being evident on the Ordnance Survey 1st Edition of 1881-2 (Figure 13) while the Nectarine House is first shown on the revision of 1901-2 (Figure 14); both would

appear to be have been erected by the firm of Messenger and Co. Ltd. of Loughborough (see §.6.5.2 and §.6.8.2 above).

Objectives

- 7.4.2 Trenches were excavated purely to investigate the survival and nature of historic floor surfaces and structures. A small sondage was excavated within one of the trenches to establish the level of natural subsoil.

The Trenches

- 7.4.3 It was proposed to investigate the footprint of each structure by means of a single trench, 1.2m wide by 3m long (Trenches 11; Trench 17,).
- 7.4.4 A small (1m x 1.2m) sondage was excavated (Test-pit 15, Fig. 69, Plate 186) adjacent to the southern bounding wall of the main walled garden to complete the cross-section investigation combined with Trench 11.

Interpretation

- 7.4.5 Excavations in the Apricot House (Trench 11; Figure 69, Plate 182) suggest that the cill wall of the Apricot House had either been removed or was constructed of a series of piers (see 1108) as opposed to a continuous wall. It may be noted that a number of 18th-century garden and boundary walls to the rear of Tipping Street, Stafford were found on excavation to have been similarly constructed on the pier and buried arch system (Steve Dean pers comm. Oxford Archaeology, October 2009). The base of the Apricot House had a rudimentary cement floor (1103), which had been covered with a layer of brick rubble (1102) and a ceramic drain (1105). This suggests that the area of the Apricot House had been radically remodelled after its disuse and this possibly involved its replacement with a series of beds. The presence of a second brick pier (1107) or plinth within the trench may suggest that sub-structures existed within the Apricot House, possibly relating to the base of an internal frame.
- 7.4.6 Test-pit 15 suggests a disparity in the height of the wall foundations (1104, 1500) between the northern and southern sides of the wall.
- 7.4.7 Excavations in the Nectarine House (Trench 17; Figure 73, Plate 188) revealed the remains of the cill wall (1703) still *in situ*, although badly exposed and in the process of collapse. The wall appears to have been cut directly into the garden/ subsoil below and subsequently built-up with material. Images of the Nectarine House (Plate 22a) suggest the interior was raised above the exterior ground level and this may suggest material was imported to internally raise beds. In the interior of the Nectarine House is a low plinth (1704) that would appear to suggest sub-structures existed in the Apricot House in a similar manner to the Nectarine House above, possibly also relating to the base of an internal frame.

Survival

- 7.4.8 Remains of the Apricot House appear to have been almost entirely removed and the suggestion is that floor surfaces and some internal structures could survive but the outline of the cill wall has been removed. The Nectarine House appears to be well preserved, but the exposure of the southern cill wall has led to collapse that may require remedial work.

Conservation

- 7.4.9 Any potential redevelopment of the Southern Walled Garden should aim to further evaluate the Apricot House to establish the precise level of survival. In the first instance this should involve further archaeological trenches located at either end of

the known historical structure to establish the extent and potential survival. Further decisions on the potential for restoration or conservation of this structure cannot be made given our limited understanding of it at the present time.

- 7.4.10 Any bid should at the minimum aim to consolidate the remains of the Nectarine House. Collapse of the southern wall appears to be partly due to an absence of supporting structures and it may be that if no restoration is planned the structures can be covered with a permeable membrane and soil to prevent further degradation of the remains. The presence of undergrowth is likely to cause disturbance of below-ground structures by root-action and a programme of clearance of the undergrowth would certainly prevent further collapse.

7.5 Pit Houses and Support Structures within Annex Garden: *Brief Item 8.7d* (Cross-section profile, Figure 77, Plates 196, 197, 198, 199; Test-Pit 16, Figure 73, Plate 187)

The Site

- 7.5.1 The annex garden lay to the east of the main walled garden and contained a number of structures associated with the complex support system for the garden (Figure 52).

Objectives

- 7.5.2 Excavations were undertaken within the annex garden in the 1980s and plans exist of the garden. The objective was to create a full cross-section and therefore a 3-dimensional record of the garden in addition to the 2-dimensional plan.

The trenches

- 7.5.3 The full extent of the eastern annex garden was cleared of undergrowth and a 4m wide strip, aligned north – south, cleaned down to the level of the underlying garden structures. The pre-existing plan⁴³ of the annex garden was validated, a longitudinal cross-section of the garden and associated structures drawn and full photographic record made (Figure 52, Figure 77, Plates 196, 197, 198, 199).
- 7.5.4 The excavation of a small (1m x 1.2m) sondage (Test pit 16; Figure 73, Plate 187) adjacent to the northern bounding wall to complete the cross-section investigation of this feature.

Survival/ Condition

- 7.5.5 The cross-section revealed that the survival of structures within the annex garden was good. However, a number of the areas of the annex garden had become heavily overgrown and as such present a hazard as cavities existed beneath the undergrowth. Attempts to preserve the structures using textile matting laid down in the 1980s had not been entirely successful as this had decayed in the intervening years. In particular the coal hole and the truffle tunnel contained substantial voids and any future work within the annex garden should aim to isolate these.

Conservation

- 7.5.6 The level of survival of the structures within the annex garden has conformed to the levels revealed in the 1980s. Archaeological work has provided 3-dimensional cross-section (Figure 77) of the site in addition to the 2-dimensional plan already provided (Figure 52⁴⁴). Further conservation proposals are beyond the scope of this report as a

⁴³ J Milln Survey Drawing SH/S8 of May 1999 (see Figure 52).

⁴⁴ J Milln Survey Drawing SH/S8 of May 1999 (see Figure 52).

full condition survey of the remains in the garden would be required in order to assess a future programme of work.

7.6 Path Routes: *Brief Item 8.7e* (Trenches 7, 12, 13; Figures 66, 70, 71; Test pits 19, 20, 21, 22; Figure 75)

The sites

- 7.6.1 The extant path routes of the northern walled garden reflect closely the arrangement shown in historical mapping (Figures 8-16), a pattern that was also reflected in the southern walled garden down to at least 1923-4 (Figure 15).

Objectives

- 7.6.2 Trenches were excavated to investigate the survival of former path surfaces/edging etc.

The trenches

- 7.6.3 One trench (Trench 7; Figure 66, Plates 177/8) and a series of four test pits (Test pits 19-22; Figure 75, Plates 190-3) were excavated to investigate the path system of the north garden. Likewise, two trenches (Trench 12, Figure 70, Plate 183; Trench 13, Figure 71, Plate 184) were excavated within the southern walled garden to investigate the survival of former path routes.

Interpretation

- 7.6.4 Excavation of the path routes in the north walled garden revealed that substantial layers of material had been brought into the garden in order to establish the paths. In particular within Trench 7 (Figure 66; Plates 177/8), a large layer of compact orange gravel (707, 703, 700) appeared to be repeatedly laid down to build the path up. At least three separate periods of path construction had taken place. The compact gravel has a clear camber either side of the path to allow drainage. This has been replicated along the western line of the pathway (Test pit 19, 22; Figure 75, 1904, 2200), but varied in the central pathways (Test pit 20, 21, Figure 75) which appears to be of more rudimentary construction. In places a shallow layer of crushed brick appears to represent the latest line of the path (2001, 2102). These were lined by either a row of upright tiles (eg 2001), or partial bricks (eg 2203). The pathways varied in width but those in Trench 7 appeared consistently to be around 10' to 10'6" in width (c 3.0m) similar in size to the current paths.

- 7.6.5 Excavation of the path routes in the southern walled garden reveals the line was discernable and continued to survive in places. It is visible as a thin layer of crushed brick and stone in Trench 12 (1209, 1210). This was followed by a further episode of path building (1203, 1204; Figure 70, Plate 183). In Trench 13 is a similar rubble layer (Figure 71, Plate 184, 1303), which is lined by hand-made red bricks and the path was narrower than in the northern garden at 7'10" (2.4m).

Survival/ Condition

- 7.6.6 Survival of the earlier paths beneath the current surfaces appears to have occurred but is not necessarily uniform throughout the gardens. Careful removal of surfaces would have to occur in order to truly understand the original route lines.

Conservation

- 7.6.7 It is clear from the excavations that adaptation of the pre-existing path routes would not damage them as survival of earlier path construction can be attested for at least three phases. The remains within the southern garden may require careful excavation if they are to be reused as part of a programme of restoration. The remains are shallow and not easily discernable. It is almost certain that further evaluation work would be required to precisely locate all known path routes.

7.7 South Dipping Pool: *Brief Item 8.7f* (Trench 23)

The site

- 7.7.1 Reference to historic mapping (Figures 10-15) indicates a dipping pool within the southern walled garden, mirroring that within the north garden being located at the central intersection of the pathway system.

Objectives

- 7.7.2 A single trench was located to investigate the survival and location of the southern dipping pool.

The trench

- 7.7.3 Trench 23 was excavated on the site of the southern pool to investigate the extent of survival and form of construction (Figure 76, Plates 195 and 196). The site of the southern dipping pool was obscured by a c.4m high spoil heap which needed to be removed in advance of excavation.

Interpretation

- 7.7.4 The line of the dipping pool in the southern walled garden was located as a single curvilinear course of bricks (2303) in its south-eastern corner at a depth of c.2m below the current ground level. It survives only as a single course of brick wide of unknown depth (not fully excavated). Examination of the size and alignment of the north dipping pool suggests that the remains uncovered relate to the internal elliptical brick-built element of the dipping pool.

Survival

- 7.7.5 The southern dipping pool appears to have a considerable overburden placed over it. It is not clear from this trench if any of the stone elements of the dipping pool survives. However, given the substantial depth of overburden it would be suggested that the likelihood of good preservation is high.

Conservation

- 7.7.6 The excavations have proved the dipping pool survives and the potential overburden associated with its location. This should be sufficient information to inform any potential funding bid. No further work would be required in its current state as the depth of overburden would be sufficient to preserve the remains.

7.8 Support structures outside annex garden: *Brief Item 8.7g* (Trenches 8 and 9)

The Site

- 7.8.1 Reference to historic mapping (see Figures 3-16) revealed a range of structures abutting the exterior eastern wall of the annex garden, measuring approximately 5m (north – south) x 3m (east – west).

Objectives

- 7.8.2 The trenches were designed to investigate the survival and nature of historic floor surfaces and under floor heating systems related to the Georgian and Victorian glass houses.

The Trenches

- 7.8.3 Two trenches (Trench 8, Figure 67, Plate 179, Trench 9, Figure 67, Plate 180) 1.2m wide by 2.5m long were excavated across the footprint of this range.

Interpretation

- 7.8.4 Investigations focused on a number of deep structures that survive against the eastern exterior wall of the annex garden. Excavations in the northern corner of the annex garden (Trench 8) revealed a deep, brick-vaulted structure (800, 801) that may relate to a former truffle tunnel. It remained partially unexcavated as the depth of material back-filling it was substantial. Conclusions regarding the extent of this tunnel cannot be made and it may have continued to the south of the present excavations.

- 7.8.5 Excavations at the southeastern corner (Trench 9), uncovered already excavated but unrecorded remains, relating to the former flue system associated with the boilers in the apple and potato house in the annex garden. At least two phases of the flues were uncovered (901, 902) and passes into the apple and potato house, located in the southeast corner of the annex garden. The base of the flue was not uncovered as this was located at a substantial depth which could not be reached as excavations were ceased due to health and safety considerations.

Survival/ Condition

- 7.8.6 Survival of the remains outside the annex garden has been corroborated and suggests that a series of underground tunnels and flues exist to the east of the garden. The remains on the exterior eastern wall of the annex garden are substantial and well preserved.

Conservation

- 7.8.7 Further work would be required to fully assess the extent of the structures. The current work does suggest that infilling and stabilisation of the remains should occur in order to make these safe and allow access to this area of the site as excavation in the 1980s and the abandonment of the remains has left a series of intact voids, and unsupported walls of the annex garden. The potential depths of any excavations suggest that further work will require clearance of tree cover and structural examination of the exterior wall of the annex as the stability of the wall poses health and safety concerns.

7.9 Structures outside walled garden to west: **Brief Item 8.7h** (Trench 18)

The Site

- 7.9.1 A trench (c 8m x 1.2m) to the west of the walled garden to investigate the nature of the west slip and the location of the bounding wall shown on historic plans. To be combined with results from the previous evaluation undertaken in 2005 (Halsted 2005, see Appendix F).

Objectives

- 7.9.2 The trench was designed to examine remains of the slip wall of the western annex to the walled garden and any potential path systems relating to this.

The trench

- 7.9.3 After negotiation Trench 18 was repositioned to avoid the 11kV cable running from the newly positioned visitors centre and avoid disturbing the tree bole of a series of sycamores with Tree Protection Orders.

Interpretation

- 7.9.4 The trench revealed a single east – west wall (1802), three courses wide of hand-made red brick that may relate to a return of the slip wall or possible structure in this location. The location of the slip wall is unclear according to the Historic Map evidence. The earliest plans (Figs 7-12) date from 1806 through the 19th century place the slip wall further to the north than the current location. However, the Ordnance Survey maps (Figs 13-16) suggest that this wall relates to the location of the return of the slip wall. The only other possibility relates to a structure constructed prior to 1971 (Figure 16).
- 7.9.5 A north – south gravel surface (1804) corresponds perfectly with the location of the original path that bisected the western garden and the gravel can only be assumed to be the latest manifestation of this path.
- 7.9.6 The slip wall was originally located during an evaluation undertaken during 2005 as part of the development of the visitors centre (Halsted 2005, Figure 79). It ran north – south parallel to the Main Walled Garden western wall, and located at a distance of c 8m from it. Description of this wall suggests it had a sandstone foundation of four courses (2005-1042) overlain by three course of hand-made red brick (2005-1030). The watching brief revealed the wall continued to the south in the same alignment.
- 7.9.7 Geophysical Prospecting undertaken by Stratscan in 2005 associated with the evaluation revealed strong magnetic anomalies in this location that could be associated with below ground surfaces, structures or rubble spreads (Figure 78). The results of the evaluation also revealed a series of floor surfaces and walls beneath the location of the present visitors centre. These correlated with structures revealed on the 1st edition Ordnance Survey Map (1881-2) and strongly suggest survival of other below ground-structures in this location (Figures 13, 78 and 79).

