

# **THE TYWI GATEWAY PROJECT – BISHOP’S PARK, ABERGWILI THE WALLED GARDEN: ARCHAEOLOGICAL INVESTIGATION 2017**

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Prepared by DAT Archaeological Services  
For: Welsh Historic Gardens Trust  
(Carmarthenshire Branch)



ymddiriedolaeth archaeolegol



**DYFED ARCHAEOLOGICAL TRUST**

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BISHOP'S PARK, ABERGWILI  
THE WALLED GARDEN:  
ARCHAEOLOGICAL INVESTIGATION  
2017**

Gan / By

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**THE WALLED GARDEN:**  
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**SUMMARY**

*DAT Archaeological Services were commissioned by Tywi Gateway Trust to undertake an archaeological investigation of the walled garden within the Bishop’s Palace, Abergwili, Carmarthenshire.*

*It was proposed that with the assistance of volunteers, a programme of limited vegetation and soil clearance was undertaken to ascertain the survival of features such as the glasshouses that once stood within the walled garden.*

*The clearance was undertaken over two weeks by an enthusiastic team of volunteers supervised by two members of staff from DAT Archaeological Services. The clearance of vegetation and accumulated rubbish showed that the walls and floors of three glasshouses had survived generally intact. Clearing the vegetation and soil identified different phases of heating systems that supplied heat to the glasshouses.*

*It was clear that the glasshouses including their heating systems had been altered and adapted many times over the years.*

*The glasshouses had clearly been carefully dismantled in the past and very few identifiable fixtures and fittings were recovered, although one length of metal rod from Glasshouse 2 which is believed to come from a window opening mechanism was marked ‘Messenger & Co London’; evidence that the glasshouse could have been built by the prestigious manufacturer of glasshouses during the Victorian and Edwardian periods.*

*The investigations recorded that some below ground remains of the building known as the Orangery, built against the north wall, could still exist.*

*A large number of paths divided the walled garden into cultivation beds. The paths were constructed from bricks, old gravestones, re-used worked stone, slate slabs; any material that was locally readily available. However, the excavation of two test pits revealed earlier cambered ash paths once divided up the walled garden.*

*The majority of finds were modern and were a result of the dumping of rubbish within the walled garden in recent years. The little amount of pottery recovered was of 19th and 20th century date apart from, unsurprisingly, a very large number of broken ceramic flower pots.*

*A detailed topographic survey was carried out of the whole of the walled garden and its surrounding area, including the Bothy. A photographic survey of the Bothy building was undertaken after it had been cleared of a large amount of ivy. A photographic survey was also undertaken of the interior walls of the walled garden.*

*Recommendations for further work include targeted excavation of below ground remains of the Orangery, the possible boiler house for Glasshouses 2 & 3, and the hot wall heating systems, all of which it is hoped could lead to a better understanding of the walled garden’s development and incorporate opportunities for further community involvement.*

## **1. INTRODUCTION**

### **1.1 Project Commission**

- 1.1.1 In June 2016 DAT Archaeological Services (the contracting arm of Dyfed Archaeological Trust) completed the topographic surveys of the following elements of the Bishop's Park at Abergwili, Carmarthen: The Bishop's Garden; The Bishop's Meadow; The Walled Garden; and the causeway and island.
- 1.1.2 Following this successful work Michael Norman, on behalf of the Welsh Historic Gardens Trust (WHGT), requested DAT Archaeological Services to produce a further scheme of archaeological works within the areas of the Walled Garden and the Bothy at the Bishop's Park, Abergwili, Carmarthen.
- 1.1.3 A written scheme of investigation outlining the methodology through which DAT Archaeological Services (in conjunction with volunteers) would undertake the proposed archaeological investigative works was produced.
- 1.1.4 The aim of the works was to provide information on the character and significance of surviving above and below ground archaeological remains within the Walled Garden. The information gleaned from the remains will be useful in informing future restoration proposals. The scope of any further archaeological mitigation necessary can be determined once proposals for the walled garden are confirmed.

### **1.2 Scope of the project**

- 1.2.1 The aims of the project were:

#### ***Walled Garden***

- to undertake with the assistance of volunteers, a programme of limited vegetation and soil clearance across the tops of the former features within the Walled Garden. This will include the footprints of the glasshouses and other structures; paths and associated heating ducts and boiler areas;
- to record the uncovered features and structures in plan and by photograph;
- to photograph all accessible areas of the interior and exterior of the perimeter walls of the Walled Garden, with scale bars, to provide a complete picture of the present state of the walls.
- to use the information to suggest any future investigation at the site;
- production of a report and an archive of results.

#### ***The Bothy***

- to record the building known as the 'Bothy' to a Level 2 standard as defined in the 'Understanding Historic Buildings: A Guide to Good Recording Practice' (Historic England 2016).

### **1.3 Report Outline**

- 1.3.1 This report provides a summary and discussion of the archaeological investigations and their results, and puts those results within their regional and national context.



## 1.4 Abbreviations

1.4.1 Sites recorded on the regional Historic Environment Record (HER) are identified by their Primary Record Number (PRN) and located by their National Grid Reference (NGR). Sites recorded on the National Monument Record (NMR) held by the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW) are identified by their National Primary Record Number (NPRN). Scheduled Ancient Monument (SAM). Altitude is expressed to Ordnance Datum (OD). References to cartographic and documentary evidence and published sources will be given in brackets throughout the text, with full details listed in the sources section at the rear of the report.

## 1.5 Illustrations

1.5.1 Printed map extracts are not necessarily produced to their original scale.

## 1.6 Timeline

1.6.1 The following timeline (Table 1) is used within this report to give date ranges for the various archaeological periods that may be mentioned within the text.

Period	Approximate date	
Palaeolithic –	c.450,000 – 10,000 BC	Prehistoric
Mesolithic –	c. 10,000 – 4400 BC	
Neolithic –	c.4400 – 2300 BC	
Bronze Age –	c.2300 – 700 BC	
Iron Age –	c.700 BC – AD 43	
Roman (Romano-British) Period –	AD 43 – c. AD 410	Historic
Post-Roman / Early Medieval Period –	c. AD 410 – AD 1086	
Medieval Period –	1086 – 1536	
Post-Medieval Period <sup>1</sup> –	1536 – 1750	
Industrial Period –	1750 – 1899	
Modern –	20 <sup>th</sup> century onwards	

**Table 1:** Archaeological and Historical Timeline for Wales.

<sup>1</sup> The post-medieval and industrial periods are combined as the post-medieval period on the Regional Historic Environment Record as held by Dyfed Archaeological Trust



**Figure 1:** An extract of the 1:25000 Ordnance Survey map showing the location of the walled garden (shaded in red).

Reproduced from the Ordnance Survey 1:50,000 scale Explorer Map with the permission of The Controller of Her Majesty's Stationery Office,

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## **2. THE SITE**

### **2.1 Site Location**

- 2.1.1 The Bishops Palace, Abergwili, Carmarthenshire was the episcopal residence of the Bishops of St Davids from the 16<sup>th</sup> century to the late 1970s. The residence was situated within landscaped grounds that were developed over the years and included pleasure grounds of flower gardens, riverside meadows, parkland and after 1802 an oxbow lake. Cadw have designated the gardens as nationally significant (PGW Dy 59 (CAM)).
- 2.1.2 The walled garden (Figure 1, NGR SN44048 20885) is situated to the southwest of the Bishop's Palace. The Representative Body of the Church in Wales owns the walled garden and the Bothy.
- 2.1.3 The garden is walled on four sides; the north, east and west walls are of red brick; roughly 3m high and capped with slate slabs and the later south wall was built from stone. Externally the brick walls are built of roughly coursed mortared shale and other local stone. The garden walls are Grade II Listed (LB No: 81930). The garden is not quite square in shape and has a total perimeter of 195m and comprises an area of 0.27ha. The southwest quarter of the garden is grassed and contains an orchard of small apple trees (Photo 1).
- 2.1.4 There are two doorways into the walled garden, one at the north end of the east wall and the other at the west end of the north wall.



**Photo 1:** The orchard of apple trees in the southwest quarter of the walled garden

- 2.1.5 In recent years the walled garden has fallen into disuse and has become overgrown with small trees and shrubs, brambles and other vegetation. The walls were nearly completely covered in ivy (Photo 2).
- 2.1.6 Prior to the survey work that was undertaken by DAT in June 2016 the walled garden had been cleared of most of the shrubs and brambles and before the start of this investigation the walls had been cleared of ivy.



- 2.1.7 A number of structures were evident within the walled garden after the clearance, including the remains of at least 3 glasshouses (Photos 3 & 4). However, much of the garden was obscured by years of accumulated soil and decomposing vegetation (Photo 5).



**Photo 2:** The northeast doorway into the walled garden at the start of the project.



**Photo 3:** The remains of the lean-to glasshouse (Glasshouse 1) at the start of the project.





**Photo 4:** The remains of one of the pair of glasshouses (Glasshouse 2) at the start of the project.



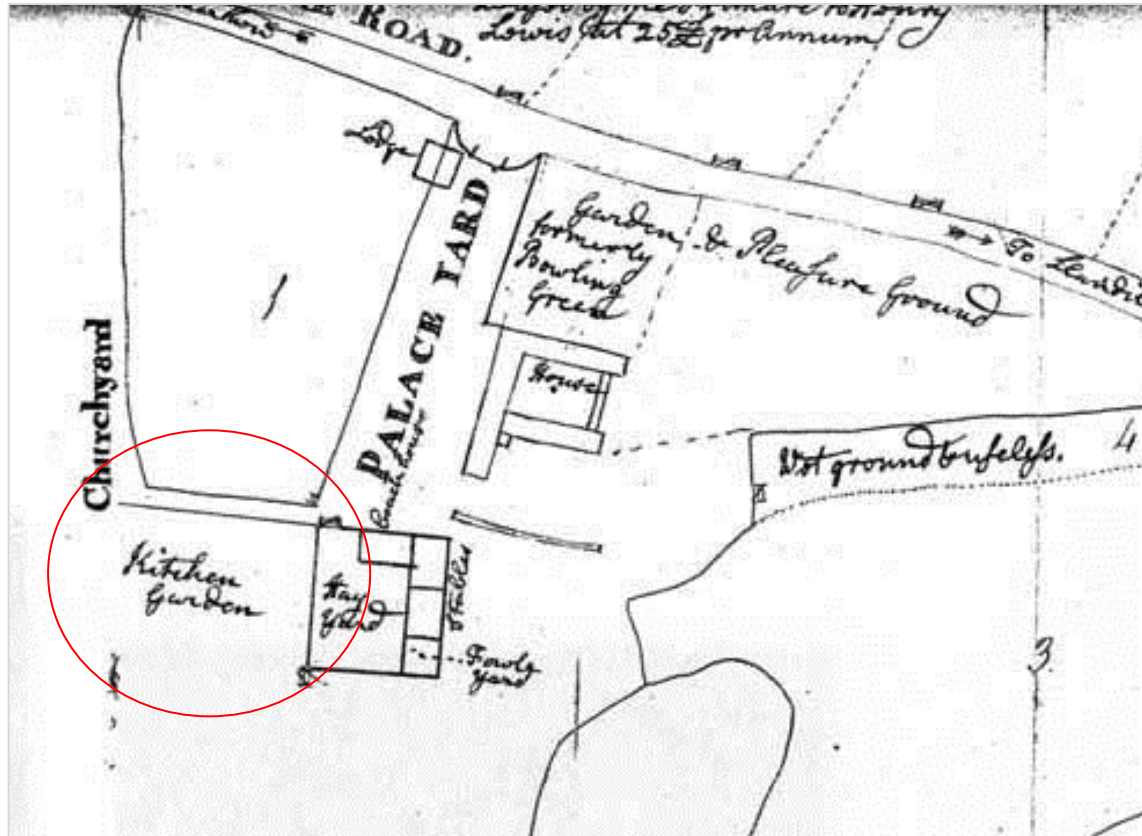
**Photo 5:** Looking towards the northeast gate of the walled garden at the start of the project.



## 2.2 Historic Mapping

### Estate map of 1796

- 2.2.1 The Estate Map of 1796 shows a kitchen garden between a hay yard and stables to the east and the churchyard to the west (Figure 2). The garden appears to be unenclosed on its south and west sides. Land-use is not shown on the map.



**Figure 2:** Extract of the 1796 estate map (Llyfrgell Genedlaethol Cymru/  
The National Library of Wales)



### **Estate map of 1811**

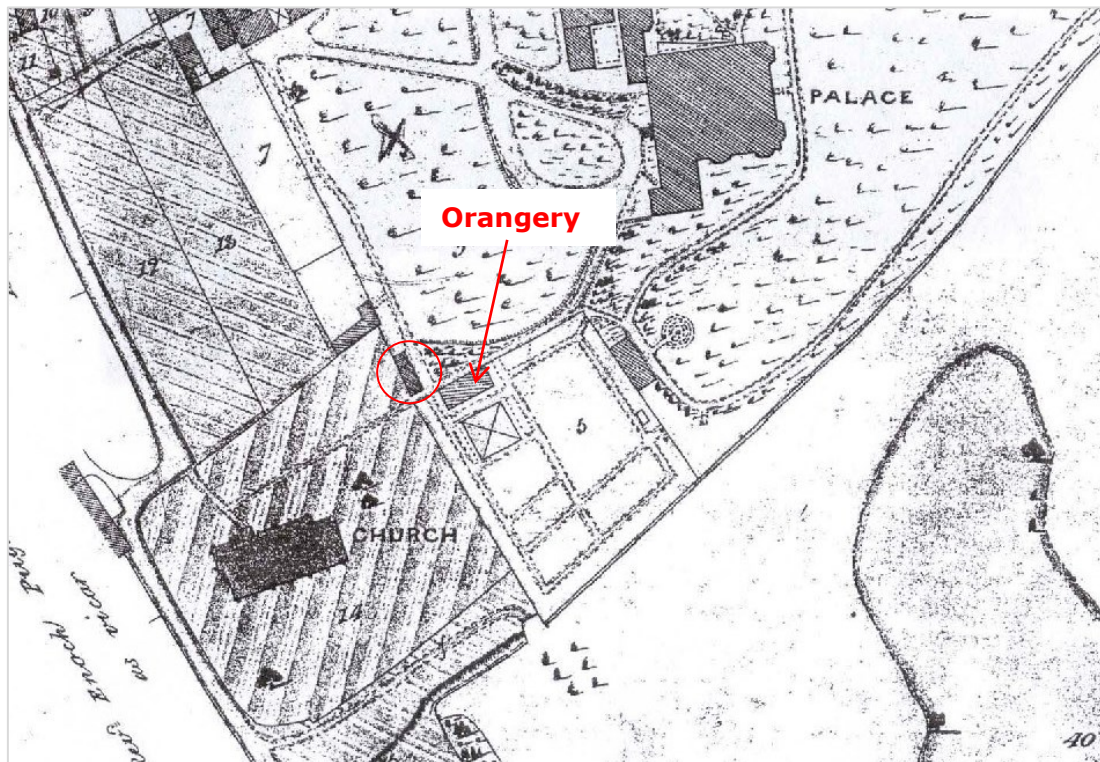
- 2.2.2 The hay yard and stables are still evident on the 1811 estate map (Figure 3) but to the west the kitchen garden is now walled on three sides: to the north, east and west. To the south the garden is unenclosed and the ground along the southern edge appears to drop down to a stream that borders it.
- 2.2.3 The walled garden is shown divided into three large cultivation beds running east-west. There is no evidence of any structures or glasshouses within the garden at this stage.



**Figure 3:** Extract of the 1811 estate map (Llyfrgell Genedlaethol Cymru/  
The National Library of Wales)

### **Estate map of 1843**

- 2.2.4 By the time of the 1843 estate map (Figure 4) the hay yard and stables have been demolished and the present kitchen garden is established completely walled on four sides. The small building known as 'The Bothy' (circled in red) located to the northwest of the garden is shown. Within the walled garden the building known as the 'Orangery' is depicted as a rectangular building against the north wall and a square (un-shaded on the map) structure is shown where Glasshouses 2 & 3 are currently located. The remaining area is divided into variously sized cultivation beds. Glasshouse 1 is not shown.
- 2.2.5 In the former area of the hay yard a rectangular building is shown built against the east facing wall of the garden.



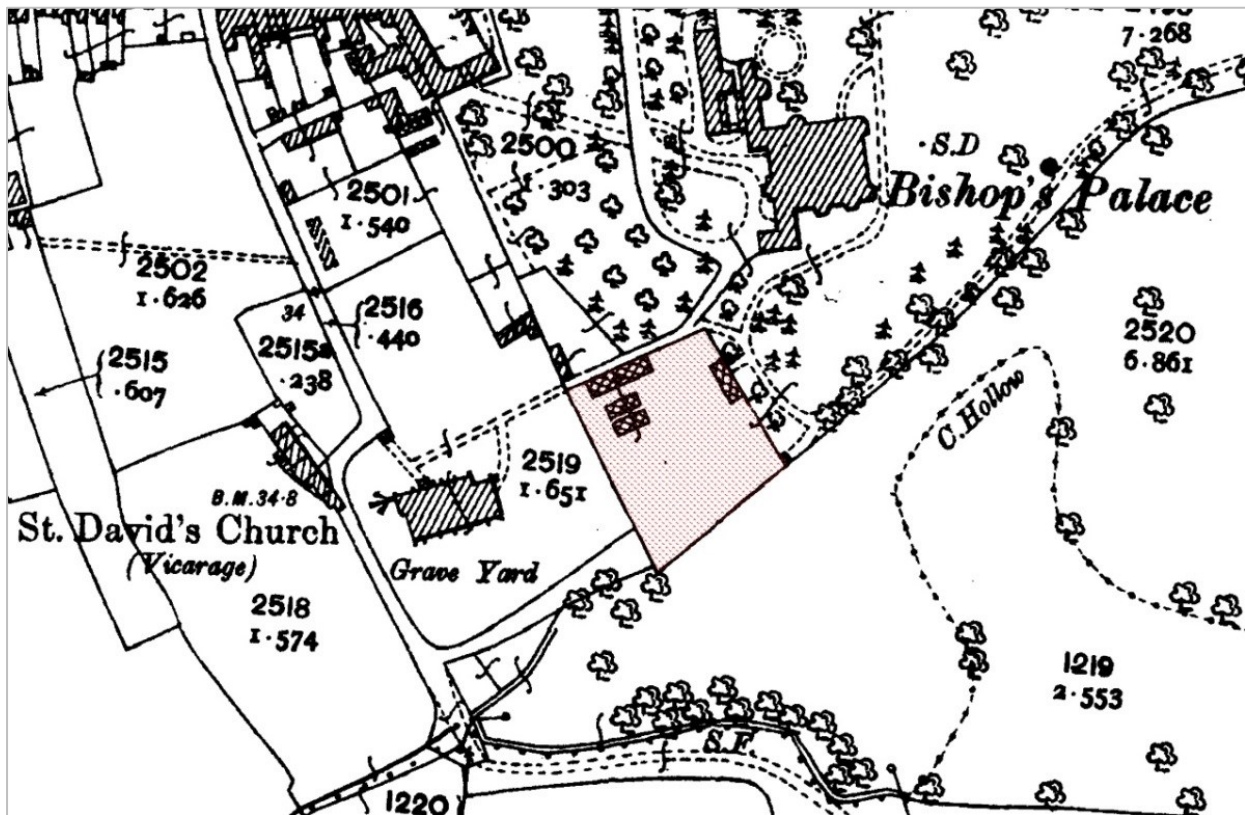
**Figure 4:** Estate map 1843 (Held by the Carmarthenshire Record Office)





## 2<sup>nd</sup> edition Ordnance Survey 1:25000 map of 1906

2.2.9 The 1:25000 2nd edition Ordnance Survey map of 1906 (Figure 6) shows little change from the 1<sup>st</sup> edition map.

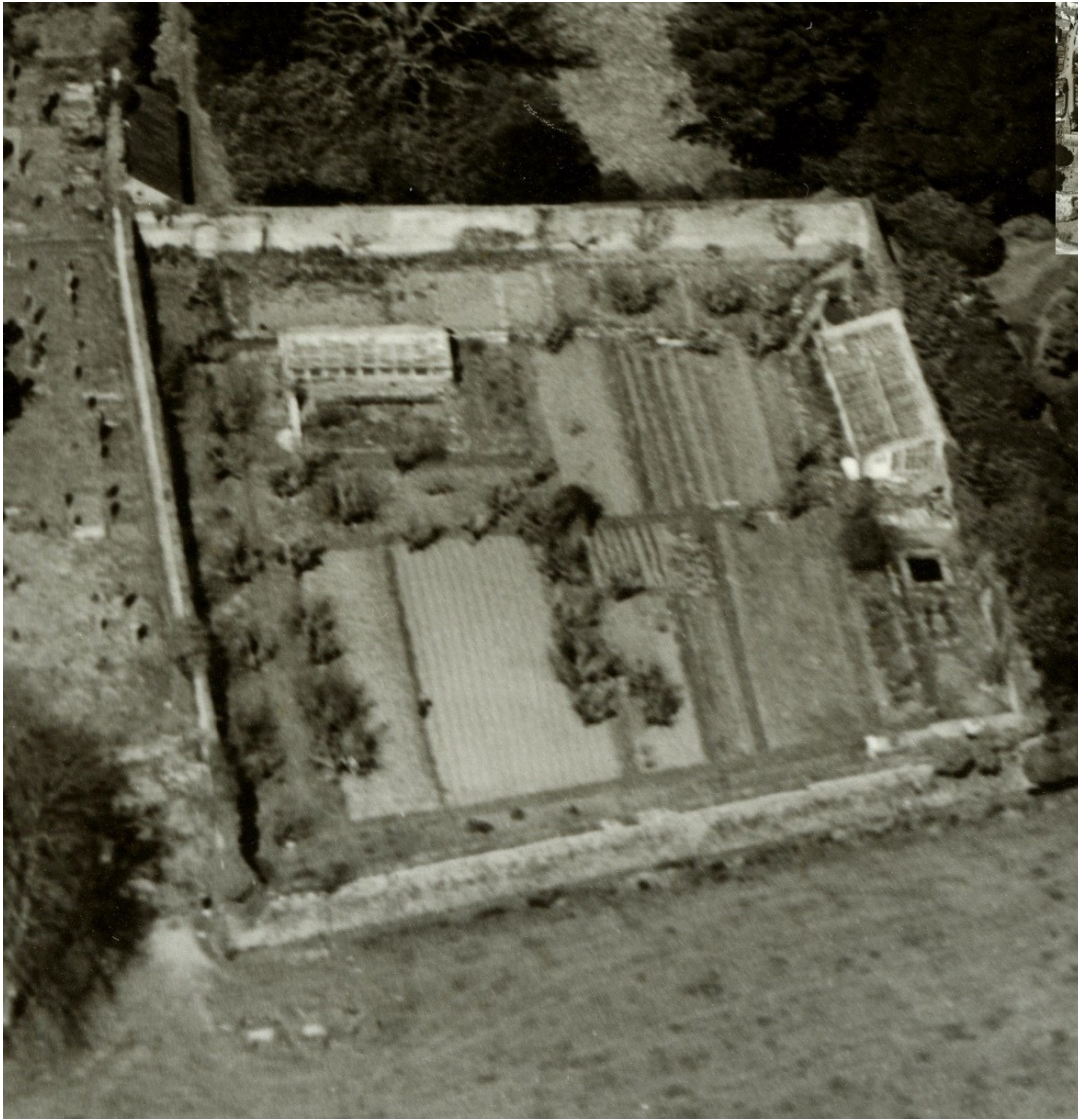


**Figure 6:** The 2<sup>nd</sup> edition 1:25000 Ordnance Survey map of 1906 showing the development area outlined in red.

## Aerial photograph taken in 1955

2.2.10 An extract from an aerial photograph of 1955 (Meridian Air Photos, SN 42 SW), shows the walled garden still in use, with much of the garden laid out in cultivation beds, separated by pathways (Figure 7). The lean-to glasshouse on the eastern wall is extant but it appears that only the northernmost of the pair of glasshouses is still used and its glass intact, although the western gable end of the southern glasshouse appears to still be standing. The dipping pond and makeshift enclosure are clearly visible.

2.2.11 Small fruit trees follow the line of the paths in the southwest quarter of the garden.



**Figure 7:** Extract from an aerial photograph taken in 1955.

### **2.3 Previous Archaeological Work**

- 2.3.1 Cambria Archaeology (now Dyfed Archaeological Trust) undertook a Historic Landscape Study of the Bishop's Palace in 2005. As part of this work a geophysical survey was undertaken within the walled garden whose results showed evidence of paths, a wall and the position of Glasshouse 3.
- 2.3.2 In June 2016 DAT Archaeological Services completed topographic surveys of the Walled Garden as well as other elements of the Bishop's Park including The Bishop's Garden; The Bishop's Meadow and the causeway and island.