Survival

- 7.9.8 Good survival of the west slip wall, garden and associated path routes occurs. Combined with evidence from the 2005 evaluation this suggests the potential for below-ground remains along the western side of the main walled garden.

Conservation

- 7.9.9 Any restoration programme would require further excavation work in order to fully reveal the extent of the garden. However, the shallow survival and robust nature of the remains suggest this would be a relatively straight forward excavation procedure.

8 POTTERY by Emma Collins

- 8.1.1 The pottery was examined macroscopically and occasional sherds were examined under a 20x bifocal microscope. The pottery has been quantified by sherd count, weight, minimum number of vessels represented (m.v), minimum number of bases represented (m.b), minimum number of handles represented (m.h).
- 8.1.2 There were a total of 75 sherds weighing 1089g, with a m.v 14, m.b 20 and m.h 0. There was also a spout present. The assemblage is mainly post medieval in date with occasional late medieval sherds and some flower pot fragments.

8.2 Discussion

- 8.2.1 Details of the individual fabric types are contained within Appendix C.
- 8.2.2 The small assemblage dated from 14th century through to the 19th century. The quantification and weight of each fabric is shown in the table below.

Fabric	Count
BSGSW	2
CistW	2
CreamW	4
CW	28
GrittyW	2
ISW	13
MP?	2
Pearlw	12
Porc	
type	5
WEW	5

Table 2: Quantification of pottery fabrics from the site.

- 8.2.3 As can be seen in Table 2, the most common fabric present was a coarseware fabric with 28 sherds. Industrial slipware and pearlware represent the next largest quantity of the fabrics with ISA having 13 and Pearlw 12.
- 8.2.4 The overall appearance of the assemblage is that it has very little abrasion suggesting it has not travelled far after deposition. The majority of the assemblage is made up of coarseware in the form of flower pots, which is not unexpected giving the nature of the site. The other forms present are all quite simple tablewares, including bowls and plates, there are no high status vessels. The simple tablewares are creamware, pearlware, industrial slipware, glazed white earthenwares and some porcelain/bone china type fabrics.

Form	Count
Bowl	15
Flower pot	28
Jar	2
Plate	11
Tea pot	1
Unknown	18

Table 3: Quantification of sherd count of each form.

- 8.2.5 The most interesting form is of a teapot spout in a creamware fabric with incised decoration. Most bases show signs of wear suggesting the ceramics were well used before they were discarded. The overall date provided by the pottery excluding the intrusive medieval wares is 18th-19th centuries.
- 8.2.6 The presence of flower pots was not unexpected given the nature of the site. However, the absence of any high status wares given the closeness to the hall could be significant.

9 OTHER FINDS *by Emma Collins*

9.1 Discussion

- 9.1.1 The tile from the assemblage was fragmentary and contained several fragments of tile in a fabric very similar to that seen in engineering bricks. A fragment of modern glazed wall tile (302) was also noted. The brick fragments were all red brick (302).
- 9.1.2 Other ceramic finds included three fragments of cement mortar, a small fragment of undecorated clay pipe stem (203) and a fragment of drain pipe (302) (recorded as ceramic other in Table 4, Appendix C).
- 9.1.3 Several items of iron were found, including four nails and nine other items, seven of which were thin flat pieces (1002) as shown in Table 5, Appendix C.
- 9.1.4 The glass consisted of six small vessel fragments, mainly colourless glass and also two fragments of brown glass (900), which appeared to be from the same vessel. Eight flat pieces of probable window glass were also present, four of which were ridged on one side to obscure the view if looked through (302).
- 9.1.5 Food waste in the form of animal bone and oyster shells were also recovered. The bone is potentially from domestic species such as chicken and cow.
- 9.1.6 The remainder of the finds from the site were one piece of coal weighing less than one gram (1101) and a black plastic bottle lid weighing seven grams (900).

10 DISCUSSION AND CONCLUSION

10.1 Discussion

- 10.1.1 Each element of the current programme of archaeological investigations has allowed for significant detail to be added to the understanding of the origins, development and functioning of the walled garden complex, and can be seen to provide useful information for any proposed representation scheme.

- 10.1.2 The desk-based assessment has allowed for the historical development of the site to be traced in some detail. In particular, the sizeable collection of historic maps held by the Staffordshire County Record Office allows for a chronology of development to be established. In respect of the Victorian re-ordering of the gardens in particular, a combination of cartographic and photographic evidence together with building recording and on-site observation, archaeological excavation and personal recollections of the complex (previously collected; Bates, 1984) allow for a detailed reconstruction of the arrangements to be made. The company archives of Messenger and Co. of Loughborough (not examined as part of the current project), may include further details in the form of bills, recipets, design drawings and/or contemporary trade catalogues.
- 10.1.3 The layout and arrangements of the walled garden as originally built reflect contemporary conventions, with 'four-square' quadrant gardens, south-facing glasshouses, heated walls and high bounding walls to take espaliered fruit trees. Elements of the primary garden layout, for example the curved-walled glasshouses to the north-east and north-west corners, together with constructional details such as the integratal 'vine-holes' within the edging blocks of the north-west vinery and conservatory, show that, though the layout was standard, the design and workmanship of the original gardens was of the highest quality.
- 10.1.4 Although the gardens appear to have been planned as a single entity, it is clear from an analysis of the fabric that construction was undertaken over a period of time; the east annex and south-east gardens, for example, are clearly later additions though they reasonably represent a second stage of a single construction programme as opposed to a separate phase of development *per se*.
- 10.1.5 Alterations and improvements were instigated fairly early on in the development of the gardens with the northern extension of the Head Gardener's House occurring before 1833; the original arrangements of this extension remain unclear though it is apparent that significant alterations have taken place.
- 10.1.6 The major programme of alteration occurred in the later 19th century when the vinery glasshouses were reconstructed and the system of heating changed to cast-iron steam pipes. Evidence for this fundamental development has been recorded both within the standing structures and within the excavated trenches.
- 10.1.7 Archaeological evaluation has revealed that both the extent of survival and state of preservation of below ground remains related to the Georgian and Victorian glasshouse ranges and the associated garden features was good and have potential to both inform and/or be incorporated within any proposed representation scheme.

10.2 Statement of Archaeological Potential

- 10.2.1 Results from the archaeological evaluation, in the area of the northern vineries and conservatory in particular, have shown that the preservation of related features is good and has significant potential to further understand the function and details of operation of the glasshouse ranges, both in their original form and their later alterations. Further open area excavation on the footprint of the northern vinery buildings may expose elements to provide a fuller understanding of these buildings and how these relate to the remains recorded within the Head Gardener's House. Dependent upon extent of survival and state of preservation, structural elements, in particular the outer footprint of the building and the arched walling of the north

elevation, may be worthy of in-situ preservation and potential incorporation into any redevelopment scheme. Internal elements of the structure such as column bases and defining walls of 'pine pits' relate to the overall function of the original building but there is no reason to suppose that a suitable designed scheme could not incorporate them into its design.

- 10.2.2 The archaeological evaluation elsewhere has revealed that the annex gardens, are currently in varying states of use, vegetation cover and exposure. Structures in the southern annex garden are likely to be well preserved as none have been exposed in its current form. However, our understanding of survival of these structures is limited as the majority are still located below ground and further archaeological work would be required to further our understanding.
- 10.2.3 In the eastern annex garden and surrounding structures it is clear that preservation is good but exposure to vegetation and weathering has resulted in some structural collapse and a condition survey may be required to assess preservation.
- 10.2.4 The western annex garden does not survive in a visible form. The results of the current evaluation combined with geophysical survey from and evaluation in 2005 suggest good below-ground preservation of structures. The potential for fully understanding these areas lies in further archaeological investigation.
- 10.2.5 The ha-ha survives in good condition. Infilling has occurred since the closure of the circular walkway associated with it and some of the large sandstone blocks have collapsed. Further archaeological work would not enhance our understanding of this structure. Consideration for some remedial work to enable preservation should be allowed in any future work.

11 ACKNOWLEDGMENTS

- 11.1 The project was commissioned by Staffordshire County Council; thanks go to Mr Chris Evans and Mr Steven Dean of SCC and Mr Chris Copp (SCC Museums Service) for help and advice throughout the course of the project. Thanks also to Mr Jeremy Milln of the National Trust for invaluable information on the history and development of the Shugborough gardens, and for supplying copies of his original drawings of the Walled Gardens, Gardener's House and Bothy ranges as the basis for the architectural study. Thanks also to all staff at Shugborough, in particular Mr Ron Mellor (Estates Manager) and Chris Childe (Caretaker). Thanks are also extended to staff at the Staffordshire Record Office.
- 11.2 The project was managed for Birmingham Archaeology by Ric Tyler AIfA (historic research and building assessment) and Christopher Hewitson AIfA (fieldwork). Ric Tyler undertook the historical research and historic building recording/assessment while the trenching was undertaken by a team of BA excavation staff (Liz Bishop, Mary Duncan, Erica Macey-Bracken and Phil Mann) under the supervision of Mr Bob Burrows. The present report has been written by Ric Tyler and Chris Hewitson and illustrated by Ric Tyler and Nigel Dodds. The final draft was reviewed and edited by Sam Paul (Project Manager) of Birmingham Archaeology, with additional comments from Stephen Dean and Jeremy Milln.

12 SOURCES

(a) Cartographic Sources (in chronological order)

- c.1770 Map of Shugborough Estate 'before the alterations' (SCRO D615/M/6/44).
- c.1800 Map of Shugborough Estate (SCRO D615/M/6/43).
- 1806 Map of Shugborough Estate, surveyed by Robert Wyatt (SCRO D615/M/6/46).
- c.1818-31 Map of Shugborough Estate (SCRO D615/M/6/50).
- undated Map of Shugborough Estate (SCRO D615/M/6/53).
- 1833 Map of Shugborough Estate, surveyed by J Hubbertsby (SCRO D615/M/6/52).
- 1839 Colwich Tithe Map (SCRO D1274/2/1).
- c.1847 Plan of proposed Trent Valley Railway at Shugborough,. (SCRO D615/M/6/61).
- 1881-2 Ordnance Survey County Series 1:2500 1st Edition.
- 1901-2 Ordnance Survey County Series 1:2500 1st Revision.
- 1923-4 Ordnance Survey County Series 1:2500 2nd Revision.
- 1971 Ordnance Survey National Grid Series 1:2500 Edition.
- 1999 J Milln Survey Drawing SH/S8

(b) Secondary Source

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(c) On-line resources

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<http://www.staffspasttrack.org.uk/>

APPENDIX A: Birmingham Archaeology Tender Proposal, June 2009**The Walled Garden, Shugborough Estate, Milford, Staffordshire**

Tender Proposal, June 2009

1 INTRODUCTION

- 1.1 The following document represents an outline for the provision of archaeological services at the Walled Garden, Shugborough Estate, Milford, Staffordshire. It has been prepared in response to a *Project Brief and Invitation to Tender* issued by Staffordshire County Council in May 2009.

2 SITE LOCATION AND ARCHAEOLOGICAL BACKGROUND

- 2.1 The Shugborough Estate is located close to the village of Milford in Staffordshire, c.7km to the east of Stafford. Shugborough is listed as Grade I on the English Heritage's Register of Parks and Gardens of Special Interest. Shugborough Hall originated as a medieval moated manor to the north of the present site of the Hall, forming part of the estate of the Bishop of Lichfield. The property and 80 acres of land were acquired in 1546 by William Paget and later sold to William Anson of Dunston. The building of the present hall appears to date to the late 17th century.
- 2.2 A number of archaeological sites and monuments exist within the Shugborough Estate. The earliest potential features relate to cropmarks identified through aerial photography. These appear to represent possible ring ditches which may date to the late Neolithic or Early Bronze Age, a pit alignment which may date to the Iron Age, and a rectilinear enclosure which may date to the Iron Age or Romano-British periods
- 2.3 A deserted medieval/post medieval village site exists on either side of the road approaching the Shugborough Hall, to the north-east of the walled garden and Park Farm, and documented as having been relocated as part of 18th-century improvements to the estate.
- 2.4 The Walled Garden is located to the south of the Hall; it was constructed to the designs of Samuel Wyatt in 1805 as part of an ambitious development of the Shugborough Estate by Thomas, 1st Viscount Anson, marking a revolution in the way the estate produced food and cut flowers for the house. The site comprises three walled gardens surrounded by three unwallled areas all enclosed within a ha-ha.

3 AIMS AND OBJECTIVES

- 3.1 The general aim of the proposed scheme of works is to prepare a baseline record of the walled garden site and to inform understanding as to the basic significance of the origins, development and significance of the extant structures and archaeological remains.
- 3.2 The objective of the project is to evaluate the date, nature, extent and significance of archaeological remains within the walled garden and to inform the appropriateness and scale of further archaeological investigations.

- 3.3 Further objectives are to inform architects' design proposals for the restoration of the walled garden complex and the interpretation of the walled garden complex.

4 SCOPE OF WORKS

The proposed archaeological works can be broken down into three elements as follows:

4.1 Desk-Based Assessment

- 4.1.1 An archaeological desk-based assessment will aim to develop an overall understanding of the historical and archaeological development of the site from prehistoric times through to the creation of the Shugborough Estate and further to define the origins, development of the walled garden itself. Further details are given in section 5.1 below.