### 3. ARCHAEOLOGICAL METHODOLOGY

#### 3.1 The Walled Garden

##### *Photographic Survey of Walled Garden walls*

- 3.1.1 A series of overlapping photographs were taken around the perimeter of all accessible areas of the interior of the perimeter walls of the Walled Garden, with scale bars, to provide a complete picture of the present state of the walls. General views of the garden and its surroundings were taken.

##### *Uncovering of Garden Features*

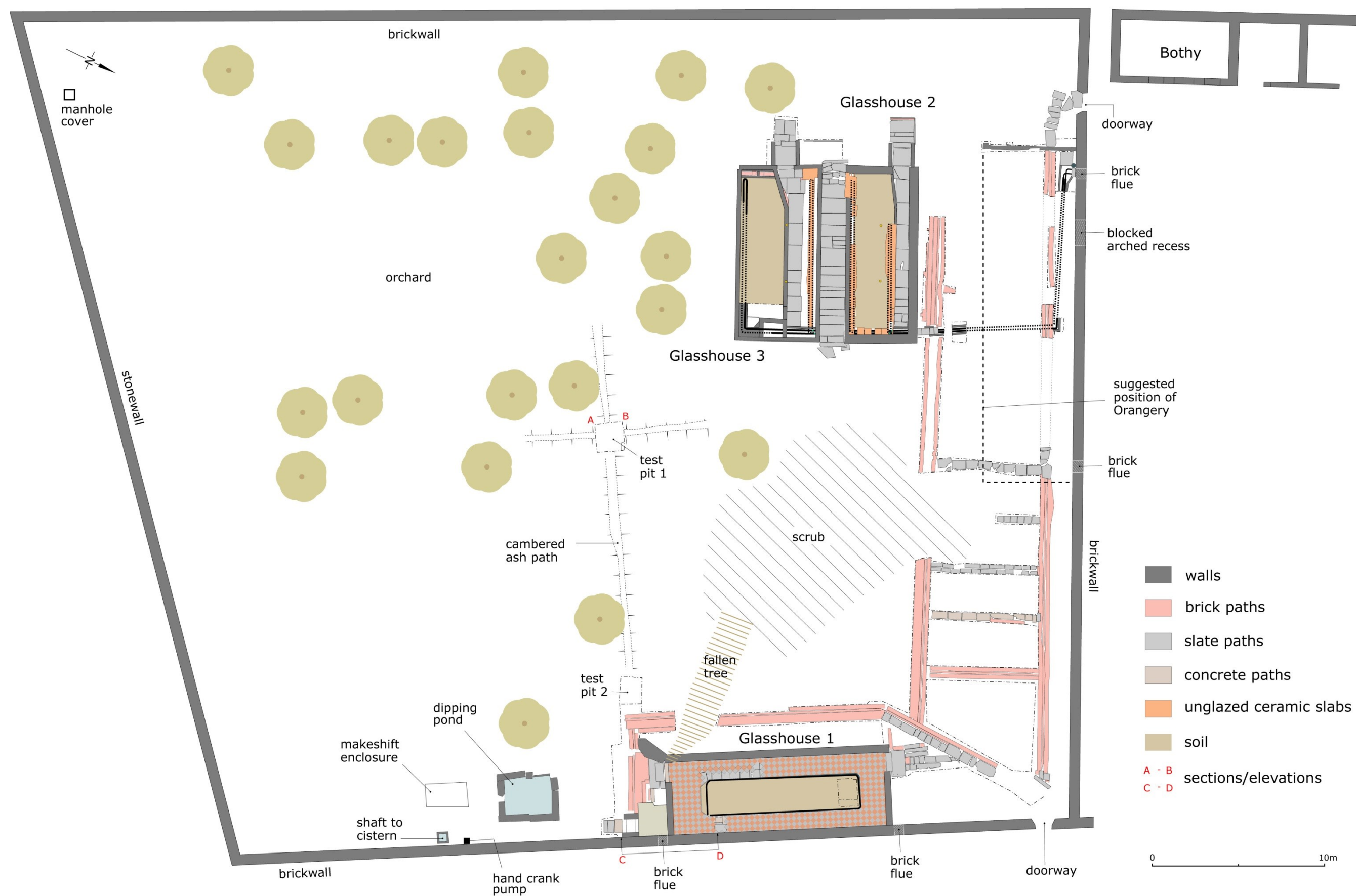
- 3.1.2 DAT staff with the assistance of volunteers undertook a programme of limited vegetation and soil clearance across the tops of the former features within the Walled Garden. This included the footprints of the glasshouses and other structures; paths and associated heating ducts and boiler areas.
- 3.1.3 Features were cleaned with a mix of shovels, trowels and brushes to clear brickwork, masonry or paths and areas of former flower beds. The exposed remains were photographed with a mix of general and detailed shots. Exposed remains were planned at an appropriate scale and surveyed using a Trimble Total Station Theodolite (TST). Written descriptions of the exposed remains were made.
- 3.1.4 All archaeologically significant artefacts, ecofacts and samples were retained and, where possible, related to the contexts from which they derived.
- 3.1.5 As there are no specific plans for how the walled garden will be renovated or restored as yet (other than the perimeter walls themselves will be made good), there was no need to remove any structural elements at this stage, and all exposed remains were left visible.

#### 3.2 The Bothy:

- 3.2.1 The historic building recording scheme was undertaken to a Level 2 standard as defined in the '*Understanding Historic Buildings: A Guide to Good Recording Practice*' (Historic England 2016). This level of recording is described thus:
- 3.2.2 Level 2 is a ***descriptive record***, made in similar circumstances to Level 1 but when more information is needed. It may be made of a building which is judged not to require a more detailed record, or it may serve to gather data for a wider project. Both the exterior and interior of the building will be seen, described and photographed. The examination of the building will produce an analysis of its development and use and the record will include the conclusions reached, but it will not discuss in detail the evidence on which this analysis is based. A plan and sometimes other drawings may be made but the drawn record will normally not be comprehensive and may be tailored to the scope of a wider project.



St David's Church cemetery



**Figure 8:** Overall plan of the structures and features revealed within the walled garden in 2017.

## **4. RESULTS**

- 4.1 The evaluation was carried out from 6<sup>th</sup> to the 18<sup>th</sup> March 2017 in mostly dry weather. With the assistance of volunteers a programme of vegetation and soil clearance was undertaken across the remains of the former green houses and surrounding areas within the walled garden (Figure 8).

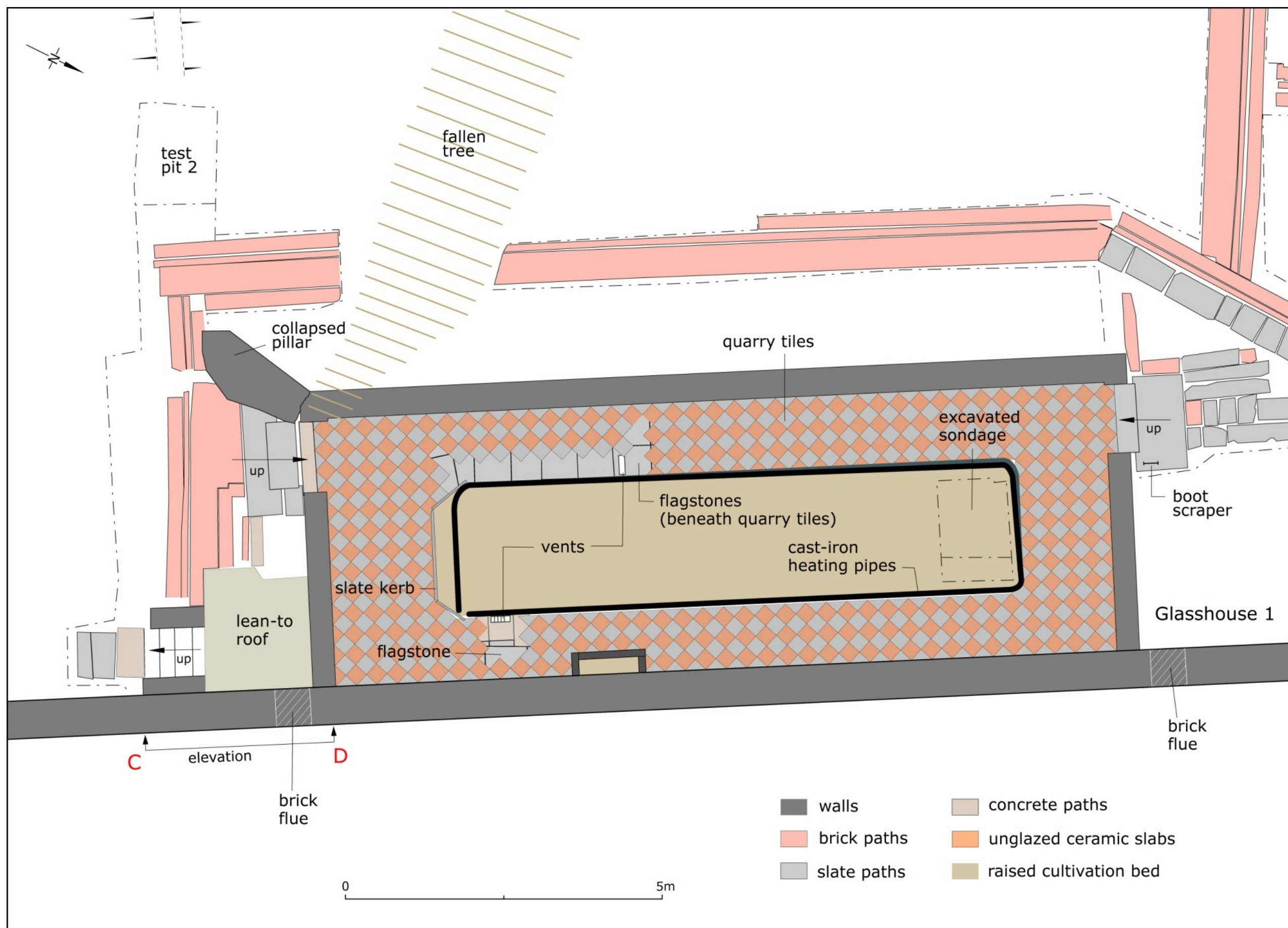
### **4.2 Glasshouse 1 (Figure 9)**

- 4.2.1 Built against the west facing wall of the walled garden was the remains of a single rectangular glasshouse, measuring approximately 12.20m by 4.32m (Photos 6 & 7). Shallow steps led to a doorway at opposing ends of the glasshouse, with a metal boot scraper still *in situ* by the north doorway (Photo 8). Slate and brick paths ran from the north-eastern garden doorway to the doorways of this glasshouse.
- 4.2.2 Within Glasshouse 1 a great deal of vegetation including small trees, soil and accumulated rubbish was cleared revealing the mostly intact walls and tiled floor of the glasshouse (Photo 9).
- 4.2.3 The low brick walls of the glasshouse (with an internal height of 0.30m) were capped with flat stone slabs. Brick built pillars had stood at the north- and south-western corners of the glasshouse but only the north-western pillar still stood at 1.40m high (Photo 10).
- 4.2.4 Within the west facing wall at either end of the glasshouse were two brick flues or chimneys (Photos 11-12). The bricks had been clearly reddened by heat. The southernmost chimney was very similar to that recorded at Parnham, west Dorset (Wilson 1998, p.125) and suggests that they were for the heating of the wall, whereby smoke filled a winding arrangement of connecting flues within the wall which were fuelled by small stoves. Hot walls were built facing the sun and enabled tender fruits to be cultivated. It is possible that this was built and used prior to the construction of Glasshouse 1; and/or may be associated with the rectangular building shown on the other (east facing) side of the east wall on the 1843 estate map.
- 4.2.5 The roots of a tree at the south-western corner of the glasshouse had heavily disturbed the area and caused the collapse of the brick pillar at this corner (Photo 13).
- 4.2.6 The glasshouse floor was of diagonally placed red and grey ceramic tiles; each measuring 0.23m square. Sitting within the centre of the glasshouse was a soil filled cultivation bed measuring 9.08m by 1.68m bounded by two 4inch diameter iron pipes, one on top of another, that ran around the perimeter of the cultivation bed. The tiles did not run beneath the pipes but stopped just short of them.
- 4.2.7 Disturbance by tree roots in the south-western corner revealed an earlier floor underlying the ceramic tiles (Photo 14). This floor comprised a suspended stone slab floor supported on narrow brick walls, that created an enclosed cavity that appeared (from brief inspection) to run under the full extent of the stone floor surface. The stone slabs measured roughly 0.59m square and were 0.05m thick. Evidence of small rectangular metal vents set into this floor was recorded (Photos 15-17).
- 4.2.8 At the south end of Glasshouse 1 were a number of corrugated asbestos sheets placed against the west facing garden wall that shielded the entrance to a stove/boiler room built below the southern end of the glasshouse (Photo 18). Steps led down to the underground room. Towards

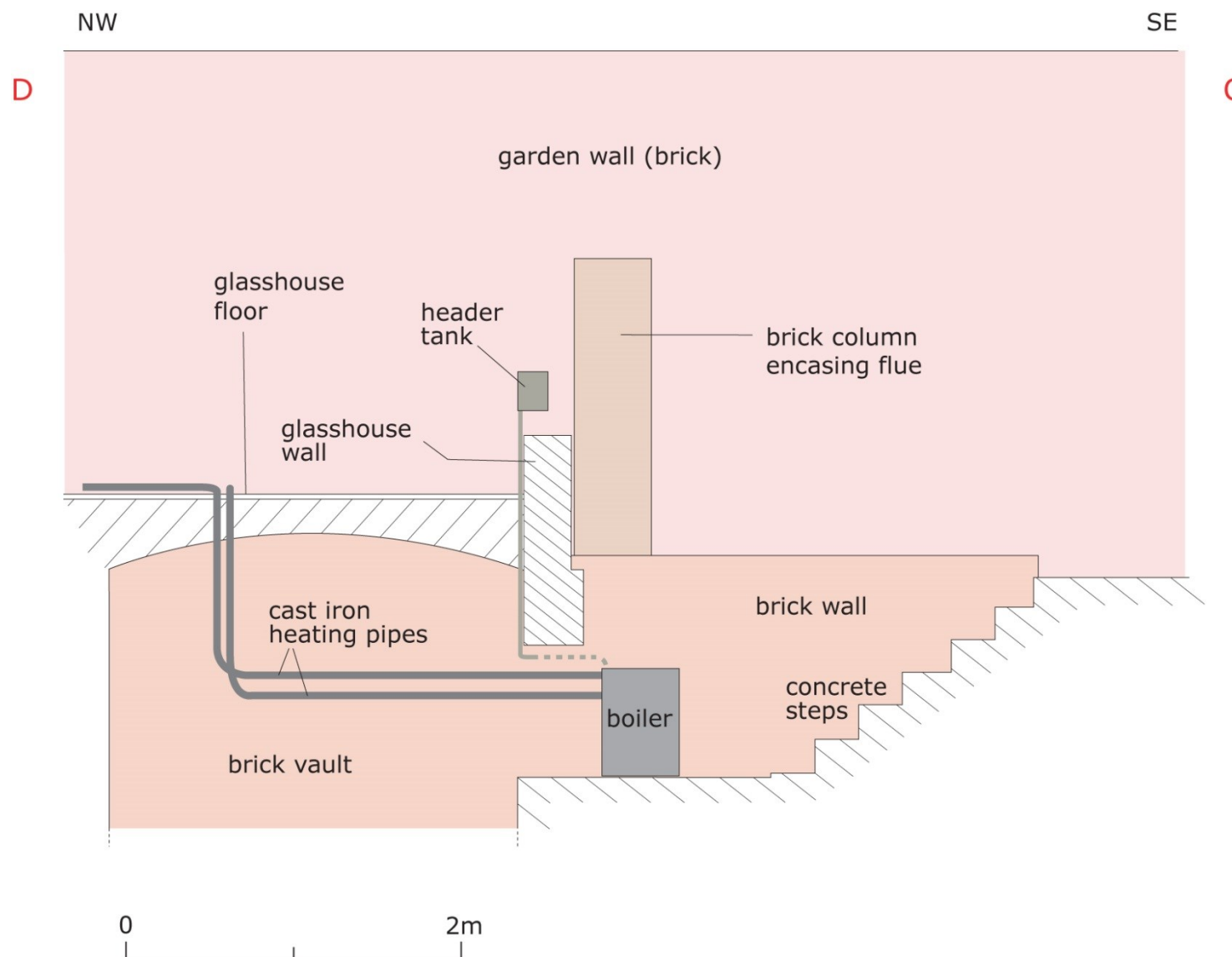


the bottom of the steps was a cast iron boiler (Photo 19) measuring 0.66m high by 0.43m wide and 0.42m deep.

- 4.2.9 The stove/boiler house was a brick vaulted chamber that was the width of the glasshouse, measuring approximately 2.57m wide (E-W) and 2.44 long (N-S) and at least 1.25m high (Figure 10, Photo 21).
- 4.2.10 To access the brick vaulted chamber one had to squeeze past the cast iron boiler and crawl into the chamber. A brief inspection showed that in the west wall were two brick arched square recesses. The upper recess appeared to be a firebox (Photo 21) and the lower, at floor level, might have been for the removal of ashes. The firebox had once had a metal door. On the east wall a similar brick arched square recess at floor level was present (Photo 22). Unfortunately the amount of accumulated rubbish within the chamber did not allow for any greater recording.
- 4.2.11 From the back of the boiler two cast iron pipes ran to the north just below the brick vaulted roof and then turned upwards and passed through a rough hole created in the roof to the surface above (Photos 24-25). A narrower cast iron pipe appeared to be from the header tank above (Photo 20).
- 4.2.12 These findings suggest that there were at least two different phases of heating system (apart from the hot wall) for Glasshouse 1. The first comprised the heating, via the underground stove, of air within the cavity under the stone floor. Opposite the presumed siting of one vent within the stone floor was a wide slot within which was found the remains of a metal sheet that may have been used to control the flow of hot air through the vent (Photo 26).
- 4.2.13 The second later system comprised the heating, via the boiler, of a closed water system within the cast iron pipes that enclosed the central cultivation bed. This boiler reused the southernmost brick flue of the hot wall system.
- 4.2.14 In 2005 a stone-lined pit was recorded on the other side of the wall near Glasshouse 1 (Cambria 2005) that was thought to be the site of a further furnace. However, in 2017 no trace of this structure could be seen on the ground.
- 4.2.15 At the northern end of the central cultivation bed a section or sondage was excavated (Photo 27). Below the dark cultivation soil that filled the cultivation bed, lighter compact clay subsoil was revealed. After excavating 0.20m of the subsoil and thus being below the level of the stone floor, it seemed clear that there was no void beneath the cultivation bed.



**Figure 9:** Detailed plan of Glasshouse 1.



**Figure 10:** Elevation drawing through the boiler house of Glasshouse 1. Location of the elevation shown in Figure 9.





**Photo 6:** Starting to clear Glasshouse 1. Looking north



**Photo 7:** The clearance of Glasshouse 1 continues. Looking southwest





**Photo 8:** The boot scraper at the north door of Glasshouse 1.



**Photo 9:** Glasshouse 1 - clearance completed. Looking south. 2 x 2m scale





**Photo 10:** Glasshouse 1 - clearance completed. Looking northwest. 2 x 2m scale





**Photo 11:** Evidence of a brick flue within the east wall at the north end of Glasshouse 1. 2m scale



**Photo 12:** Evidence of a brick flue within the east wall at the south end of Glasshouse 1. 2m scale





**Photo 13:** Photo showing the area disturbed by tree roots in the southwest corner of the glasshouse. Looking roughly north



**Photo 14:** Photo showing the cavity below and brick supporting wall to the earlier stone floor. 0.5m scale





**Photo 15:** Photo showing the rectangular metal vent set into the stone floor on the east side of the central cultivation bed. 0.5m scale



**Photo 16:** Detail of the rectangular metal vent set into the stone floor on the east side of the central cultivation bed. 0.5m scale





**Photo 17:** Photo showing the rectangular space for a vent set into the stone floor on the west side of the central cultivation bed. 0.5m scale



**Photo 18:** Photo showing the corrugated asbestos roof to the boiler house of Glasshouse 1. Looking east





**Photo 19:** Photo showing the corrugated asbestos roof and steps down to the boiler house of Glasshouse 1. The small cast iron boiler can be seen at the bottom of the steps. Looking north.



**Photo 20:** Photo showing the header tank to the boiler house of Glasshouse1. Looking east





**Photo 21:** Photo showing the roof and west wall of the brick vaulted chamber of the underground boiler house to Glasshouse 1.



**Photo 22:** The east wall of the boiler house showing the bricked arched recess at floor level.





**Photo 23:** The west wall of the boiler house showing two bricked arched recesses. The upper one would appear to have been a firebox and the lower (at floor level) was probably for ash clean out.





**Photo 24:** The two cast iron pipes that run northwards from the boiler. Bricks and pieces of wood have been used to separate the pipes. The narrower pipe in the background is from the header tank shown in Figure 10.



**Photo 25:** The two cast iron pipes running upwards to the glasshouse above through a hole made in the brick vaulted roof.





**Photo 26:** Photo showing the corroded cast iron sheet found within the narrow slot to the west of the possible vent set into the stone floor on the west side of the central cultivation bed. 0.5m scale



**Photo 27:** The sondage excavated at the north end of the central cultivation trench; showing the lighter coloured subsoil below the dark cultivation soil. Looking east. 0.5m & 1m scale.

### **4.3 Glasshouses 2 & 3 (Figure 11)**

- 4.3.1 During the clearance of vegetation and accumulated rubbish in the area of Glasshouses 2 & 3 (Photos 28 & 29) a well preserved central path between the two glasshouses was revealed. It was a suspended path, roughly 1.40m wide, with steps at either end, constructed from large slate slabs (Photos 30).
- 4.3.2 The two glasshouses appeared to be discrete structures separated by the central slate path. The 1950's aerial photograph (Figure 7) shows Glasshouse 2 still in use but Glasshouse 3 had been dismantled; so it is clear that they were able to operate separately. However, they were both heated by the same closed pipe system (Figure 11). Glasshouse 2 measures roughly 10.20m long and 4.20m wide; Glasshouse 3 is the same length but slightly wider at 4.92 m wide.
- 4.3.3 Both glasshouses had a sunken path, or 'tropical pit' as they are often known, that ran the length of each glasshouse, constructed from large slate flags (Photos 32-36); the floors were not suspended. A huge amount of assorted rubbish was removed during the excavation of these paths (Photos 31 & 34). The sunken paths allowed for easier access to the raised cultivation beds that also ran the length of both glasshouses. Gate hooks survived in the walls for gates at the bottom of the steps to both sunken paths.
- 4.3.4 The investigation revealed evidence that both glasshouses and their heating systems had been altered and adapted many times over the years. It was clear that the most recent heating system was a closed pipe hot water system (Photo 37). Figure 11 shows the arrangement of the cast iron 4 inch diameter pipes. Where the pipes have been removed the route they took has been inferred as far as possible.
- 4.3.5 The two pipes forming one continuous loop could be traced underground from the north garden wall where it was clear that they entered the garden from the other side of the wall (Photo 37).
- 4.3.6 The pipes then ran parallel with the north wall, before turning to the southeast and eventually entering Glasshouse 2 at its northeast corner (Photo 38).
- 4.3.7 Inside the glasshouses the two pipes; one to feed hot water and one to return cooler water, ran along the east side of both glasshouses and the south side of Glasshouse 3. Vertical feed and return pipes (Photo 39) allowed for the creation of further loops in the system as suggested in Figure 11.
- 4.3.8 The pipes of these loops rested on large roughly 0.40m square unglazed ceramic slabs, the undersides of which were perforated with small holes (Photo 40). These slabs in turn had been placed onto two lines of bricks on edge creating a linear void underneath the brick slabs (Photo 39). In contrast the two main heating pipes along the east side of both glasshouses ran under the cement slabs.
- 4.3.9 Unlike Glasshouse 2 where the heating pipe loop probably ran around the perimeter of the cultivation bed, in Glasshouse 3 a heating loop runs along the north wall parallel with the path.
- 4.3.10 At the end of Glasshouse 3 the two main heating pipes passed through what was probably an evaporating trough (Photo 41, Figure 11). The hot pipes would have passed through this water filled tank thereby increasing the level of moisture within the glasshouse. At the western end of