4.2 Historic Building Recording

- 4.2.1 A programme of historic building recording will be undertaken to supplement work previously undertaken by the National Trust in 2000. Previous drawings will be used as the basis for recording of the Gardener's House and the eastern and western Bothies (English Heritage, Level 3), while new recording will be undertaken in respect of the boundary walls of the garden and the Apple and Potato Store. Further details of historic building recording are given in section 5.2 below.

4.3 Archaeological Trenching

- 4.3.1 A programme of archaeological trenching will be undertaken within the north and south walled gardens and within and external to the eastern annex garden. Details of trenching are given in section 5.3 below.

5 METHODOLOGY

5.1 Desk-Based Assessment

- 5.1.1 A search will be made of all relevant and readily available published and unpublished documentary source material, including historic maps, early photographs and drawings, written descriptions, and primary and secondary sources related to the site held at Shugborough itself and by the Staffordshire Record Office, the Lichfield Record Office, the William Salt Library, Stafford, and the libraries of the University of Birmingham. The Staffordshire County Council Historic Environment Record (SCCHER), the principal source of archaeological data for the area for the county will also be consulted. Standard on-line resources such as A2A, NMR and Staffordshire County Council's 'Gateway to the Past' will also be consulted.
- 5.1.2 It is understood that a sizable amount of historical documentation exists relating to the day to day functioning of the walled garden in the form of planting schedules, log books, accounts etc. While such resources will be identified and located during the course of the DBA report, it is not envisaged that significant new research into these documents will be undertaken at this stage.
- 5.1.3 It is not envisaged that aerial photographs will be consulted or re-plotted as part of the current project.

- 5.1.4 Subsequent to the completion of initial archival research, a walkover survey of the walled garden site will be undertaken to assess current conditions and to assist in assessing the potential for below ground archaeology.
- 5.1.5 Preliminary results of the DBA exercise will be made available in the form of an interim statement to inform the subsequent phases of archaeological work on the site. In particular, specific features of interest identified in archival research may influence the number and/or location of archaeological trial trenches, which may thus need to be reviewed in the light of the DBA.

5.2 Historic Building Recording

- 5.2.1 As a preliminary step, existing record drawings (A1 ink on film x 11 total) prepared by Jeremy Milln of the National Trust in 2000, will be digitised in .dxf format using AutoCAD 2006 software. Existing drawings are as follows:
 - Plan of Kitchen Gardens
 - Plan of Annex Garden
 - Head Gardener's House: Front Elevation
 - Head Gardener's House: Basement Plan
 - Head Gardener's House: Ground Floor Plan
 - Head Gardener's House: First Floor Plan
 - Head Gardener's House: Roof Level Plan
 - Head Gardener's House: Elevations and Section
 - Head Gardener's House: Sections
 - Back Shed (Bothy) range to east of the Gardener's House
 - Back Shed (Bothy) range to west of the Gardener's House
- 5.2.2 The Head Gardener's House, Eastern and Western Bothies, Apple and Potato Houses will be recorded to level commensurate with a 'Level 3' survey as defined by English Heritage in *'Understanding Historic Buildings: A Guide to Good Recording Practice'* (EH, 2006). Drawn survey will be based upon existing survey drawings prepared by Jeremy Milln of the National Trust and, in the case of the Apple and Potato House, upon newly generated hand survey drawings.
- 5.2.3 New survey will be undertaken in relation to the following buildings and structures on the site:
 - Apple and Potato House within the Annex Garden
 - Internal wall faces of all garden boundary walls
 - Site of extant dipping pool
- 5.2.4 The boundary wall survey will comprise an outline 'top and bottom' survey recorded by means of REDM combined with perpendicular high resolution digital photography, located by surveyed-in targets. It is not envisaged that plant clearance will be undertaken in advance of survey (S. Dean, *pers. comm.*). Resulting survey drawing will be annotated on site to show phasing, straight joints, blocking, fixtures and fittings. Boundary walls will be recorded to a level commensurate with 'Level 2' survey as defined by English Heritage in *'Understanding Historic Buildings: A Guide to Good Recording Practice'* (EH, 2006).
- 5.2.5 The photographic record will comprise high resolution (minimum 6 mega-pixels) digital photography using a Nikon D50 single lens reflex camera, extending to include both general and detail shots, contextual views and accessible exterior elevations, visible

structural and decorative details (interior and exterior), and general interior views of principal rooms and circulation areas. Where possible, photographs will include graded photographic scales. All photographs will be recorded on *pro-forma* recording sheets detailing subject, orientation, scales included, photographer and date.

- 5.2.6 Written notes will be compiled on *pro forma* record sheets as a basis for compiling the written description. Existing survey drawings of the buildings (supplied by WCC) will be annotated with significant archaeological detail.

5 Archaeological Trenching

- 5.3.1 The requirement for archaeological trenching is set out in section 8.7 of the project brief. Further to on-site discussions with Stephen Dean of SCC, the following scheme has been devised, based upon the percentage values stated in the brief. Provisional trench locations are illustrated in Figure 1.

Brief 8.7a: Vineries and conservatory

- 5.3.2 A total of three former vinery buildings are known from historic mapping (Figure 2), one to either side of the Gardener's House (each measuring approximately 26m long by 5.5m wide) and a further 10m long greenhouse against the north-western section of boundary wall. Working on a sampling strategy of 5% by area, three trenches are proposed, one to investigate the north-western greenhouse, measuring 1.2m wide by 1.25m long, and one to investigate each of the vineries against the north wall, each measuring 1.2m x 5.5m long. In all cases the trenches will be excavated purely to investigate the survival and nature of historic floor surfaces and under floor heating systems related to the Georgian and Victorian glass houses. A small sondage will be excavated within one of the northern trenches to establish the level of natural sub-soil.
- 5.3.3 A conservatory is known to have extended to the south of the Gardener's House (Figure 2), measuring approximately 13m (N/S) by 10m (E/W). Again based upon a 5% sampling strategy, a single trench measuring 1.2 m x 5.5m long will be excavated, purely to investigate the survival and nature of historic floor surfaces and under floor heating systems related to the Georgian and Victorian glass houses.

Brief 8.7b: Ha-ha

- 5.3.4 The walled garden is enclosed on three sides by a ha-ha extending to a maximum length of approximately 500m and measuring between 2.5 and 3m wide. Based upon a 1% sampling strategy, four short trenches will be excavated across the line of the ha-ha to investigate its manner of construction and relationship to natural soil horizons. Exact locations will be established on site, though it is envisaged to locate two trenches to the northern arm and two to the eastern arm of the ha-ha (Figure 1).

Brief 8.7c: 4% Apricot and Nectarine Houses

- 5.3.5 The Apricot and Nectarine Houses were located to the south of the walled garden and east annex garden respectively. Reference to historic mapping (Figure 2) suggests they were of similar scale and measured approximately 30m long by 3m wide. Working on a 4% sampling strategy, it is proposed to investigate the footprint of each structure by means of a single trench, 1.2m wide by 3m long. Trenches will again be excavated purely to investigate the survival and nature of historic floor surfaces and under floor heating systems related to the Georgian and Victorian glass houses. A small sondage will be excavated within one of the trenches to establish the level of natural subsoil.

Brief 8.7d: Pit Houses and Support Structures within Annex Garden

- 5.3.6 The full extent of the eastern annex garden will be cleared of undergrowth and a 4m wide strip, aligned north south, cleaned down to the level of the underlying garden structures. The pre-existing plan of the annex garden (NT Drg. No. SH/S8) will be validated, a longitudinal cross-section of the garden and associated structures drawn and full photographic record made.

Brief 8.7e: Path Routes

- 5.3.7 The extant path routes of the northern walled garden reflect closely the arrangement shown in historical mapping (Figure 2), occupying an area of c.960m²; working on a 2% sampling strategy, a total of 5 trenches will be excavated to investigate the survival of former path surfaces/edging etc. A suggested trench layout is given in Figure 1; precise locations will need to be established on site after due negotiations with SCC regarding public access requirements and Health and Safety considerations. Likewise a total of 19m² of trenches will be excavated within the southern walled garden to investigate the survival of former path routes; again, precise trench locations will be established on site.

Brief 8.7f: S Dipping Pool

- 5.3.8 Reference to historic mapping (Figure 2) indicates a dipping pool within the south walled garden mirroring that within the north garden. Assuming a similar arrangement and scale, and working on a 2% sampling strategy, a single 2m trench will be excavated on the site of the southern pool to investigate the extent of survival and form of construction.
- 5.3.9 The site of the southern dipping pool is currently obscured by a c.4m high spoil heap which will need to be removed in advance of excavation; it has been assumed that this spoil removal will be undertaken by means of mechanical excavator.

Brief 8.7g: Support structures outside annex garden

- 5.3.10 Reference to historic mapping (see Figure 2) reveals a range of structures abutting the exterior eastern wall of the annex garden, measuring approximately 5m (N/S) x 3m (E/W). Working on a sampling strategy of 2%, a single trench, 1.2m wide by 2.5m long will be excavated across the footprint of this range to investigate the survival and nature of historic floor surfaces and under floor heating systems related to the Georgian and Victorian glass houses.

5.4 Standard Procedures

- 5.4.1 All stratigraphic sequences will be recorded, even where no archaeology was present. Features will be planned at a scale of 1:20, and sections will be drawn of all cut features and significant vertical stratigraphy at a scale of 1:10. A comprehensive written record will be maintained using a continuous numbered context system on *pro-forma* cards. Written records and scale plans will be supplemented by photographs using black and white monochrome, colour slide and digital photography.
- 5.4.2 Deposits will be sampled for retrieval and assessment of the preservation conditions and potential for analysis of biological remains. The environmental sampling policy will followed the guidelines contained in the Birmingham Archaeology Fieldwork Manual and *Environmental Archaeology: a guide to the theory and practice of methods, from sampling and recovery to post-excavation* (English Heritage 2002). Sampling strategies for wooden structures will conform to guidelines set out in *Waterlogged wood*:

Guidelines on the recording, sampling, conservation and curation of waterlogged wood. (Brunning 1996).

- 5.4.3 Recovered finds will be cleaned, marked and remedial conservation work will be undertaken as necessary. Treatment of all finds will conform to guidance contained within the Birmingham Archaeology Fieldwork Manual and *First Aid for Finds* (Watkinson and Neal 1998).

6 STAFFING

6.1 Project Management

- 6.1.1 Overall project management will be undertaken by Christopher Hewitson, AIfA, Assistant Project Manager (Heritage Services).

6.2 Desk-Based Assessment

- 6.2.1 The desk-based assessment element of the project will be managed by Ric Tyler AIfA, Assistant Project Manager (Built Heritage and Conservation).

6.3 Historic Building Recording

- 6.3.1 The Historic Building Recording element of the project will be managed by Ric Tyler AIfA, Assistant Project Manager (Built Heritage and Conservation).

6.4 Archaeological Trenching

- 6.4.1 Trial trenching will be supervised in the field by Robert Borrows, AIfA; see profile Appendix A, with a team of 4 site assistants.
- 6.4.2 All members of project site staff will be suitably experienced field archaeologists with a minimum of one years experience. The IfA code of conduct will be adhered to at all times.
- 6.4.3 All staff involved in site work will be subject to full CRB checks before the commencement of the project.

6.5 Specialist Staff

- 6.5.1 The following specialist staff will be used as appropriate:

Prehistoric pottery	Dr Ann Woodward	Research Fellow, Birmingham Archaeology, University of Birmingham
Prehistoric flint		
Roman pottery	Dr Jeremy Evans	Honorary Research Fellow, Birmingham Archaeology, University of Birmingham
Roman pottery	Jane Timby	Freelance pottery specialist

Samian pottery	Felicity Wild	Freelance pottery specialist
Saxon, medieval and post-medieval pottery	Stephanie Rátkai	Honorary Research Associate and Finds Researcher, University of Birmingham
Ceramic building material (CBM), tile	Phil Mills	Honorary Research Fellow, Leicester University
Vessel glass	Cecily Cropper	Freelance specialist
Clay tobacco pipe	Dr David Higgins	Freelance Specialist
Coins, brooches	Dr Roger White	Project Manager, Lecturer and Assistant Director (Development), Institute of Archaeology and Antiquity, University of Birmingham
Iron, leather	Quita Mould	Freelance finds specialist
General finds	Erica Macey-Bracken	Birmingham Archaeology
Animal bone	Matilda Holmes	Freelance archaeozoologist
Human bone	Dr Megan Brickley	Institute of Archaeology and Antiquity, University of Birmingham
Archaeo-geomorphology	Dr Andrew Howard	Lecturer in Archaeo-Geomorphology and Remote Sensing, University of Birmingham
Palynology	Dr Ben Geary	Birmingham Archaeology Environmental
Archaeobotany	Rosalind McKenna	Birmingham Archaeology Environmental
Entomology	Dr David Smith	Institute of Archaeology and Antiquity, University of Birmingham
	Dr Emma Tetlow	University of Edinburgh

7 TIMETABLE

- 7.1 The work would normally start within one week of instruction to proceed, subject to CRB clearance, with fieldwork complete within two weeks of commencement. It is envisaged that archaeological trial trenching would be undertaken over a period of 8 days.

8 REPORTING

- 8.1 An interim report on the desk-based assessment will be made available upon completion of the initial stage of work to allow for a review of the results and its implications for the evaluation trenching stage of the project to be assessed.
- 8.2 Upon completion of the documentary research and fieldwork, the results of the archaeological desk-based assessment, historic building recording and trenching will be presented in a single composite report containing the following information:

Text

- Non-technical summary
- Introduction
- Site location and description
- Aims and objectives
- Methodology
- Archaeological and historical context
- Historical development of the development site
- Map regression analysis
- Previous archaeological work
- Site assessment (walkover survey)
- Description of standing buildings
- Results of archaeological trenches
- Discussion
- Statement of archaeological significance and potential
- Suggested further archaeological mitigation measures
- List of sources consulted

Figures

- Appropriate illustrations including location plan and a selection of historic maps / photographs
- Summary phase plan of garden and buildings as apparent from historical sources and a examination of the built fabric
- Appropriate illustrations of individual buildings based upon survey
- Appropriate illustrations of archaeological trial trenches
- A selection of colour plates

8.3 As required in section 8.20 of the project brief, draft copies of the final report will be made available to the following for comment ahead of report finalisation:

- SCC County Archaeologist,
- National Trust Regional Archaeologist
- English Heritage Inspector for Ancient Monuments for Staffordshire
- Garden History Society

9 PROFESSIONAL STANDARDS

9.1 The project will follow the requirements set down in the *Standard and Guidance for Archaeological Desk-Based Assessment* (IfA, 2008a), *Standard and Guidance for Archaeological Field Evaluation* (2008b) and *Standard and Guidance for the Archaeological Investigation and Recording of Standing Buildings or Structures* (IfA 2008c).