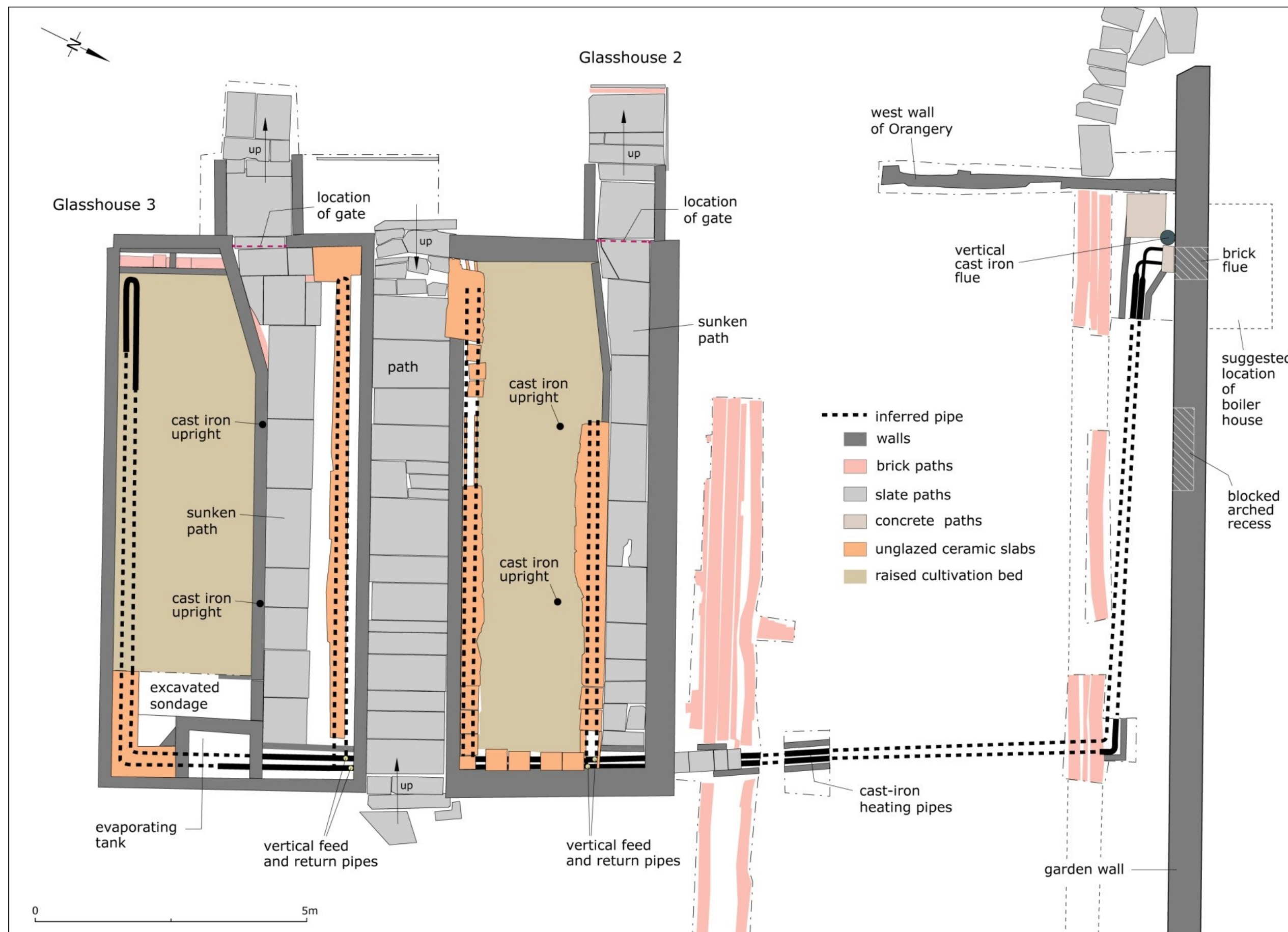


Glasshouse 3 are two small rectangular brick troughs whose purpose is not known.

- 4.3.11 It appears that the water would have been heated by a boiler or stove located outside the walled garden near the Bothy. There are no indications above ground of the type of boiler house; it may have been built below ground and remains of this may still survive. Boiler rooms had to be below ground because the heating systems were not pumped and relied on thermo-cycling (the natural rise of warmer water leaving the boiler and the fall of the cooling water in the return pipe), with drainage/heating channels below floor level and chimneys above.
- 4.3.12 A cast iron cylindrical flue inside the walled garden is situated very near to where the pipes exit the walled garden (Photo 42) but without further investigation it is not possible to ascertain what the relationship is between the features in this area.
- 4.3.13 Four surviving cast iron uprights, two in each glasshouse, approximately 2.30m high (from the ground level of the slate path) would have supported horizontal beams (Photo 44). Their positions are shown in Figure 11. The two uprights in Glasshouse 3 have decorative capitals.
- 4.3.14 One surviving thin iron pipe from Glasshouse 2 was marked 'MESSENGER & CO LONDON' (Photo 45). This possibly formed part of a window ventilation system.
- 4.3.15 Excavation of a sondage at the northeast end of the raised cultivation bed in Glasshouse 3 showed that the northern brick wall of the bed had been constructed directly on the slate floor of the path and that at this end of the wall there had once been a small gap, c.0.75m wide and 0.50m deep, which had been badly filled in with bricks at a later date. In such a small area it was difficult to understand the sequence of events but it was clear that the primary fill of the cultivation bed was a deep layer (c.0.50m) of ash and clinker, above which was evidence of a demolished brick wall and then a deep layer (c.0.55m) of loamy cultivation soil (Photo 46).

#### **4.4 The Orangery (Figure 8)**

- 4.4.1 The 1843 estate map (Figure 3) depicts a rectangular building built against the north wall known as the 'Orangery'. By the time of the 1st edition 1889 OS map (Figure 4) this building has roughly doubled in length. The building was demolished by the time of the aerial photograph taken in 1955 (Figure 7).
- 4.4.2 The 2017 investigations exposed a 5.40m length of brick wall that is believed to be the part of the west wall of the Orangery (Photo 47, Figures 11 & 13). There appeared to be evidence for the square foundations of a possible pillar at the southern end of this wall.
- 4.4.3 The full length of the extended Orangery as shown on the 1<sup>st</sup> edition 1889 OS map may be indicated by the positions of two internal brick flues within the north wall (Photos 42 & 48, Figure 8). This would indicate an approximate length of 17.60m. The two flues or chimneys appear to be for the internal heating of the south facing wall, similar to that recorded in the east wall of Glasshouse 1.
- 4.4.4 Evidence of a brick arched recess/door can be seen in the north wall (Photo 42). On the other side of the north wall the wall has been heavily repaired. It is possible that this recess or door sat centrally within the earlier (smaller) phase of Orangery as indicated on the 1843 estate map.



**Figure 11:** Detailed plan of Glasshouses 2 and 3.





**Photo 28:** Glasshouses 2 and 3 at the start of the clearance programme.  
Looking approximately southwest. 1m scale



**Photo 29:** Clearing the accumulated rubbish and soil from the western end of  
Glasshouses 2 and 3.





**Photo 30:** The central suspended slate path between Glasshouse 2 and 3. Looking northeast.



**Photo 31:** Partial excavation of the sunken path of Glasshouse 2 showing a dumped metal trunk. Looking northeast. 1m scale





**Photo 32:** The cleared sunken path of Glasshouse 2. Looking northeast.



**Photo 33:** The cleared sunken path of Glasshouse 2. Looking southwest. 2m scale





**Photo 34:** Some of the accumulated rubbish excavated from the sunken paths of Glasshouses 2 and 3.



**Photo 35:** The cleared sunken path of Glasshouse 3. Looking approximately north.





**Photo 36:** The cleared sunken path of Glasshouse 3 and the central suspended path. Looking approximately south.



**Photo 37:** The two heating pipes reduced from 4" to 2" inch that then run under the north garden wall. Note the cast iron cylindrical flue. Looking west. 1m scale





**Photo 38:** The two heating pipes running underground in a northwest direction from Glasshouse 2. They sit within an uncapped brick edged channel. Looking northwest. 1m scale



**Photo 39:** The east end of Glasshouse 2 showing the main heating pipes and the remains of the vertical feed and return pipes. Looking roughly northwest. 0.5m scale





**Photo 40:** The perforated underside of one of the ceramic slabs on which the heating pipes were placed. 0.5m scale



**Photo 41:** The evaporating tank at the east end of Glasshouse 3 through which the heating pipes passed. Looking roughly northwest. 0.5m scale





**Photo 42:** The south facing garden wall showing the blocked arched recess of the earlier Glasshouse 4. It also shows the cast iron cylindrical flue seen in Photo 41 and behind the reddened heat affected brick flue within the wall. 2m scale



**Photo 43:** The north facing garden wall showing the other side of the heat affected brick flue seen in Photo 41. Note the blocked square hole at the bottom of the flue. 1m scale





**Photo 44:** Close up of one of the two decorative cast iron uprights that supported a horizontal beam in Glasshouse 3.



**Photo 45:** A thin iron pipe from Glasshouse 2 marked 'MESSENGER & CO LONDON'.





**Photo 46:** The east facing section of the sondage excavated at the eastern end of the cultivation bed in Glasshouse 3. 1m scale



**Photo 47:** The remains of the west wall of the Orangery. 1m scale





**Photo 48:** Close up of the brick flue within the north wall that possibly marks the east end of the extended Orangery. 2m scale



#### **4.5 Other Garden Features (Figure 8)**

- 4.5.1 Other features recorded within the walled garden include a rectangular sunken pond known as the 'Dipping Pond' (Photo 49) that still contains water. Internally it measured 2.70m by 2.20m and was aligned northwest-southeast. Its edges were capped with coping stones, and at each corner were the remains of a broken lead pipe protruding out horizontally into the pond. The depth of the pond was estimated at just over 1.0m depth by pushing a ranging rod into the accumulated soil and leaf mould below the water until the rod hit a very hard surface, indicating a stone base. The pond appears on the 1843 estate map (Figure 13).
- 4.5.2 To the south of the Dipping Pond was a rectangular makeshift enclosure formed from old metal gates whose purpose is not known (Photo 50).
- 4.5.3 Fitted to the garden wall to the east of the Dipping Pond is a hand crank pump (Photo 51). Two polyurethane pipes are attached to it but they do not appear to connect to the pond.
- 4.5.4 To the south of this hand crank pump a brick lined shaft was discovered in the ground close to the garden wall (Photos 52-53). The shaft gave access to what appeared to be a water filled cistern or possibly a well.
- 4.5.5 This shaft was further investigated in January 2018 using a camera on an extended pole and a distometer, and a rough plan and section through the cistern feature are shown in Figure 12. The photographs are also included but are limited in their usefulness.
- 4.5.6 In summary the underground cistern would appear to be of rubble stone construction using a charcoal/clinker rich mortar. No indications of corners were visible within the structure and so it is likely to be round and of just under 2.0m diameter.
- 4.5.7 The brick built manhole entrance was around 0.70m square and around 1.1m deep to the opening of the cistern structure (Photo 54).
- 4.5.8 Water level was at 1.70m below ground surface.
- 4.5.9 The top of the silts within the cistern were around 3.48m below ground surface and the base of the structure (as far as could be ascertained) was a further 0.40m below that (3.88m below ground surface).
- 4.5.10 No evidence of a water inlet or pipe within the walls above water level was seen.
- 4.5.11 The structure appears to be capped with rough concrete/cement (potentially with metal beams – but this could not be confirmed). The rough nature of the capping can be just seen at the tops of photos a) and b) in Figure 12.
- 4.5.12 The eastern wall of the walled garden (which is approximately 0.60m in width) partially runs over the open part of the cistern – with perhaps a maximum of 0.50m of the wall width over it and around 0.10m of its width presumable sitting on the walling of the structure at this point. Thus it is estimated that a maximum total length of 1.5m of the wall runs unsupported over the open part of the structure. There could be a maximum 1.1m deep foundation over it – probably supported on the capping of the structure.
- 4.5.13 The position of the shaft appears to relate quite closely to a small square feature shown at the end of a path on the 1843 estate map from which a path leads westwards (Figure 13); suggesting a visible structure at this location; perhaps a well. This well or cistern would have provided a ready

source of water to the garden and may well be associated with a kitchen garden that predates the existing one; perhaps that shown on the 1796 estate map.