9.2 Birmingham Archaeology is a Registered Archaeological Organisation (RAO) with the Institute for Archaeologists (IfA); all project staff will adhere to the *Code of Conduct of the Institute for Archaeologists* (IfA, 2008d) at all times.

13 HEALTH AND SAFETY

10.1 All current health and safety legislation, regulations and guidance will be complied with during the course of the project.

14 REFERENCES

Brunning, 1996. *Waterlogged wood: Guidelines on the recording, sampling, conservation and curation of waterlogged wood.*

English Heritage, 2002. *Environmental Archaeology: a guide to the theory and practice of methods, from sampling and recovery to post-excavation.*

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10.06.09

APPENDIX B: Register of National Trust HBSMR entries

Sites for Shugborough are numbered within the block 53,000 - 53,399. Those which have already been allocated are as follows although very little HBSMR data for Shugborough has yet been entered to the Trust's Exegesis programme. The numbering given here should be adhered to throughout the CMP; built upon from the next numbers in the sequence in the course of data entry as new sites are recorded.

HBSMR No	Site or structure	OS NGR	Listed	SCC SMR Nos	Listed
53,100	Mansion House	SJ99222249	I	08016	
53,101	Rems of original walled garden	SJ99202260			
53,102	Old brick culvert adj walled garden/Shepherd's Mon	SJ 99232265			
53,103	Monument/urn base in old walled garden	SJ 99212260			
53,104	Shepherd's Monument	SJ99262264	II*		
53,105	Doric Temple	SJ99252258	II*		
53,106	Chinese House	SJ99252272	II*		
53,107	Footbridge juxta Chinese House	SJ99262271	I		
53,108	Orangery (site of)	SJ 99182258			
53,109	The Ruin, monument	SJ99152255	II		
53,110	Garden fountain	SJ99152254	II		
53,111	Stableyard service bldg to SW of Mansion	SJ99162245	II		
53,112	<u>Watercourses (fresh supply)</u> /1 Sher Brook culvert to S of Park Farm millpond /2 Sher Brook head race leat in Haywood Pk /3 Sher Brook head race brick culvert at WB Farm	SJ99082170			
53,113	Mill pond/causeway dam to Park Farm mill	SJ 991 218			
53,114	White Barn Farm C19 cart shed range	SJ 9886 2138	II*		
53,115	White Barn Farm pavilions, white barn & fold-yard bays	SJ98892137	II*		
53,116	Haywood Park Cottages	SJ 99072128			
53,117	Outbuildings at Haywood Pk Cotts	SJ99042128			
53,118	Satnall Cottage	SJ98652116			

53,119	Outbuildings at Satnall Cott	SJ98632110			
53,120	Brocton Entrance Lodge (opp Haywood Pk)	SJ99012132			
53,121	Ticket booth	SJ99172234			
53,122	Essex Bridge	SJ99522258	I	00038	
53,123	Service buildings SW of Mansion incl loos	SJ99152239			
53,124	<u>Watercourses (foul & drains)</u> /1 Drain culvert E of smithy in service yard found Nov 93 /2 Brick culvert running SE from mansion in Hall field	SJ99152247			
53,125	<u>Boundaries (banks & walls)</u> /1 Low earthwork bank ?with buried stone revetment	SJ99282237			
53,126	Trent & Mersey canal, built 1770s	SJ99652240			
53,127	<u>Roads, tracks & drives</u> /1 Drive from Lichfield Lodge entrance	SJ99692134			
53,128	Colwich-Stafford rly, built by N. Staffs Rly Co 1847	SJ99252142			
53,129	Iron bridge over canal, prob 1847 when rly built	SJ99652244		02875	
53,130	Colwich-Stoke rly juxta Trent & Mersey canal	SJ99812195			
53,131	Park Farm house	SJ99162187	II*		
53,132	Park Farm S. Range, incl water-mill	SJ99132186	II*		
53,133	Park Farm N. Range	SJ99132189	II		
53,134	Tower of the Winds, monument	SJ99192193	II*		
53,135	Hadrian's Arch, monument	SJ98662159	I		
53,136	Icehouse	SJ98472187			
53,137	Lanthorn of Demosthenes, monument	SJ98482194	I		
53,138	Dairy Cottage (incl farm admin)	SJ99132183			
53,139	Wyatt Walled garden walls	SJ99152160	Listed grade II, notified on 21.10.88; SJ 92 se 19/50b		listed grade II, notified on 21.10.88; SJ 92 SE 19/50B
53,140	Wyatt Gardener's House	SJ99112166	II*		

53,141	Wyatt Walled Garden ha-ha	SJ99192150	II*		
53,142	Iron Age bronze terret find	SJ97722103		01603	
53,143	Cat's monument	SJ99332273	II		
53,144	Moat of episcopal site	SJ99222250 to 99332264			
53,145	Pagoda (site, destroyed by flood, 1795)	SJ98872222			
53,146	Cascade/colonnade (flood destr. 1795)	SJ98832217			
53,147	Mill (site of)	SJ98852208		20791	
53,148	Lower mill pool/causeway dam	SJ98912208			
53,149	Dog kennel (site of)	SJ98892209			
53,150	Water wheel pit & race at White Barn Farm	SJ98882135			
53,151	Brick-lined culvert well to E of White Barn Cottage 6	SJ98912137			
53,152	Shugborough DMV site	SJ99252225		01649	
53,153	Air photo site: enclosure and pit alignment to W of walled garden	SJ99002173		04612	
53,154	Chance find: fragment of stone sculpture found 1997 on site of Orangery (53,108)	SJ99182258			
53,155	Quarry and caves at Great Haywood Cliffs	SJ99972182			
53,156	Kennels Cottage	SJ99252131			
53,157	Stafford Drive Lodge	SJ98002147	II		
53,158	Lichfield Drive Arch	SJ99722117	II	03259	
53,159	Shugborough Tunnel: Lichfield Grand Portal	SJ98822159	II	03260	
53,160	Shugborough Tunnel: Stafford Grand Portal	SJ98122161	II	03260	
53,161	Lichfield Drive: North Lodge	SJ99932092	II		

53,162	Lichfield Drive: South Lodge	SJ99922091	II		
53,163	Haywood Park Farm house	SJ99112070			
53,164	Haywood Park Farm buildings	SJ99052073			
53,165	Trent Lodge (was Great Haywood Lodge)	SJ99472252	II		
53,166	Canal ha-ha, Great Haywood	SJ99752194			
53,167	Walled garden: Bothies, forcing house etc to W of Garden House	SJ99082166	II*		
53,168	Walled garden: Boiler room, potting shed, fruit store & office to E of Garden House	SJ99132167	II*		
53,169	Walled garden: Vinery (white grapes)	SJ99092166			
53,170	Walled garden: Vinery (black grapes)	SJ 99132167			
53,171	Walled garden: Show house/ conservatory	SJ 99122165			
53,172	Walled garden: Fig house	SJ 99072164			
53,173	Walled garden: glasshouse (forcing/seedlings)	SJ 99142165			
53,174a	Walled garden: Plunging Pool, north	SJ 99122162			
53,174b	Walled garden: Plunging Pool, South	SJ 99132157			
53,175	Walled garden: Peach & Nectarine house	SJ 99152159			
53,176	Walled garden: frames	SJ 99182164			
53,177	Walled garden: Mushroom house & tools	SJ 99172163			
53,178	Walled garden: Glasshouse (lettuce & radish)	SJ 99172162			
53,179	Walled garden: Melon & cucumber pit	SJ 99182162			
53,180	Walled garden: fern pit house	SJ 99182162			
53,181	Walled garden: Vegetable propagation frames	SJ 99182161			

53,182	Walled garden: Chrysanthemum frames	SJ 99182161			
53,183	Walled garden: Mushroom house	SJ 99212160			
53,184	Walled garden: Nectarine & Apricot house	SJ 99205159			
53,185	Geophysics anomaly (find spot) in Arboretum	SJ99142270			
53,186	Little Haywood Lodge (association)	SK00312156			
53,187	Stafford Lodge, North	SJ97572111	II		
53,188	Stafford Lodge, South	SJ97582109	II		
53,189	Bridge arches, Haywood Drive	SJ99682244			
53,190	Haywood (hoggin) Drive	SJ99812238			
53,191	Cop Quarry and cottages (site of)	SJ99342159			
53,192	Sports Pavilion	SJ99402158			
53,193	WWII Building (munitions store?)	SJ 99282156		04073	
53,194	Outdoor Education Centre (AKA Girl's Camp)	SJ99352154		04073	
53,195	Outdoor Education Centre (AKA Boy's Camp)	SJ99472138			
53,196	WWII Building (transport shed?)	SJ99592156		20045	
53,197	WWII Building (store) Army camp	SJ99382167		04073	
53,198	Sewage Works	SJ99692129			
53,199	Woodyard buildings (site of)	SJ99062135			
53,200	Bungalow at White Barn Farm	SJ98852135			
53,201	Shugborough Old Hall (site of)	SJ99192253	-	00862	
53,202	Causeway, dam and fishpond.	SJ98462027		02110	

53,203	Deadmans barrow (association)	SJ98082020		02109	
53,204	Causeway dam and fishpond	SJ98552077			
53,205	Trent Lane Bridge (canal) (association)	SJ99602260	II	02874	
53,206	Bridge across River Sow, remaining of	SJ98482200		03154	
53,207	Linear crop mark N of Duck Covert	SJ99082148		04074	
53,208	Ring ditches West of Duck Covert	SJ99642135		04075	
53,209	Linear crop mark and trackway N of Duck Covert	SJ99522123		04076	
53,210	Antler tool find from nr Essex Bridge	SJ99522256		05005	
53,211	Mill pond bay and causeway down	SJ98752108		20790	
53,212	Fishing lake earthworks assoc. (modern)	SJ98842115			
53,213	Old public road across park – Stafford Rugeley	SJ98122163-99022140		20792	
53,214	"The Ridding Green" settlement site	SJ99502092		20795	
53,215	Woodside settlement site	SJ99852100		20796	
53,216	Haywood deer park incl. pales	SJ98802060		20797	
53,217	Shugborough landscape park	SJ99432164		40130	
53,218	Footbridge to Arboretum	SJ98832234	II		
53,219	Milepost on A513, 'Stafford 4'	SJ97652098			
53,220	Milepost on A513, 'Stafford 5'	SJ98882130			
53,221	Milepost on A513, 'Stafford 6'	SK00372073			
53,222	Weetman's Bridge on Meadow Lane (association)	SK00382077	II		

APPENDIX C: Trench Descriptions

Trench 1 (*Fig. 60, Plate 166, 167*)

Location and aims

Located adjacent to the western wall of the main garden, orientated in an east – west direction, 1.2m by 5.5m in size. Aims were to investigate the western glasshouse.

Results

All trench depths are below 81.97m AOD.

The original back wall of the glass house was defined by curvilinear wall 107, that ran northeast – southwest across the trench. It was constructed in hand-made red brick (9¼" x 4½" x 3½") and exposed to a height of six courses. This appears to pre-date the construction of the western garden wall in this location where a clear wall break shows it was reconstructed in a linear fashion from the original curvilinear wall defined by 107. The front edge of the glass house for the earliest phase was not defined.

An internal corner of a wall with a curvilinear apse (103) constructed in hand-made red brick in the English Garden Wall bond (9" x 4¼" x 2¼") sub-divided the glass house. This may have related to an internal frame structure. In front of this was a flue (104) constructed in hand-made red ceramic, forming a trough on its underside with, individual 8¼" ceramic tiles on top. It was sooted on its interior, and ran north – south. This may have related to the earliest phase of under-floor heating for the glass house. This feature was overlain by a light-brown silty clay-sand (102) which was covered by a layer of 6" quarry tiles (105) to the west of the wall, which continued under the southern baulk.

A series of later features ran parallel to the realigned boundary wall. A cast-iron bar (106; 70mm thick) ran parallel and north – south adjacent to the boundary wall. At the western end of the trench was a second wall (109) that ran north – south across the trench. It was constructed in hand-made red brick in a very rough bond, with bricks of varying size (7½" – 9¼" x 4½" x 2½"). Parallel and to the eastern side of this was a line of grey slates set on-end (108). Further excavation was not undertaken as a live electricity cable ran across the trench. These features would appear to suggest that the realignment of the wall resulted in remodelling of the garden features.

The entire trench was covered by a layer of mid-grey brown silty sand (101), 0.35m deep and a topsoil layer of mid-brown silty sand (100).

Trench 2 (*Fig. 61, Plate 168, 169*)

Location and aims

Located adjacent to the north wall of the main garden through the western of two vineries. Orientated in a north – south direction, 1.2m by 6m in size. Aimed to investigate the northwestern vinery building, one of two.

Results

All trench depths are below 82.05m AOD.