**Photo 49:** The 'Dipping Pond'. Looking southeast. 1m scale



**Photo 50:** The makeshift enclosure. Looking roughly east.





**Photo 51:** The hand crank pump on the east wall of the walled garden. 1m scale



**Photo 52:** The hand crank pump with the opening to the cistern shaft to the right just after its covering of slabs was removed. 1m scale



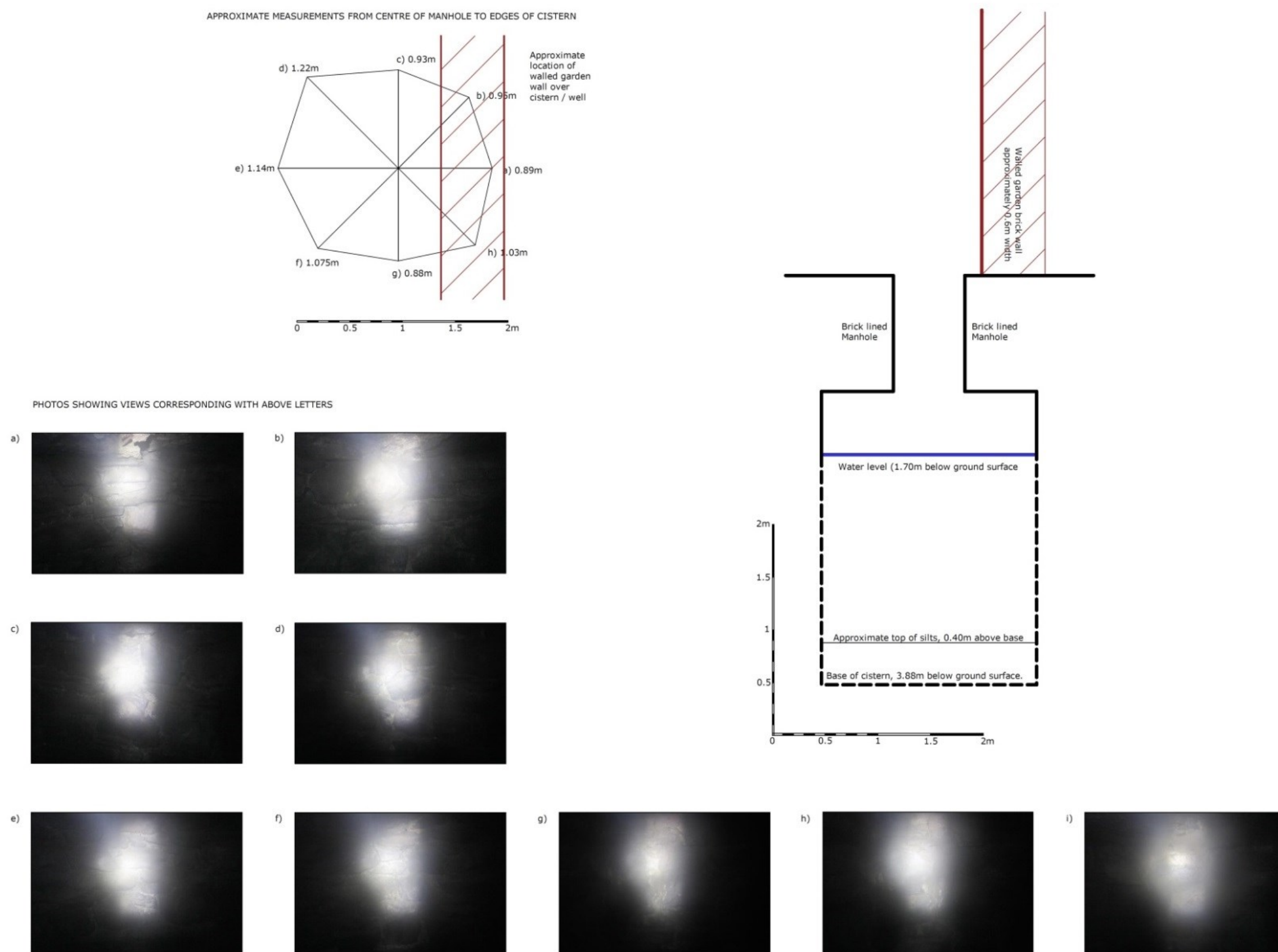


**Photo 53:** The opening to the cistern shaft when first exposed. 1m scale

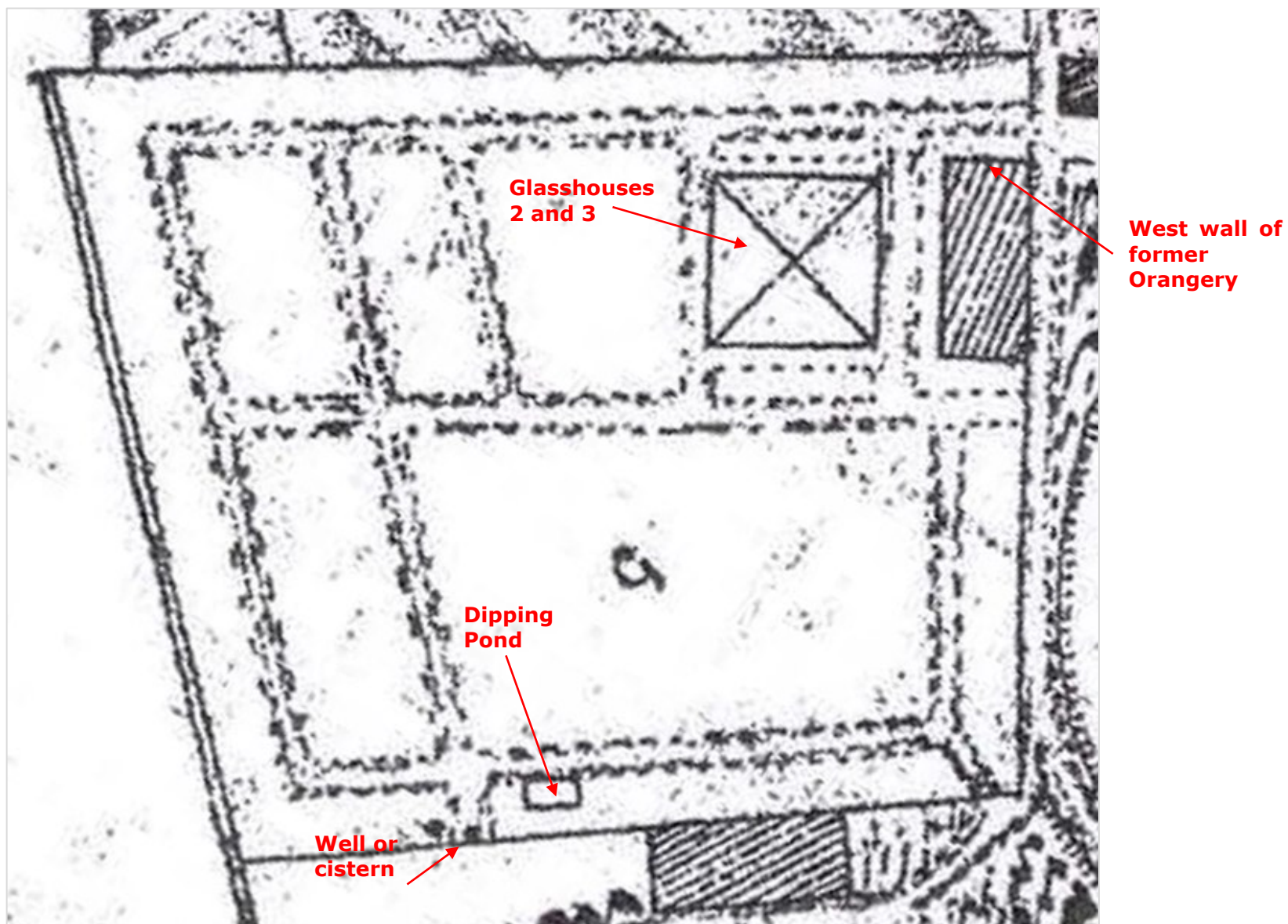


**Photo 54:** The square brick shaft to the cistern showing water below.





**Figure 12:** Results of investigations into the cistern within the walled garden.



**Figure 13:** Extract of the 1843 estate map showing features identified during the 2017 investigations.



## **4.6 Garden Paths**

### **Test Pit 1 (Figures 8 & 14)**

- 4.6.1 A 1m square test pit was excavated at the junction between two paths that dissect the garden (Figure 8). These paths can be seen in the aerial photograph taken in the 1950's shown in Figure 7.
- 4.6.2 The paths were still visible on the ground as slightly raised linear banks.
- 4.6.3 The northeast facing section of the test pit was drawn and is shown in Figure 14 and Photo 56, both of which clearly show the build-up of path deposits.
- 4.6.4 Beneath the topsoil a sequence of deposits containing small gravel/chippings, clinker and ash were revealed (Layers b-f); that created the paths across the garden.
- 4.6.5 Underlying this accumulation of path deposits was an uneven deposit of rubble including lime plaster, gravel, stones and brick (Photo 55, Layers g-h) which sat above a depth of soil (c.0.40m) containing sherds of 19th century pottery (Layer i); underneath which lay natural clay subsoils (Layers j-k).

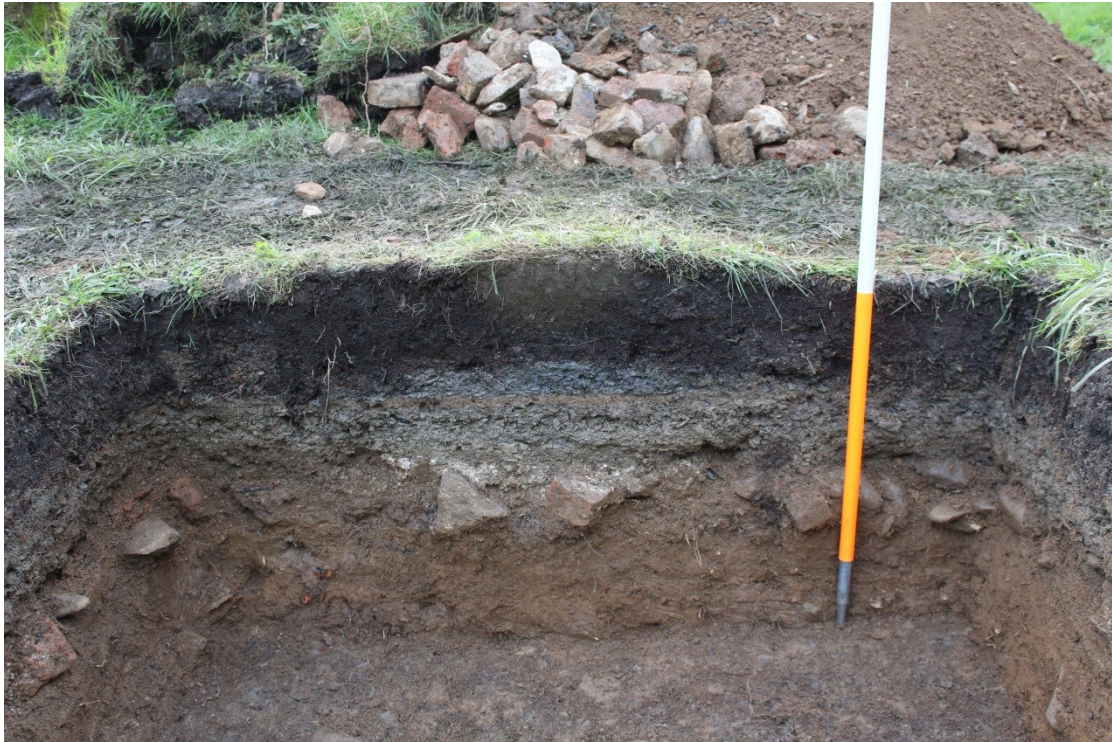
### **Test Pit 2 (Figure 8)**

- 4.6.6 A 1m by 0.5m test pit was excavated across the path that led southwest from Glasshouse 1.
- 4.6.7 This path was still visible on the ground as a slightly raised linear bank and can be seen in the aerial photograph taken in the 1950's shown in Figure 7.
- 4.6.8 The test pit revealed the path to be formed from ash and clinker with an obvious camber (Photo 57).
- 4.6.9 It is probable that the ashes and clinker were a product from the boiler house of Glasshouse 1.