This trench was excavated to a depth of 80.95m AOD and was ceased due to health and safety constraints. The vinery was defined by a substantial wall (215) at the southern extent of the trench. Aligned east – west and was 1'4" (0.42m) wide. It was constructed on of hand-made red brick (9" x 4½" x 3½") and was faced with large sandstone blocks 0.22m wide and 0.46m long. The northern wall of the vinery was formed by the bothy wall. Internally were a series of structures. An 'L' shaped corner of wall constructed in hand-made red brick (211; 9" x 4¼" x 3 1/8") revealed in plan only adjacent but not connected to the bothy wall. Centrally was a roughly-cut cylindrical sandstone pillar (210), 6" (0.15m) in diameter and revealed to a depth of 0.5m, with partial survival of iron or steel reinforcing rod in the centre. Extending from wall 215 but with no clear relationship was a north – south aligned wall constructed of hand-made red brick (218; 9" x 4½" x 3") in the Stretched bond.

These structures had been sealed by a sequential layers of silt rich in demolition rubble (207, 206, 205, 204, 209 and 217). These layers together were excavated to a depth of 0.6m. Towards the southern extent of the trench and abutting wall 215 was a rough surface constructed of a mix of broken pieces of brick, stone and slate set in a sandy silt matrix (214) revealed for a length of 1.2m.

Two parallel east – west walls were built above these layers. Wall 213 was constructed of hand-made red brick (8 ¾" x 4¼" x 3"), in the Stretcher bond, 11" (0.28m) wide and 10 ¼" (0.26m, 3 courses) high, and located 0.2m south of the bothy wall. Parallel to this and 0.8m further south, Wall 212 was constructed of hand-made red brick (9"x 4 ¼" x 3") 9" (0.23m) wide and 6 ½" (0.165m) high.

The trench was sealed by a layer (203/ 208) of dark brown sand, clay and silt. A concrete block (216) lay on top of this layer. As part of a recent backfilling episode plastic tarpaulin sheet had been laid over this and held down with a narrow layer (202, 201) of sand and gravel and overlaid by a layer of turf (200).

Trench 3 (*Fig. 62, Plate 170, 171*)

Location and aims

Located adjacent to the north wall of the main garden through the western of two vinery buildings. Orientated in a north – south direction, 1.2m by 5.95m in size. Aimed to investigate the north-western vinery building, two of two.

Results

All trench depths are below 82.10m AOD.

This trench revealed a series of parallel walls that defined the structure of the vinery. The bothie wall defined the northern edge of the vinery. It was constructed with an arched footing (309), mortared into the main wall in hand-made red brick (9½" x 4½" x 3¼") with broken bricks used to form the arch. The front wall of the vinery consisted of rough cut sandstone blocks (304; block size 800mm+) that overlay a foundation of hand-made red brick at least 1.2m deep. One of the blocks contained a single hole and associated arch in the front designed for the propagation of the vines.

The interior of the vinery was sub-divided by two walls; a hand-made red brick wall (305) of rough headers and stretchers, two courses (9"/ 0.23m) wide at least 1.2m deep and a hand-made red brick wall (308), three courses wide (1'4½"/ 0.42m) and at least 0.8m deep. Set

centrally was a free standing brick pier of hand-made red brick (306; brick size 8½" x 4½" x 2½") two courses wide.

Between these walls were a series of floor surfaces at depth. Set between walls 305 and 308 was a floor surface of rough hand-made brickwork (310; 9¼" x 4¾" x 2½") that sloped from north – south that appeared to represent the base of the pineapple pit at a depth of 82.10m AOD. This was overlain by a layer of dark-brown sandy-silt rubble (307) 0.40m deep that probably acted as drainage for the pine pit. Between walls 304 and 305 was a brick floor surface of hand-made red brick and crushed brick (312), 0.5m in length and located at a depth of 81.90m AOD. This was overlain by dark brown silty-clay sand (313) with some brick and charcoal flecks, part of the cultivation soil for the vinery pit. To the south of the vinery wall 304 was a hand-made brick rubble surface (311) located at a depth of 0.50m below the ground level.

Over all the whole trench was a layer of dark black-brown silty sand with brick fragments (302) designed to level the ground. This was overlain by a layer of light brown sand-gravel material (301) and a layer of dark-brown topsoil and turf (300).

Trench 4 (*Fig. 63, Plate 172, 173*)

Location and aims

Located to the south of the Gardener's House, orientated east – west, 1.2m x 10m in length to investigate the full width of the footprint. Aimed to investigate a conservatory measuring approximately 13m (N/S) by 10m (E/W).

Results

All trench depths are below 82.47m AOD.

The trench revealed a series of structures. These formed a symmetrical pattern orientated on either side of the central pathway leading to the Gardener's House in the middle of the trench.

The edges of the conservatory can be defined by two sandstone cill walls running north – south, one located on the eastern side of the trench (405) and the other on the western side of the trench (414). Both were constructed of sandstone blocks (maximum size 0.75m, 8" / 0.2m wide), with the western 414 containing a hole for a vine (as with Trench 3). Both had hand-made red brick foundations below the sandstone cill. The distance between the two walls was 29'2" (8.9m; 30'6" / 9.3m on its outer face) and corresponds with the historic width of the conservatory.

The conservatory was sub-divided internally by a central path that corresponds with the currently visible concrete path (409). This was supported by a wall (422) on its western side (eastern side not excavated) of hand-made red brick in the English bond (9" x 4½" x 3") with a line of sandstone capping stones (410). On either side of the central pathways internal sub-division of the space had been undertaken by two walls. On the western side was a substantial hand-made red brick wall (412), two courses wide (12", 0.31m; 9¼" x 4¼" x 3"). The gap between the outer wall and this one was 3'8" (1.12m). This was mirrored on the eastern side by hand-made red brick wall 407, likewise two courses wide (12", 0.31m; 9" x 4¼" x 3"), capped by a sandstone block, the distance between outer and inner walls being 3'5" (1.04m). Either side of these walls were low rough-built walls (418 and 406 respectively) of hand-made red brick. The purpose of the subsidiary walls was unclear. The base of two sandstone plinths

(411 and 408) were located between walls 412 and 407 mirroring each other, either side of the path. These were square sandstone blocks designed to support columns and subsequently the roof structure.

Between the walls the associated floor surfaces were revealed only on the western side of the trench, but it is assumed that they are echoed on the eastern side of the trench. The trench was excavated to a maximum depth of 0.9m, this was to the top of a brick floor surface (423) revealed in a sondage (1.1m x 0.5m) towards the western end of the trench. This was constructed of red hand-made bricks (9" x 3½"). At the western end of the trench floor 420 was revealed 0.8m below the current ground surface. This was constructed of red and engineering hand-made bricks (9" x 4"). This appeared to have a mortar clad gully (421) 0.08m wide built into the eastern side of the surface.

The trench was backfilled between walls 412 and 407 by an initial layer of brown grey silt brick rubble (417 on the western side), 0.20m deep that probably acted as drainage for beds in this location. This was subsequently overlain by a large of dark black rubble silt on the western side (426) and a layer of dark grey-brown silt sand (425) that was equivalent to 404 on the eastern side of the trench. These layers appear to have been associated with cultivation layers. To the west of wall 412 and overlying wall 418, and mirrored on the eastern side overlying wall 406 was a layer of light brown-red sand (416 and 403 respectively). The whole trench was overlain by a dark brown silt garden soil (404, 424) and a series of grey/ light brown sand-silt gravel layers (413 and 401/ 402) respectively, which was subsequently covered by a dark brown topsoil and turf layer (400).

Trench 5 (*Fig. 64, Plate 174, 175*)

Location and aims

Located adjacent to the north wall of the main garden through the eastern of two vinery buildings. Orientated in a north – south direction, 1.2m by 6m in size. Aimed to investigate the north-eastern vinery building.

Results

All trench depths are below 82.43m AOD.

This trench revealed a series of structures including floors, walls and piers. All of the walls were aligned east – west. The trench was excavated to a depth of 1.02m below the current ground surface.

Wall 508 was the southern extent of the vinery. This was 0.7m wide, revealed to a height of 0.82m, constructed in hand-made red brick (9¼" x 4½" x 3") capped by sandstone blocks (17¼"/ 0.44m high x 7 7/8"/ 0.2m wide) well dressed on the southern outer face and lime rendered on the inner face. The foundations on the northern side of the wall were stepped. Overlying the sandstone blocks were further courses of brick work, incorporating distinctive blue tiles within the build. The northern end of the vinery was defined by the bothie wall. This was abutted by foundation wall 503 constructed in hand-made red brick (9¼" x 4½" x 3") and rough-cut sandstone blocks with lime mortar. This was 17¼" (0.44m) wide, and revealed to a height of 1'9½" (0.85m) and length of 1.2m. It was supported by a 14¼" (0.36m) wide brick built pier, revealed to a height of seven courses (2' 0.6m high). From which sprang two brick built vaulted arches to the east and the west. The vinery was sub-divided by another wall (502) located 10'7½" (3.24m) from the southern wall (508). This was a built of hand-made red

brick (9" x 4½" x 3") and lime mortar in the English Garden Wall bond. This was 14" (0.35m) thick, and exposed to a height of 2'5½" (0.75m) and length of 1.2m. Floor surface 516, was constructed in the main of concrete with flag stones (23½"/ 0.6m wide) along the southern edge of the floor lay at a depth of 1.02m from ground level between this wall and the southern vinery wall (508).

A further phase of sub-division appears to have occurred as east – west wall 507 was built on top of this floor surface. It was constructed of hand-made red brick (9" x 4¼" x 3") and lime mortar, in the Stretcher bond, very narrow, one course wide (4¾"/ 0.12m) and 10 courses high (2'9½"/ 0.85m). At the very eastern end of this wall (in the west facing section) the bricks turned perpendicular to the main of the wall, and were stepped out at the base. A single hand-made red brick pier (505; 9" x 4½" x 3") was located towards the southern end of the trench and overlay floor 516. This was 13½" (0.34m) long, 9½" (0.24m) wide and 2' (0.6m) high (7 courses). Remnants of a render were evident on the north facing elevation. A similar brick built pier was evident in the east facing section, constructed of hand-made red brick (506; 9" x 4½" x 3"). This was 14" (0.36m) long; the upper 5 courses were exposed (12½"/ 0.32m). The south facing elevation was rendered.

Between these walls the trench was backfilled. Between walls 508 and 507 were rubble rich demolition layers overlying floor 516, (510 and 509), deposited up to 0.35m thick. Between walls 502 and 507 was a layer of clinker/ charcoal material (515). These had in turn been overlaid by successive layers of soil rich silt (511, 512 and 513), which together created a deposit of good quality garden soil 0.75m deep. The upper horizon of this deposit was rich in window glass, and some demolition rubble. Between walls 507 and 502 was a rubble layer (514) overlain by a worn compacted cinder surface (504). The whole trench was overlain by recently deposited sand and gravel (501) which was in general around 0.1m deep over the majority of the trench, however this deposit reached a depth of 0.85m at the northern end of the trench between walls 503 and 502. The area of the trench was sealed by a layer of turf (500).

Trench 6 (Fig. 65, Plate 176)

Location and aims

Located adjacent to the eastern wall of the main garden, orientated in an east – west direction, 1.2m by 2.5m in size. Aims were to investigate the eastern glass house.

Results

All trench depths are below 82.30m AOD.

The trench was excavated to a depth of 0.6m below the modern ground surface. The front (western) wall or foundations of the eastern (bounding) wall were not revealed within the trench. Within the trench were a series of walls. Wall 607, oriented north – south was constructed of hand-made red brick (9" x 4 ¼" x 3") and located close to the east end of the trench. It was 9¾" (0.25m) wide and the surviving upper 3 courses were revealed within the excavation (7"/ 0.18m high). Contemporary and to the west of this was an 'L' shaped wall (606), probably the outer north-eastern corner of the base of a frame stretching beyond the southern and western limitations of the trench. It was constructed of hand-made red brick (9" x 4½" x 3in the Stretcher bond. Abutting Wall 606 and internal to it was a southwest – northeast orientated wall (608) It was constructed of hand- made red brick (9" x 4½" x 3"),

and appeared to be a later internal dividing wall, although it is possible that it was a badly preserved floor surface.

These walls were overlain by layer 602 an orange-brown soil rich sandy silt, with demolition rubble throughout, at least 0.4m deep. Cutting this layer was foundation trench 603, the construction cut for wall 605, cut to a depth of 0.2m and the base was filled with cobbles compacted into clay (604). Wall foundation 605 abutted wall 606 to the north and consisted of hand-made red brick (9" x 4¼" x 3") with both lime and cement mortar in the construction. These features sealed by a layer of rich garden soil 0.2m deep (601) and a layer of turf (600).

Trench 7 (*Fig. 66, Plate 177, 178*)

Location and aims

Located across the northern path route and designed to investigate extant path routes of the northern walled garden reflect closely the arrangement shown in historical mapping in particular the survival of former path surfaces/edging etc. Orientated north-south, 4m by 1.2m

Results

All trench depths are below 81.92m AOD.

The trench was sampled by a long section with deeper excavation to the south and north. The trench was excavated to a depth of 1.25m below the current ground level.

The natural subsoil consisted of dark red-brown hard sand and gravel overlaid by a layer of brown sandy silt (710), 0.45m deep with a lens of crushed mortar northern side of the trench. Overlying this was a layer 0.3m deep of burnt soil, with large pieces of burnt coal, brick and stone throughout (705). It was certainly preceded by an early path 10'2" (3.1m) wide and 0.35m deep, constructed with a base of large cobbles and bricks (706) overlaid by a layer of compacted gravel (707) that formed a camber for the path surface. The upper level of layer 710 acted as the cultivation horizon associated with the use of this path, and dipped on either side of the path to form rudimentary drainage from the path. This path was overlaid on both the north and south sides by a layer of buried garden soil 0.22m deep (709).

A second path construction overlaid the earlier one (703 and 704) together 10'6" (3.2m) wide and 0.4m deep. The path was constructed with a lower bed of large cobbles compacted in clay (704) overlaid by compacted pea gravel upper surface (703), again creating a camber on the path surface. Again the upper horizon of 709 acted as the cultivation level associated with this path with a drainage channel either side.

The current cultivation soil layer (708) 0.22m deep overlay this, with current path construction made of a bed of crushed compacted rubble (702) under a layer of chipped stone path surface (700), together forming a path over 4m wide and up to 0.3m deep above. On the northern side of the trench this path surface is partially overlaid by turf (701).

Trench 8 (*Fig. 67, Plate 179*)

Location and aims

Located on the northeastern exterior corner of the annex garden. Designed to investigate a range of structures abutting the exterior eastern wall of the annex garden. Orientated north – south and 1.2m by 3m.

Results

All trench depths are below 82.88m AOD.

The trench was excavated to only a shallow depth of less than c 0.2m. The remains of a brick vault were uncovered (800). The brick vault was constructed in hand-made red, fire and engineering brick (9" x 3" x 3"), orientated north – south and abutting the north – south garden wall of the eastern annex. The vault had collapsed at its northern edge creating a void. The northern edge of the vault was formed by an east – west orientated wall (801) constructed in hand-made red brick (9" x 4" x 3").

To the north of the vault wall 801 the soil was light brown sandy silt (803) that would appear to represent redeposited material backfilled against the side of the vault during construction. The void between the two elements of the vault was filled with loose brick rubble and slate back-fill (804). The vault itself was covered by a shallow layer of humic topsoil containing leaf litter (802).

Trench 9 (*Fig. 67, Plate 180*)

Location and aims

Located on the southeastern exterior corner of the annex garden. Designed to investigate a range of structures abutting the exterior eastern wall of the annex garden. Orientated north – south and 1.2m by 5m.

Results

All trench depths are below 83.33m AOD.

The trench was excavated to a depth of 1.2m prior to completion due to health and safety reasons. The eastern wall (903) of the eastern annex garden ran north – south along the western edge of the trench. A hand-made red brick wall (902; 9¾" x 4¼" x 2¾") abutted the annex wall and may have been part of the original flue. This was subsequently adapted by a wall and vault (901) and an equivalent L-shaped wall (904). These were constructed in hand-made red and fire brick (9½" x 4¼" x 3"). These formed the exterior wall of a flue that continued through a semi-circular vaulted opening in the wall (903) of the eastern annex garden that probably formed part of the boiler mechanism.

The whole of the trench had been previously excavated in the 1980s, and had been subsequently backfilled by a mid-black silt-sand and rubble fill (900), 1.20m in depth.

Trench 10 (*Fig. 68, Plate 181*)

Location and aims

Located on the eastern arm of the ha-ha across the line and designed to investigate its manner of construction and relationship to natural soil horizons. Orientated east – west, 1.2m in width by 3m in length.

Results

All trench depths are below 86.00m AOD.

The natural Mercia Mudstone natural appeared as a horizon of compact dark red-brown clay (1003). This was cut by an asymmetric ditch (1006) 0.45m in depth that formed the eastern side of the ha-ha. The foundation trench for the wall of the ha-ha was cut into the base of the ditch. The ha-ha wall (1004) was constructed of ashlar sandstone blocks (block size 0.2-0.8m), stretcher dry-stone bonded together, surviving to five courses in height (1.3m).

A construction back-fill covered the foundation trench of brown sand-silt with redeposited natural clay lenses (1005). The base of the ditch was overlain by a brown sand-silt (1002) that formed a buried humic layer 0.2m deep. On top of this had been lain a compact layer of light grey-white gravel (1001) delineated by wood planks that formed the edges of a former path line installed in the 1990s. A subsequent humic topsoil layer of semi-decomposed leaf litter (1000) had formed over the top of the path.

Trench 11 (*Fig. 69, Plate 182*)

Location and aims

Located to the south of the walled garden and designed to investigate the Apricot House which was approximately 30m long by 3m wide. Orientated north - south, 1.2m wide by 3m long.

Results

All trench depths are below 82.68m AOD.

The base of the trench was reached at a depth of 82.05m AOD. This was formed by an unexcavated layer of small stones and brick rubble cement (1103) that formed the former base of the Apricot House.

The northern wall of the Apricot House consisted of the southern wall of the Walled Garden. This had a foundation of green-white sandstone blocks (1104) located at a depth of 0.25m below the surface. The southern wall of the Apricot House was not located but appeared to have been replaced by a brick pier (1108) of hand-made red brick in stretcher bond (9" x 4" x 3"). The pier was 9¾" (0.25m) wide and 15¾" (0.4m) in height and continued under the section, but was unconnected to a wall and appeared to be free-standing. A second hand-made brick structure (1107; 9¼" x 4" x 3") survived to a height of 5 courses (15¾"/ 0.4m) in the western baulk section. The function of this structure was not clear but suggested it may have been part of the sub-division or bedding process involved with the Apricot House.

Overlying the cement floor of the trench was a surface made of brick rubble (1102) arranged, in both neat courses and randomly. This appeared to form a base to the Apricot House. Set within the brick surface was a north – south aligned circular ceramic drain (1105; 100mm in width). The affect of the surface and drain appeared to be alteration to allow the drainage of the Apricot House.

The brick surface was overlain by a layer of dark grey-brown silt-sand clay (1101) 0.27m in depth. At the northern end a thin layer of turf survived (1100), whilst the southern end of the trench was covered by a compact light grey gravel layer (1106) that formed a modern track.

Trench 12 (*Fig. 70, Plate 183*)

Location and aims

Located at the southern edge of the southern Walled Garden. Aimed to investigate the survival of former path routes within the annex. Orientated north – south, 1.8m in width by 3m in length.

Results

All trench depths are below 83.16m AOD.

The trench was excavated to a depth of 78.77m AOD. The central section of the trench remained unexcavated as a service run was identified in the centre of the trench. The red-brown clay natural (1208/ 1211) was located at a depth of 0.3m. It was directly overlain at the southern end of the trench by a shallow layer of crushed brick and mortar with charcoal inclusions (1210) and a red-brown sand and pebble layer (1209) that formed the make-up layer for a path surface (full width unknown).

Overlying this was a layer of dark brown clay-silt with small stone inclusions (1205/ 1207). The formation of a later path layer of light brown-orange sandy silt rubble (1203/ 1204), 0.08m in depth overlay this. It had been cut by a cable trench (1212) filled with red clay (1206/ 1213). The trench was sealed by a light brown sand and rubble hogging layer (1201, 1202) that formed the modern pathway, overlain by a shallow layer of light brown silt sand topsoil (1200).

Trench 13 (*Fig. 71, Plate 184*)

Location and aims

Located at the northern edge of the southern annex. Aimed to investigate the survival of former path routes within the annex. Orientated north – south, 1.8m in width by 3m in length.

Results

All trench depths are below 82.94m AOD.

The trench was excavated to a depth of 82.08m AOD where the red-brown clay natural was encountered (1305). The natural was directly overlain by a compact rubble clay layer, 1.55m wide, lined on either side with hand-made bricks that formed a path (1303), 7'10" (2.4m) wide. The path was overlain by a dark-brown clay layer (1302/ 1304), 0.15m thick. This was

overlain by a make-up of light-brown sand gravel that formed a formation layer (1301), that was subsequently overlain by mid-brown sand silt topsoil (1300).

Trench 14 (*Fig. 72, Plate 185*)

Location and aims

Located on the northern arm of the ha-ha across the line and designed to investigate its manner of construction and relationship to natural soil horizons. Orientated southeast – northwest, 1.2m in width by 3m in length.

Results

All trench depths are below 81.06m AOD.

The natural red-orange sand gravel natural (1407) was cut by the asymmetric ditch [1403] of the ha-ha that sloped gently from northwest to southeast. The retaining wall of the ha-ha was located on the southwestern side of the trench and was constructed in light brown sandstone ashlar blocks (1405). The wall survived to a height of 1.2m and four courses of stonework. A pipe trench with a red ceramic pipe at the base of the ha-ha ditch (1406), prevented full excavation and was presumed to provide drainage for the ha-ha.

The ha-ha ditch was filled with a layer of brown sandy silt (1402) 0.45m deep. This was overlain by a shallow layer of chipped stone and brick rubble retained by wooden planks (1401) that formed the recently inserted pathway set in the base of the ha-ha. Located on the slope of the ditch and aligned along the line of the ditch was a single sandstone built step, filled to the rear with brick rubble (1404). The step was 0.3m (1') in height and 0.83m (2'8") in width. It appeared this was a modern addition as part of the pathway. The trench was covered by a layer of dark brown humic topsoil and leaf litter (1400).

Test pit 15 (*Fig. 69, Plate 186*)

Location and aims

The excavation of a small (1m x 1.2m) sondage adjacent to southern bounding wall of the walled garden to complete the cross-section investigation of this feature on the opposite side to Trench 11.

Results

All trench depths are below 82.85m AOD.

The test pit was dug adjacent to the southern garden wall of the walled garden. The wall was constructed in hand-made red brick in a varied bond (1500; 9¼" x 4½" x 3¼"), with a single course of stepped footings for the wall encountered at a depth of 82.45m AOD.

The garden was backfilled with a buried garden soil of brown humic sand-silt layer with mortar and charcoal flecks (1502), at least 0.2m deep that could be differentiated from a later imported dark brown humic sand silt garden soil (1501) 0.2m deep.

Test pit 16 (*Fig. 73, Plate 187*)

Location and aims

The excavation of a small (1m x 1.2m) sondage adjacent to northern bounding wall of the eastern annex to complete the 'cross-section' of the annex garden.

Results

All trenches depths are below 82.80m AOD.

The test pit was dug adjacent to the northern side of the northern wall of the eastern annex garden. The northern wall was constructed in hand-made red brick in the stretcher bond (1603; 9" x 4½" x 3"). The wall was constructed into a layer of light red-brown clay-silt (1602) but no foundation cut could be differentiated as a pipe trench (1604) containing a ceramic pipe ran along the northern edge of the wall east – west.

The pipe trench was overlain by a layer of mid-brown sand clay-silt (1601), 0.2m deep and brown sand-silt topsoil (1600), 0.2m deep.

Trench 17 (*Fig. 73, Plate 188*)

Location and aims

Located to the south of the annex garden and designed to investigate the Nectarine House and also complete the cross-section of the eastern annex. Orientated north – south, 1.2m wide by 3m long.

Results

All trench depths are below 83.08m AOD.

The trench was located to the south of the southern wall of the annex garden. The southern wall of the annex garden was constructed in hand-made red brick in the stretcher bond (1702; 9" x 4½" x 3"). At the southern end of the trench was the cill wall for the southern side of the nectarine house; constructed in hand-made red brick in an unknown bond (1703; 9" x 4½" x 3") and surviving to a height of 2'6" (0.76m), three courses (13½"/ 0.34m), and two courses (9"/ 0.23m) wide. The wall had begun to collapse on its southern side.

Between the two walls was a fill of brown sand silt material (1701), 0.3m deep. Overlying this and only visible in the western baulk, was a rough built brick structure (1704) that continued to the west, 1.2m wide (north – south), its full length not excavated. It was constructed in hand-made red brick (9" x 4½" x 3") and survived to a height of two courses. Overlying the whole of the trench was a dark brown humic-silt garden soil (1700) that had been improved by ash.

Trench 18 (*Fig. 74, Plate 189*)

Location

Trench to the west of the walled garden to investigate the nature of the west slip and the location of the bounding wall shown on historic plans. Orientated southeast – northwest, 7m long by 1m wide.

Results

All trench depths are below 82.39m AOD.

The red-brown clay silt containing brick rubble (1802) was encountered at a depth of 0.4m below the ground level, in a n excavated slot. An east – west orientated hand-made red brick wall, in English Garden Wall bond (1803; 9" x 4½" x 3") was cut through this layer. It was exposed to a depth of three courses (10¼"/ 0.26m) and was three courses in width. It was unclear if this related to the return of the north south slip wall or related to an alternative structure in this location.

To the northwest of this was a grey gravel path surface (1804) that was c 1.6m in width (east – west) and orientated north – south. This was overlain by a dark brown sand silt layer (1801), 0.15m deep and a humic topsoil of semi-decomposed leaf litter (1800).

Test pit 19 (*Fig. 75, Plate 190*)

Location and aims

Located on the western side of the walled garden, one of two with Test pit 22 designed to investigate the edge of the pathway. 1m by 0.8m in size.

Results

All trench depths are below 82.31m AOD.

The formation level of the original path consisted of a very compact red-orange sand gravel (1904) that sloped east – west. This was overlain by a dark brown sand-silt garden soil (1902) to the west of the test pit that survived to a depth of 0.2m. The 21st-century grey gravel path overlay the trench (1903), with a turf layer (1901) to the west.

Test pit 20 (*Fig. 75, Plate 191*)

Location and aims

Located on the east – west path through the centre of the walled garden, one of two with Test pit 21 designed to investigate the edge of the pathway. 1m by 0.8m in size.

Results

All trench depths are below 82.40m AOD.

The earliest layer excavated was light red-brown sandy silt gravel (2004) that formed a build-up layer for the former path. This was overlain by a dark brown silt clay layer (2003), which in turn was overlain by a crushed brick and clinker surface (2001) that extended 0.30m from the southern baulk of the test pit. Two upright tiles delineated the extent of the path on its northern edge. The path was overlain by a layer of compact grey gravel (2000) that formed the 21st-century path. To the north of this was a dark brown humic silt garden soil (2002) that formed the garden bed.

Test pit 21 (*Fig. 75, Plate 192*)

Location and aims

Located on the east – west path through the centre of the walled garden, one of two with Test pit 20 designed to investigate the edge of the pathway. 1m by 0.8m in size.

Results

All trench depths are below 82.41m AOD.

The earliest layer excavated was a layer of cobbles and bricks (2103) that ran in a line and delineated the southern edge of the former base of the path. To the north of this was a layer of light brown compact gravel (2102) that formed the base of the path. Overlying this and continuing for 0.50m across the test pit until it abutted the line of the cobbles and brick 2103, was a shallow layer of compact light red-orange crushed brick (2101) that appeared to relate to the former path. This was overlain by a layer of grey gravel (2100) relating to the 21st century resurfacing of the path. To the south of the test pit was a layer of dark brown humic garden soil (2104) associated with the garden bed.