**Photo 55:** Excavating layer (h) within Test Pit 1.



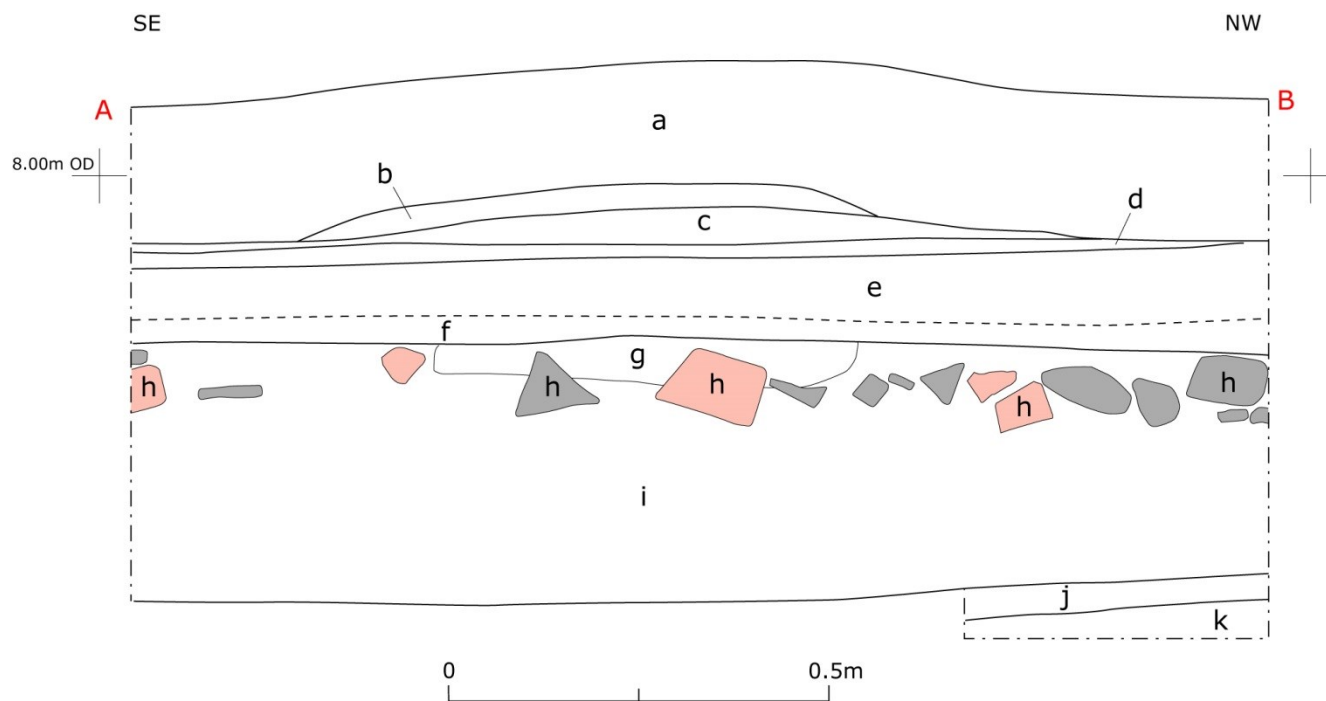


**Photo 56:** The northeast facing section of Test Pit 1. 1m scale



**Photo 57:** Test Pit 2 showing the remains of the cambered ash path. Looking southwest. 1m scale





- a - dark brown, silty-clay containing fragments of smallstone and coal.
- b - dark brown, silty-clay; similar to (a) but slightly redder and contains more coal fragments
- c - compact layer of dark grey, small stones/chippings.
- d - layer of orange-brown sand.
- e - compact layer of light grey small stones/chippings.
- f - similar to (e) but finer.
- g - light orange-grey, silty-clay containing pieces of white lime plaster.
- h - layer of stone and brick.
- i - orange-brown, silty-clay. Occasional small stone, roots and lumps of clay.
- j - compact layer of sub-rounded stone within a grey, silty-clay matrix (natural).
- k - compact layer of sub-rounde d stone within a yellow, silty marix (natural).

**Figure 14:** Northeast facing section of Test Pit 2 showing profile through cambered path.

4.6.10 More recent paths were revealed during the 2017 investigations. These paths gave access to different areas of the walled garden and divided up some of the garden into cultivation beds (Figure 8).

4.6.11 The paths were created from many different materials including bricks (Photo 58), stone and cement slabs and even re-used gravestones whose inscriptions had been made illegible and then placed inscription downwards (Photo 59).



**Photo 58:** A brick path. 2 x 1m scale



**Photo 59:** Paths constructed from some re-used gravestones near Glasshouse 1



#### **4.7 Garden Walls**

- 4.7.1 A photographic survey was undertaken of the interior faces of the walled garden walls.
- 4.7.2 The north, east and west walls were constructed from handmade bricks. No makers marks were found on any of the bricks.
- 4.7.3 In contrast to the three brick walls the south wall was constructed from stone (Photos 60 & 61) and was a later addition, as demonstrated by the 1822 estate map (Figure 3) that shows no south wall but a linear sloping bank at this location.
- 4.7.4 The brick walls, particularly the east and south walls, are pock marked with a large number of small holes (Photo 62). These holes are a result of hammering in nails for the training of fruit trees along the south facing walls, and nails were still present in many of the holes.
- 4.7.5 One small metal label with 'Early Plum' inscribed on it was found still attached to the south facing wall (Photo 63).



**Photo 60:** The north face of the south wall. 2m scale





**Photo 61:** The southwest corner of the walled garden showing the later stone built south wall where it butts the west brick wall. 2m scale

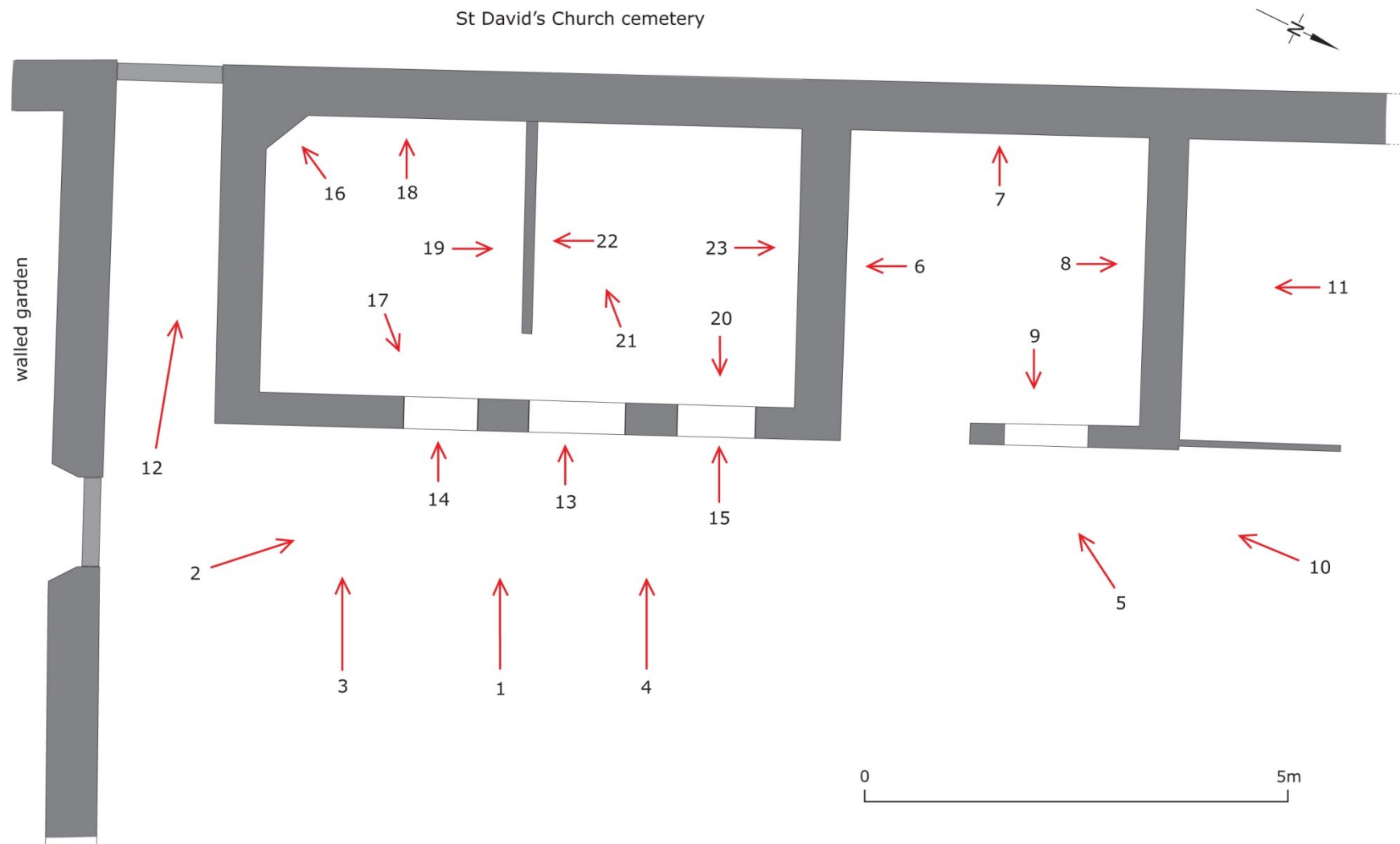




**Photo 62:** Close up of the some of the many small nail holes (some nails still *in situ*) within the south facing wall of the walled garden.



**Photo 63:** Close up of a small metal label with 'Early Plum' inscribed on it was found still attached to the south facing wall



**Figure 15:** Floor plan of the building known as the Bothy showing position and direction of photographs shown below.



#### **4.8 The Bothy Photographic Survey**

- 4.8.1 The bothy is a small stone built rectangular building situated just outside the walled garden (Figure 8), built against the west wall of the Bishop's Palace. It is shown on the 1843 estate map but not the earlier 1811 map. The Bothy measures approximately 4.0m by just over 7.0m (Figure 15), and attached on the north side is an outbuilding measuring roughly 4.0m square.
- 4.8.2 A photographic survey of the Bothy was undertaken after the ivy covering the building was removed (Photo 1). The building was in poor condition and the roof had failed in places.
- 4.8.3 On the east side of the Bothy was a gothic style wooden doorway flanked by similarly styled wooden framed windows. The doorway was off centre and opened into the northern room of two ground floor rooms. The rooms were separated by a partition wall. The remains of a fire place were recorded in the southwest corner of the southern ground floor room and a small wooden bench or work table was situated in front of the window. The remains of a step ladder that may have given access to the loft space were recorded. The loft space would have been lit by a small window in the southern gable end wall.
- 4.8.4 Garden bothies were often living quarters for young unmarried gardeners, so they could be on hand to keep the boilers fuelled, to open and close windows for ventilation, as well as watering where necessary during the evenings and at weekends.



**Survey Photo 1:** Arched door and windows  
before vegetation clearance - exterior





**Survey Photo 2:** Arched door and windows – exterior. 1m scales



**Survey photo 3:** Southeast corner – exterior. 1m scales





**Survey Photo 4:** Northeast corner – exterior. 1m scales



**Survey Photo 5:** Exterior wall & window of attached outbuilding. 1m scales





**Survey Photo 6:** Northern gable end of Bothy building - exterior. 1m scales



**Survey Photo 7:** Rear east facing wall of outbuilding - interior. 1m scales





**Survey Photo 8:** South facing wall of outbuilding - interior. 2m scales



**Survey Photo 9:** West facing wall of outbuilding – interior. 2m scale





**Survey Photo 10:** Exterior shot of Bothy and attached outbuilding. 1m scale



**Survey Photo 11:** North wall of attached outbuilding – exterior. 1m scales





**Survey Photo 12:** Doorway into St Davids Church cemetery. 1m scales



**Survey Photo 13:** Wooden doorway into the Bothy. 1m scale





**Survey Photo 14:** Southern window. 1m & 0.5m scales



**Survey Photo 15:** Northern window. 1m & 0.5m scales





**Survey Photo 16:** Interior shot of fireplace. 1m scale



**Survey Photo 17:** Interior shot of southern window. 0.5m scale





**Survey Photo 18:** Interior shot showing surviving wooden ladder. 1m scale



**Survey Photo 19:** Interior shot showing surviving wooden ladder and internal dividing wall. 1m scale





**Survey Photo 20:** Interior shot of northern window.  
1m scale



**Survey Photo 21:** Interior shot of internal east-west  
dividing wall. 1m scale





**Survey Photo 22:** Interior shot of internal east-west dividing wall. 1m scale



**Survey Photo 23:** Interior shot of south facing gable end wall of Bothy. 1m scale



## **5. CONCLUSIONS & RECOMMENDATIONS**

- 5.1 All the aims of the project were fulfilled as set out in the project design. With the aid of enthusiastic volunteers a larger area of the garden was cleared than had originally been anticipated and targeted excavation of small areas showed the survival of evidence of former paths and structures such as the Orangery. The average number of volunteers per day was eight.
- 5.2 The footprints of the glasshouses and other structures; paths and associated heating pipes and boiler areas were recorded in plan and by photograph.
- 5.3 A detailed topographic survey was carried out of the whole of the walled garden and its surrounding area, including the Bothy. The Bothy was recorded to a Level 2 standard as defined in the 'Understanding Historic Buildings: A Guide to Good Recording Practice' (Historic England 2016). A photographic survey was also undertaken of the interior walls of the walled garden.
- 5.4 An account by Mrs J T Davies the eldest daughter of Bishop John Owen recounts that whilst a child she remembers in c.1900 the walled garden as 'very large and well-cultivated...in which were the greenhouses' (Davies, unknown date.). She says 'we grew pineapples for years until it became too expensive'. There was also 'a lovely vine house divided into two parts so there was a sequence of grapes', another smaller greenhouse 'had orchids and lots of maidenhair fern growing in it', while 'yet another house had flowers such as camellias growing in it and in one corner was an orange tree' and they grew '...pineapples for years until it became too expensive.'.
- 5.5 Mrs Davies' account paints a picture of a well ordered thriving kitchen garden with a number of greenhouses producing exotic varieties of fruit and vegetables for the Bishops Palace. The discovery of a window opening mechanism marked 'Messenger & Co London' points towards at least one greenhouse having been designed by Thomas Messenger; one of the foremost designers of glasshouses in Victorian and Edwardian Britain.
- 5.6 It is suggested Greenhouse 1 could have been the vinery referred to above. Greenhouses 2 & 3 were constructed for the growing of heat loving plants and tropical fruits; which could have included camellias, orange trees and pineapples. A fernery was not identified during the investigations; often built on the cooler north side of the back wall this has yet to be discovered.
- 5.7 Wilson (1998) describes how ideally in the 19<sup>th</sup> century one would enter the kitchen garden from the house's pleasure grounds and be led to the glasshouses 'along a path lined with low box hedging, herbaceous beds and espaliered fruit'. It is easy to imagine that this was once the case at the Bishop's Palace walled garden



- 5.8 The underground boiler for Glasshouses 2 & 3 may well be similar to that recently recorded by Dyfed Archaeological Trust at Glanarberth House, Ceredigion (PRN 57526).