Test pit 22 (*Fig. 75, Plate 193*)

Location and aims

Located on the western side of the walled garden, one of two with Test pit 19 designed to investigate the edge of the pathway. 1m by 0.8m in size.

Results

All trench depths are below 82.18m AOD.

The earliest context excavated in the test pit was a compact red-orange gravel (2202), base of the path, that sloped from west to east with the camber. This was overlain by a layer of red-brown silt subsoil (2205) on the eastern side of the test pit. Overlying this on the western side of the path was a narrow single course of crushed brick and hand-made bricks (2203) that delineated the former line of the path. This was overlain by a dark brown garden soil (2204) on the eastern side and grey gravel (2201) of the 21st century path surface on the western side.

Trench 23 (*Fig. 76, Plate 194, 195*)*Location and aims*

Located in the centre of the southern walled garden through a c.4m high spoil heap that currently obscured the southern dipping pool. Aimed to investigate the dipping pool within the south walled garden mirroring that within the north garden. Orientated north – south and 1.8m by 4m trench.

Results

All trench depths are below 83.40m AOD at the southern end of the trench and 85.64m AOD at the northern end of the trench (top of spoil heap).

The trench was excavated to a depth of c 81.70m AOD. The curved wall (2303) of the dipping pool was located as a single course of hand-made red bricks, in a curvi-linear line orientated approximately southwest to northeast. The wall was overlain by a deep layer of dark brown-black clay-sand silt containing brick rubble (2302), at least 1.70m deep. In turn this was overlain by a substantially built-up mound of yellow-brown sand-gravel hogging material (2301) to a depth of c 2.0m at the northern end of the trench and c 0.5m at the southern end of the trench.

APPENDIX D: The Finds

Pottery Type Series

The pottery was examined macroscopically and occasional sherds were examined under a 20x bifocal microscope. The pottery has been quantified by sherd count, weight, minimum number of vessels represented (m.v), minimum number of bases represented (m.b), minimum number of handles represented (m.h).

There were a total of 75 sherds weighing 1089g, with a m.v 14, m.b 20 and m.h 0. There was also a spout present. The assemblage is mainly post medieval in date with occasional late medieval sherds and some flower pot fragments.

Medieval Wares (14th-16th Centuries)

Grittyware (GrittyW)

Two sherds of grittyware were recovered from 302. The fabric has a buff colour core and margins with abundant semi-angular quartz inclusions. The exterior surface is a light purplish brown and the interior surface is light brownish orange in colour. The body sherds join on what looks like a relatively fresh break and are quite abraded.

Cistercian Ware (CistW)

There were two small fragments of Cistercian ware, both body fragments and both slightly abraded. The sherd from 709 was of a much darker fabric than 1402.

Midlands Purple (MP)

Two base sherds of midlands purple were recovered from 1402. One has a dark purplish grey core with a light brownish orange inner margin and surface whilst the exterior surface is a dark brownish purple colour. The other sherd has a mid purplish brown fabric with dark brownish purple surfaces. Both were unglazed and have occasional mica fleck inclusions; neither were particularly abraded.

Post Medieval (18th-19th Centuries)

Brown Salt Glazed Stoneware (BSGSW)

There were two body sherds of brown salt glazed stoneware, one from 208 and the other from 1402. The sherd from 1402 had a very dark brown glaze and a white fabric with rounded quartz and red-iron stone inclusions. The 208 sherd had the same inclusions but had a buff-coloured fabric.

Creamware (CreamW)

Four creamware sherds were found from 302, 900 and 1402. 302 contained an undecorated footring base, 900 contained an incised decorated teapot spout and 1402 contained a black transfer print bowl fragment. Creamware has a specific manufacture date of 1760-1820.

Coarseware (CW)

There were 28 sherds of the iron rich coarseware fabric. The CW forms were all flowerpot.

Industrial Slipware (ISW)

There were 13 sherds of industrial slipware present in the assemblage. Nine were from the same vessel and had a light yellowish brown fabric with black slip bands applied which then had a thinner white slip band in the centre (1402). From this same context were three white

body sherds with applied light blue slip banding of varying thickness. The final piece of ISW was also from 1402 and was a creamware body with applied dark brown and yellow ochre marbled slip, very similar to a mug shown by Barker (2007 168).

Pearlware (Pearlw)

There were 12 sherds of pearlware found in three contexts (203, 302, 1402). Eight plates were found and two bowls were found. The other 4 sherds were of an unidentifiable form.

Porcelain Type (Porc type)

There were five sherds of this type found from 302 and 1402. They were either a porcelain or a bone china fabric. The glaze was in very good condition and the fragments were not at all abraded. All in this fabric group were undecorated and only one was of an identifiable form, a plate (1402).

White Earthenware (WEW)

Five sherds of this fabric were found, from 302, 313 and 1402. These were undecorated and two were plates, the others unidentifiable.

Other Finds

StratNo	Tile: ceramic		Brick: ceramic		Building stone		Mortar		Clay pipe		Other Ceramic	
	Count	Weight	Count	Weight	Count	Weight	Count	Weight	Count	Weight	Count	Weight
203									1	<1		
208												
302	5	418	5	1007	1	49	1	104			1	22
313	2	58					2	44				
709	2	76										
710	2	61										
900												
1002												
1101	3	203										
1402					1	116						
Total	14	816	5	1007	2	165	3	148	1	0	1	22

Table 4: Quantification of building materials and other ceramics

StratNo	Iron nails		Other iron		Other vessel glass		Window glass		Animal Bone		Shell		Misc	
	Count	Weight	Count	Weight	Count	Weight	Count	Weight	Count	Weight	Count	Weight	Count	Weight
203														
208							2	10	3	5	5	51		
302	2	101			1	4	4	39			1	1		
313	1	9			1	3				8				
709														
710														
900			2	972	3	128				329			1	7
1002			7	148										
1101	1	14			1	4	2	4					1	<1
1402														
Total	4	124	9	1120	6	139	8	53	3	342	6	52	2	7

Table 5: Quantification of metal, glass, bone, shell and miscellaneous items.

APPENDIX E: List of Contexts

Strat no	Strat type	TP no	Type	Description
100	Context	1	Layer	Medium brown silty clay sand layer/topsoil
101	Context	1	Layer	Mid greyish brown silty clay sand layer
102	Context	1	Layer	Light brown silty clay sand layer
103	Masonry	1	Wall	Red brick NE-SW wall
104	Masonry	1	Wall	Red brick N-S wall
105	Context	1	Layer	Reddish orange tile layer
106	Context	1	Bar	Iron bar running N-S
107	Masonry	1	Wall	Red brick NE-SW wall
108	Context	1	Layer	Grey slate layer
109	Masonry	1	Wall	Red brick N-S wall
200	Context	2	Layer	Topsoil/turf
201	Context	2	Layer	Hogging layer
202	Context	2	Layer	sand gravel layer
203	Context	2	Layer	dark brown
204	Context	2	Layer	Mid red brown layer
205	Context	2	Layer	dark brown black silty sand
206	Context	2	Layer	Mid red brown layer
207	Context	2	Layer	mid brown white grey layer
208	Context	2	Layer	dark brown layer
209	Context	2	Layer	mid red brown clay sand layer
210	Masonry	2	Pillar	Stone pillar
211	Masonry	2	Wall	L-shaped wall
212	Masonry	2	Wall	E-W 2 course wall
213	Masonry	2	Wall	E-W 2 course wall
214	Masonry	2	Floor	Slate/brick floor?
215	Masonry	2	Wall	Outside E-W Wall
216	Masonry	2	Block	Concrete block
217	Context	2	Layer	Rubble layer
218	Masonry	2	Wall	N-S wall
300	Context	3	Layer	Dark brown silty sand topsoil and turf
301	Context	3	Layer	Light brown sandy gravel 'hogging' layer
302	Context	3	Layer	Dark brown silty sand layer
303	Context	3	Deposit	Yellow sand deposit
304	Masonry	3	Wall	Limestone wall
305	Masonry	3	Wall	Red brick E-W wall

Strat no	Strat type	TP no	Type	Description
306	Masonry	3	Pillar	Red brick pillar
307	Context	3	Layer	Dark brown sandy silty clay layer
308	Masonry	3	Wall	Red brick E-W wall
309	Masonry	3	Wall	Red brick E-W wall
310	Masonry	3	Floor	Red brick floor
311	Masonry	3	Floor	Red brick floor
312	Masonry	3	Wall	Red brick N-S wall
313	Context	3	Fill	Dark brown silty clayey sand fill of 314
314	Cut	3	Pit	U-shaped pit filled by 313
400	Context	4	Layer	Turf
401	Context	4	Layer	Sand and cobble layer
402	Context	4	Layer	Grey sandy silt and pebble
403	Context	4	Layer	Pink brown sand
404	Context	4	Layer	Soil
405	Masonry	4	Wall	Stone wall
406	Masonry	4	Wall	Brick wall
407	Masonry	4	Wall	Brick and stone wall
408	Masonry	4	Plinth	Stone plinth
409	Masonry	4	Plinth	Concrete plinth
410	Masonry	4	Curb	Stone edging
411	Masonry	4	Plinth	Stone plinth
412	Masonry	4	Wall	Brick wall
413	Masonry	4	Layer	Gravel layer
414	Masonry	4	Layer	Soil layer
415	Masonry	4	Layer	Soil layer
416	Context	4	Layer	Sand layer, equivalent to 403
417	Context	4	Layer	unexcavated rubble layer
418	Masonry	4	Wall	Wall
419	Context	4	Layer	Layer over 420 and 421
420	Masonry	4	Floor	Brick floor
421	Masonry	4	Floor	Mortar surface
422	Masonry	4	Wall	Wall
423	Masonry	4	Floor	Brick surface
424	Context	4	Fill	Dark silt fill
425	Context	4	Fill	Silt fill of trench
500	Context	5	Layer	Turf

Strat no	Strat type	TP no	Type	Description
501	Context	5	Layer	Sand and gravel
502	Masonry	5	Wall	Wall
503	Masonry	5	Wall	Wall and arch
504	Masonry	5	Floor	Floor
505	Masonry	5	Plinth	Brick plinth
506	Masonry	5	Plinth	Brick plinth
507	Masonry	5	Wall	Wall
508	Masonry	5	Wall	Wall
509	Context	5	Layer	Brick/rubble layer
510	Context	5	Layer	Brick/rubble layer
511	Context	5	Layer	Soil layer
512	Context	5	Layer	Soil layer
513	Context	5	Layer	Soil layer
514	Context	5	Layer	Brick/rubble layer
515	Context	5	Layer	Burnt coal layer
516	Masonry	5	Floor	Floor
600	Context	6	Layer	Turf
601	Context	6	Layer	Topsoil
602	Context	6	Layer	Layer with rubble
603	Cut	6	F-trench	Foundation trench cut filled by 604 and 605
604	Context	6	Fill	Construction backfill of 603
605	Context	6	Fill	Construction backfill of 603
606	Masonry	6	Structure	Greenhouse structure
607	Masonry	6	Wall	wall
608	Masonry	6	Floor	Floor
700	Context	7	Layer	Gravel path layer
701	Context	7	Layer	grass
702	Context	7	Layer	Gravel path layer
703	Context	7	Layer	Gravel path layer
704	Context	7	Layer	Gravel path layer
705	Context	7	Layer	Burnt layer
706	Context	7	Layer	Stone layer
707	Context	7	Layer	Gravel layer
708	Context	7	Layer	Garden soil layer
709	Context	7	Layer	Clay rich soil layer
710	Context	7	Layer	Buried soil layer

Strat no	Strat type	TP no	Type	Description
711	Context	7	Layer	Possible natural layer
800	Masonry	8	Roof	Vaulted rood
801	Masonry	8	Wall	Wall
802	Context	8	Mound	Topsoil/ leaf mound
803	Context	8	Layer	Top of layer
804	Context	8	Layer	Rubble collapse
900	Context	9	Layer	Shrub roof topsoil
901	Masonry	9	Roof	Vaulted roof
902	Masonry	9	Wall	E-W wall attached to 903
903	Masonry	9	Wall	E Annex garden wall N - S
904	Masonry	9	Wall	L-Shaped wall
1000	Context	10	Layer	Leaf litter
1001	Context	10	Layer	Stone path
1002	Context	10	Layer	Sandy clay-silt layer
1003	Context	10	Layer	Compact clay
1004	Masonry	10	Wall	Stone wall
1005	Context	10	Fill	Construction backfill
1006	Cut	10	Cut	Cut-off trench + Ha Ha
1100	Context	11	Layer	Thin layer of turf
1101	Context	11	Layer	Layer of cultivation soil
1102	Masonry	11	Floor	Brick floor/surface
1103	Masonry	11	Floor	Cement floor surface
1104	Context	11	Footing	Stone wall footings
1105	Masonry	11	Drain	Drain
1106	Masonry	11	Path	Path
1107	Masonry	11	Plinth	Brick plinth (large)
1108	Masonry	11	Plinth	Brick plinth (small)
1200	Context	12	Layer	Topsoil
1201	Context	12	Layer	Beige sand with small pebbles
1202	Context	12	Layer	Medium brown sandy soil
1203	Context	12	Layer	Beige and orange sandy silt rubble
1204	Context	12	Layer	Beige and orange sandy silt rubble
1205	Context	12	Layer	Dark brown clay
1206	Context	12	Layer	Red clay
1207	Context	12	Layer	Red-brown sand and pebbles
1208	Context	12	Layer	Red clay

Strat no	Strat type	TP no	Type	Description
1209	Context	12	Layer	Red-brown sand and pebble
1210	Context	12	Layer	Brick layer
1211	Context	12	Layer	Red clay
1212	Cut	12	Cut	Cut of baulk for cable
1213	Context	12	Fill	Fill of baulk red brown clay
1300	Context	13	Layer	Topsoil
1301	Context	13	Layer	Light brown/beige sand
1302	Context	13	Layer	Bark brown clay
1303	Context	13	Layer	Pathway
1304	Context	13	Layer	Dark brown clay
1305	Context	13	Layer	Red-brown clay
1400	Context	14	Layer	Leaf litter
1401	Context	14	Layer	Chipped stone path
1402	Context	14	Fill	Fill Ha Ha
1403	Cut	14	Cut	Cut of Ha Ha
1404	Masonry	14	Steps	Steps
1405	Masonry	14	Wall	Wall of Ha Ha
1406	Context	14	Pipe	Pipe
1407	Context	14	Layer	Natural
1500	Masonry	15	Wall	Wall and foundation
1501	Context	15	Layer	Garden soil
1502	Context	15	Layer	Garden soil
1600	Context	16	Layer	Roots/ topsoil
1601	Context	16	Layer	Soil layer
1602	Context	16	Layer	Compact clay silt
1603	Masonry	16	Wall	Wall
1604	Context	16	Pipe	Pipe
1700	Context	17	Layer	Topsoil
1701	Context	17	Layer	Topsoil
1702	Masonry	17	Wall	Wall
1703	Masonry	17	Wall	Wall
1704	Masonry	17	Wall	Wall
1800	Context	18	Layer	Topsoil
1801	Context	18	Layer	Subsoil
1802	Context	18	Layer	Subsoil
1803	Masonry	18	Wall	Wall

Strat no	Strat type	TP no	Type	Description
1804	Masonry	18	Path	Path
1901	Context	19	Layer	Dark brown layer
1902	Context	19	Layer	Dark brown sand silt layer
1903	Context	19	Layer	Grey gravel layer
1904	Context	19	Layer	Red orange sand gravel layer
2000	Context	20	Layer	Grey gravel layer
2001	Context	20	Layer	Crushed brick and clinker layer
2002	Context	20	Layer	Dark brown humic topsoil
2003	Context	20	Layer	Dark brown grey silt clay layer
2004	Context	20	Layer	Pink brown sandy silt layer
2100	Context	21	Layer	Grey gravel layer
2101	Context	21	Layer	Pink orange crushed brick layer
2102	Context	21	Layer	Beige brown gravel layer/path
2103	Context	21	Layer	Cobbles and brick base fo path 2102
2104	Context	21	Layer	Dark brown humic clay silt garden soil
2201	Context	22	Layer	Grey brown gravel top of path
2202	Context	22	Layer	Red orange gravel layer
2203	Masonry	22	Path	N - S red brick path
2204	Context	22	Layer	Dark brown humic clay silt
2205	Context	22	Layer	Red-brown silt layer
2301	Context	23	Layer	Yellow orange sand gravel layer
2302	Context	23	Layer	Dark brown black clay sand silt layer
2303	Masonry	23	Wall	Red brick SW-NE curved wall

APPENDIX F – Results of 2005 Evaluation (*ref: Halsted, J 2005 An archaeological evaluation at Shugborough Park, Staffordshire, 2005, Birmingham Archaeology Unpub Rep No 1328*)

Trench 1

The trench was excavated parallel with the Sher Brook, and between this and the Walled Garden, in the location of the proposed visitor centre (Fig. 59). The trench measured 35m in length by 2m in width. The trench was, however, extended to form an L-shape at its northern extent (Fig. 78) in order to investigate specific features recorded on early maps of the area and to examine details of archaeological features in the trench observed after its initial strip. At the north-eastern extent of the trench a pit (1043;) was recorded cutting natural sand and gravel subsoil. The pit was circular in plan with a diameter greater than 1m. The feature had a concave profile and was recorded with a depth greater than 0.4m. A dark grey-brown-black sandy silt formed the lowest excavated fill of the pit, though this was not excavated fully due to the restricted confines of the trench. This fill was overlain by a grey-brown sandy silt (1045), 0.3m in depth, with frequent charcoal and small sub-rounded pebbles. The upper fill of the pit (1044) was made up of a dark grey-brown to black silt, 0.32m in depth, with frequent medium sized sub-rounded stones and occasional charcoal flecks. This context produced several prehistoric pot sherds including a body sherd with applied decoration (see below).

The fill of the pit was sealed by a layer of grey-brown sandy silt, 0.4m in depth, with small sub-rounded stones and charcoal flecks (1041; not illustrated). This layer produced post-medieval pot sherds dating to the 17th century (see below). The foundation of a sandstone wall (1042) appeared to be cut into this layer, since the sandstone foundation was recorded to the base of the layer, although a distinctive cut could not be discerned. The sandstone foundation was aligned north-south and appeared to be comprised of four courses of stone. Three courses of red brick (each brick measuring 3½" x 4½" x 9½") with lime mortar were laid on top of this sandstone wall (1030). A layer of orange-brown clay-silt (1040/ 1036), 0.25m in depth, butted against the brick wall on its western side, and this layer was in turn overlain by a layer of dark grey-brown/ black silt (1039; not illustrated) with brick fragments. A possible posthole (1047) was recorded 1.8m to the west of 1043. The feature was sub-rounded in plan with a vertical cut on its southern side, 0.36m in depth. The posthole was filled by a dark brown silty sand with frequent small subrounded stones (1048). No finds were recovered from the fill. The fill of the feature was sealed by layer 1041 (see above), which was in turn overlain by layer 1040/ 1036. These deposits were sealed by a linear deposit of brick rubble (1031), marking the eastern extent of a brick floor surface and building to the west.

The brick building measured 8m from east to west, and greater than 9m from north-south. The building was aligned upon the Park Road and the Sher Brook, running parallel in a north-south orientation, to its west. The majority of the building was represented by brick floor surfaces (1000, 1028, 1033, 1034, 1037, 1038). The floor surfaces had a number of contemporary drains, with drain cappings being flush with the floor surfaces (1020, 1021). Drain cap 1020 appeared to feed a pipe running southwards into a sump edged with sandstone blocks and lined with a metal barrel (1017). The southern extent of the building appears to be represented by the east-west wall (1022), which marks the southern extent of the brick floor surface (1000). This wall did not, however, extend as far as the barrel drain feature (1017), or the line of the building's western limit. Immediately to the south (0.5m) of wall 1022 a further wall (1007) was recorded on the same east-west alignment. This may represent a southern boundary.

The western extent of the building, parallel with the road and brook, is represented by wall 1024 in the north of the trench. This wall does not, however, extend along the length of

the building on its western side. This suggests that the frontage of this building was either open, or insubstantial. This is emphasised by the presence of an *in-situ* wooden post (1023) on the west side of the building frontage. It is possible that the western wall (1024), the east-west aligned wall 1027, and walls 1025 and 1026 in the northern area of the trench, represent a brick-built structure, with the area to the south of wall 1027 representing a covered yard surface, rather than a fully enclosed brick building. The eastern limit of the structure appears to be represented by a north-south aligned concentration of brick rubble (1031), marking the eastern extent of floor surface 1000. This rubble may represent the location of a disturbed wall.

The floor surface of the building appears to have been cut by later drainage features, with the east-west drain 1008 cutting brick floor surface 1000. Drain 1008 was filled by a dark brown silty sand with brick rubble and concrete fragments. Drain 1029 was orientated north-east to southwest and cut both floor surface 1028 and wall 1026, suggesting that it post dated the use of the building. To the south of the building, in the southern half of the trench, further drainage features were recorded. These features were tested by hand excavation to establish their character, but were not excavated further. The remainder of the trench revealed a dark orange brown silty clay with frequent small sub-rounded stones. This deposit was comparable to layers recorded overlying the pit in the north-east corner of Trench 1, and over which the building and walls were constructed in the northern part of the trench. All features in Trench 1 were sealed by a layer of hardcore and gravel (1049), forming the existing car park, c.0.2m in depth.

Prehistoric pottery by Ann Woodward

Six non-joining sherds from a single vessel were recovered from the upper fill (1044) of pit 1043 in Trench 1, in Shugborough Park, Staffs. All fragments are unabraded, and the breaks are fresh, but mainly ancient. One of the two larger sherds bears an applied horizontal cordon decorated with a row of fingertip impressions. The external surface is well smoothed with some traces of vertical finger smearing. The coarse and soft fabric contains inclusions of grog together with large angular pieces of a hard dark grey rock. The vessel belongs to the Deverel-Rimbury bucket urn tradition, dating from the Middle Bronze Age period (c.1400 to c.1000 cal BC). Vessels of this tradition have rarely been found in the west Midlands, and this example provides an important contribution to our knowledge of this period in the region.

Post-medieval pottery by Kirsty Nichol

A total of 40 sherds of pottery were recovered from the site. Most of the pottery was of late 19th – early 20th century date, although a few earlier sherds were also recovered. The earliest pottery recovered was from Trench 1 (1041). Three sherds of 17th century pottery were recovered, including a trailed slipware rim fragment and a blackware handle of a probable chocolate pot, as well as a very over-fired base fragment of what is probably Midlands purple ware. Two sherds of 18th century manganese mottled ware were also recovered, although these pieces were unstratified.

A large proportion of the rest of the pottery was identified as being sherds from late 19th or early 20th century flowerpots (1001 x 9, 1005 x 2, 1004 x 7, 1018 x 4). One of these sherds (Trench 1, 1001) was stamped with the letters [...]STON ST A[...] just below the rim. Four sherds of white or pale-coloured stoneware were also recovered from the site (1001 x 1, 1004 x 1, 1018 x 1, U/S x 1), as were three sherds of blue and white transfer-printed pottery (1004 x 2, 1018 x 1). All of these sherds were dated to the late 19th – early 20th century, as was a rim

fragment from a blackglazed coarseware vessel (3002) recovered from Trench 3. Three sherds from a transfer-printed cup that is likely to have come from a large dinner service are also likely to be of 19th century date.

Twentieth century pottery was represented by a sherd of coarse ware which was recovered from Trench 1 (1001), and a 20th century piece of porcelain which was unstratified.

Discussion

The presence of a pit containing well preserved Bronze Age ceramics, sealed and masked by later deposits, suggests that further contemporary features may remain undisturbed in the immediate vicinity. The presence of a layer of silty clay c.0.4m in depth overlying this feature suggests that similar deposits observed in the southern area of Trench 1 have the potential to mask further prehistoric features. The context of this pit is unknown, though its proximity (c. 17m) to the current stream channel to its west, may suggest that the pit represents a settlement node in close association with a water source. This interpretation is reinforced by the presence of charred cereal grains and a lack of cremated bone which may be expected if the pit was associated with a funerary monument. If so, this would represent a significant contribution to our knowledge of Bronze Age activity in a non-ceremonial or funerary context for this region (Halsted forthcoming). The presence of a ceremonial monument is, however, equally possible in the immediate vicinity, and ring-ditches of Bronze Age date are frequently identified on gravel geologies. Indeed, the confluence of rivers has been suggested to act as foci for ritual activity in this period and this has been demonstrated at Whitemoor Haye, Staffordshire (Hewson, forthcoming) and Catholme, Staffordshire (Bain *et al.* 2005). It may be significant therefore, that Shugborough Park is located to the south of the confluence of the Rivers Trent and Sow. A possible Bronze Age ring ditch represented by a cropmark (PRN 04612) has been identified from aerial photographs in fields to the north-west of Trench 1, though this has not been substantiated through excavation. Further comparable cropmark features suggested to be Bronze Age ring ditches have also been identified (PRN 04075) on aerial photographs to the south-east of the walled garden.

The building located in Trench 1 appears to date from the 19th century since a building in this location is present on the 1st edition Ordnance Survey map. It would appear from the ceramic assemblage recovered during the evaluation that the building continued in use into the twentieth century. It is possible that a brick built structure located in the northern area of the trench was associated with a covered yard surface, with a roof supported on timber uprights. The north-south wall located between this structure and the walled garden appears to represent a boundary between these two structures. The sandstone recorded underlying the brickwork of this wall appears to represent an integral part its foundations, rather than an earlier phase of occupation. However, earlier ceramics (dating to the 17th century) have also been recorded from the trench and may suggest an earlier focus of settlement in the vicinity.

Conclusions and recommendations

The evaluation at Shugborough has demonstrated the potential survival of archaeological deposits within the areas of proposed development. The presence of Bronze Age sherds from a pit in Trench 1, suggests that a cluster of activity of this date may be expected here. This is reinforced when compared with known late Neolithic and Bronze Age monument complexes at Whitemoor Haye (Coates 2002; Hewson forthcoming) and Catholme (Bain *et al.* 2005) in association with the River Trent and the fact that Middle Bronze Age cremations often focus upon earlier Bronze Age funerary monuments (Woodward 2000, 43). The Middle Bronze Age

date of the sherds from the pit adds to their significance, since activity of this date is less well recorded in the west Midlands. Their association with well-preserved charred plant remains also represents a valuable contribution to data from this period for the region.

The presence of a possible pit alignment at Shugborough can also be compared with those present at Whitemoor Haye. The pit alignments here have been suggested to have a significant relationship with earlier monument complexes and may serve to define earlier ceremonial landscapes, both here and at other sites in the West Midlands (Woodward, forthcoming). The dating of pit alignments is considered a significant research aim, emphasised in West Midlands Regional Research Framework documents (*ibid.*). The presence of a possible pit alignment and a Bronze Age pit may suggest that wider prehistoric activity is present within Shugborough Park. The presence of the Bronze Age pit, sealed beneath later deposits suggests that in the area of the visitor centre at least, prehistoric deposits may be well preserved.

Proposals for the mitigation of the development at Shugborough Park are subject to advice from Staffordshire County Council. However, in view of the well preserved nature of the prehistoric pit recorded in Trench 1, it is recommended that any development in the area between the walled garden and the Sher Brook is mitigated through a closer examination of the area in the form of archaeological excavation.