**Photo 64:** The underground boiler at Glanarberth House, Ceredigion (PRN 57526)

- 5.9 Recommendations for further work within the walled garden do depend on the aims of the Tywi Gateway Trust and how it is envisaged that the walled garden will be presented and/or used.
- 5.10 As a community project it generated a great deal of interest and enjoyment, and if required that interest could be harnessed to undertake targeted excavation within the area of the walled garden. The investigations showed the complexity of the structures as a result of being constantly adapted and altered over the years. Developments in gardening over a period of nearly 200 years are reflected in the changes within the Bishops' Palace walled garden.
- 5.11 Further archaeological work to understand these developments could include targeted excavation of what survives in the area of the possible boiler house for Glasshouses 2 & 3 on the outside of the north wall. It is here one would also expect to find the fireplaces for the hot wall heating system. Fireplaces must also have existed for the hot wall system in the east wall and could these be related to the rectangular structure only shown against the east face of this wall on the 1843 estate map? This may be another area worth further investigation. The trench excavated within the area of the Orangery indicated that below ground remains survived and excavation may well reveal the date and phasing of this building.



## **6. SOURCES**

### **Published**

Wilson C A, 1998, *The Country House Kitchen Garden 1600-1905*, Sutton Publishing.

### **Unpublished**

Cambria Archaeology 2005, *Bishop's Park Abergwili: Historic Landscape Survey*, Cambria Unpublished Report

Davies J T , unknown date, *Impressions of Abergwili Palace before the fire and description of the fire* by Mrs J T Davies, formerly Owen, eldest daughter of Bishop John Owen. Typescript held in the Dyfed Historic Environment Record, under PRN 1743.

### **Database**

Dyfed Archaeological Trust Historic Environment Record

RCAHMW Coflein Database <http://www.coflein.gov.uk/>

Cof Cymru - National Historic Assets of Wales

<http://cadw.gov.wales/historicenvironment/recordsv1/cof-cymru/?lang=en>

### **Map**

Carmarthenshire Record Office, John Francis Collection, Map of Abergwili Park,  
1843-58.

National Library of Wales, St Davids Map Book, 1796.

National Library of Wales, St Davids Map Book, 1811.

1<sup>st</sup> edition, Carmarthenshire, 1:25000 Ordnance Survey, 1889.

2<sup>nd</sup> edition, Carmarthenshire, 1:25000 Ordnance Survey, 1906.

### **Aerial photograph**

J P Storey Meridian Air Photos, SN 42 SW, 1955 (Dyfed Historic Environment Record)



**7. PROJECT ARCHIVE**

Project Number: FS16-050

Project Name: Bishops palace Walled Garden Archaeological Investigation

Event Record Number: 110318

Digital Photographs: x 425 JPEGs

Digital Photographs Film Number: 110318

Digital Photographic catalogue x 1

Survey data: 3 GS5 files



## APPENDIX 1

### THE TYWI GATEWAY PROJECT – BISHOP’S PARK, ABERGWILI WRITTEN SCHEME OF INVESTIGATION FOR ARCHAEOLOGICAL WORKS WITHIN THE WALLED GARDEN AND THE AREA TO THE NORTH, INCLUDING THE BOTHY DYFED ARCHAEOLOGICAL TRUST

DAT Archaeological Services has completed the topographic surveys of the following elements of the Bishop’s Park at Abergwili, Carmarthen: The Bishop’s Garden; The Bishop’s Meadow; The Walled Garden; and the causeway and island.

Following a request from Michael Norman on behalf of the Tywi Gateway Project, the following scheme of archaeological works is proposed to record the site of the Bothy and the Walled Garden at the Bishop’s Park, Abergwili, Carmarthen.

This written scheme of investigation outlines the methodology through which DAT Archaeological Services (in conjunction with volunteers for some elements) would undertake the proposed archaeological works. This document has been prepared for the client (WHGT) and is specifically prepared for DAT Archaeological Services to undertake the required archaeological works. The WSI cannot be used by any third party.

#### 1. RECORDING METHODOLOGY

##### 1.1 The Bothy:

- 1.1.1 The historic building recording scheme would be undertaken to a Level 2 standard as defined in the ‘*Understanding Historic Buildings: A Guide to Good Recording Practice*’ (Historic England 2016). This level of recording is described thus:
- 1.1.2 Level 2 is a ***descriptive record***, made in similar circumstances to Level 1 but when more information is needed. It may be made of a building which is judged not to require a more detailed record, or it may serve to gather data for a wider project. Both the exterior and interior of the building will be seen, described and photographed. The examination of the building will produce an analysis of its development and use and the record will include the conclusions reached, but it will not discuss in detail the evidence on which this analysis is based. A plan and sometimes other drawings may be made but the drawn record will normally not be comprehensive and may be tailored to the scope of a wider project.
- 1.1.3 The on-site survey will then complete the relevant tasks outlined below, where possible, to ensure that the record is completed to the Level 2 guidelines, building on the known information. Only photos taken during this survey will be included within the site archive and report, but copies of plans and details recorded previously may be used, if permission is given.

##### **Drawn Record**

- Sketched plan, section, elevation or detail drawings (if a more thorough drawn record is not made). Sketches may be roughly dimensioned. It is anticipated that plans and elevations of the extant buildings already recorded by Acanthus Holden will be used and annotated within the report for the various buildings.
- A site plan, typically at 1:500 or 1:1250, relating the buildings to other structures and to related topographical and landscape features.

##### **Photographic Record**

- A general view or views of the buildings (in their wider setting or landscape).
- The building’s external appearance. Typically a series of oblique views will show all external elevations of the buildings, and give an overall impression of their size and shape.



- The overall appearance of the principal rooms and circulation areas of each structure. The approach will be similar to that outlined in 2 above.

#### **Written Record**

- The building's precise locations, as National Grid references and in address form.
- A note of the statutory designations (listing descriptions where relevant). Non-statutory designations (historic parks and gardens registers, local lists etc) may be added.
- The date of the record, the name(s) of the recorder(s) and, if an archive has been created, its location.
- A summary of the building's type or purpose, historically and at present, their materials and possible date(s). The names of architects, builders, patrons and owners should be given if known.

### **1.2 The Walled Garden**

- 1.2.1 For the Walled Garden I propose a simple photographic survey of the interior and exterior of the walls at the start of the project. Additional recording of details or features within the interior of the walls will be undertaken as part of the investigations within the Walled Garden outlined below.

#### **Photographic Survey**

- 1.2.2 A series of overlapping photographs will be taken around the perimeter of all accessible areas of the interior and exterior of the perimeter walls of the Walled Garden, with scale bars, to provide a complete picture of the present state of the walls. This process could identify features within the walls that may require additional record. It will include photographs showing general views of the Garden and its surroundings.
- 1.2.3 Photographs will be merged to show complete views of the walls.

#### **Uncovering of Garden Features**

- 1.2.4 It is proposed that with the assistance of volunteers, a programme of limited vegetation and soil clearance will be undertaken across the tops of the former features within the Walled Garden. This will include the footprints of the glasshouses and other structures; paths and associated heating ducts and boiler areas.
- 1.2.5 Features will be cleaned with a mix of shovels, trowels and brushes to clear brickwork, masonry or paths and areas of former flower beds. The exposed remains will be photographed with a mix of general and detailed shots. Exposed remains would be planned at an appropriate scale and surveyed using a Trimble TST. Written descriptions of the exposed remains would also be made.
- 1.2.6 Where features have been identified on the interior of the walls of the Walled Garden, these will also be cleaned and recorded as above.
- 1.2.7 It is suggested that the works would be supervised by professional archaeologists and undertaken by volunteers. The works would be undertaken over a period of 3 weeks. Training would be provided to volunteers in the various aspects of appropriate archaeological techniques in order that they may then have the opportunity to use these in the future when professional archaeologists were not present (assuming this is agreed by all parties and an appropriate recording methodology is adhered to). It is the intention that in the longer term further recording works could be carried out at the site without the need for a permanent professional archaeological presence.
- 1.2.8 All archaeologically significant artefacts, ecofacts and samples will be retained and, where possible, related to the contexts from which they derived. Sensitive materials will be stored in appropriately stable conditions.

- 1.2.9 Finds will be temporarily stored by the DAT Archaeological Services in stable conditions. All finds, except those deemed to be Treasure<sup>2</sup>, will remain the property of the landowner, but it is assumed that permission has been given by the landowner for these to be stored as part of the archive in a suitable repository (ownership will still be with the landowner).
- 1.2.10 Under the 1996 Treasure Act, "treasure" can be summarised as:
- Any object other than a coin containing at least 10% gold or silver and at least 300 years old;
  - Any prehistoric assemblage of base metal;
  - Coins found together which contain 10% gold or silver (but no single coins) and groups of at least 10 coins of other metals, provided they are at least 300 years old;
  - Any object found associated with treasure except unworked natural objects; and
  - Any object which would have been Treasure Trove before the 1996 Act but not covered above.
- 1.2.11 In the very unlikely event of the discovery of human remains they will, at this stage, be left *in situ*. If removal is necessary it will only take place following the granting of all permissions in writing by the relevant authorities and at a later stage of any necessary archaeological works (the Coroner must be informed and a burial licence granted from the Ministry of Justice). The potential for burials to be present is considered negligible.
- 1.2.12 At this stage there are no specific plans for how the walled garden will be renovated or restored (other than the perimeter walls themselves will be made good). There will thus be no need to remove any structural elements at this stage, and all exposed remains can be left visible. The information gleaned from the remains will be useful in informing future restoration proposals. The scope of any further mitigation necessary can be determined once proposals for the walled garden are determined.

## 2. POST-FIELDWORK REPORTING AND ARCHIVING

- 2.1 All data recovered during the various stages of fieldwork will be collated into a site archive structured in accordance with the specifications in *Archaeological Archives: a guide to best practice in creation, compilation, transfer and curation* (Brown 2011), and the procedures recommended by the National Monuments Record, Aberystwyth. The *National Standards for Wales for Collecting and Depositing Archaeological Archives* produced by the Federation of Museums and Art Galleries of Wales will also be adhered to.
- 2.2 The results of all stages of fieldwork will be assessed in local, regional and wider contexts.
- 2.3 The reports on the various stages of fieldwork will include a summary the project background and historical summaries.
- 2.4 The project archives, including all written, drawn, photographic, digital data, significant artefacts and ecofacts (excepting those which may be deemed to be Treasure Trove) will be deposited with an appropriate body following agreement with the landowner.
- 2.5 DAT Archaeological Services will arrange for the deposition of finds, and ascertain the costs of storage and deposition, with an approved body before the project commences and inform the curator of the arrangement which has been made (it

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<sup>2</sup> If any material deemed to be Treasure is found, the Coroner must be informed



is anticipated that finds from the site archive will be deposited with Carmarthen Museum and the paper and digital records with RCAHMW).

- 2.6 A summary of the project results, excluding any confidential information, may be prepared for wider dissemination (e.g. Archaeology in Wales and special interest and period-specific journals).
- 2.7 The report will be prepared to follow the relevant Chartered Institute for Archaeologists *Standards and Guidance* (CIfA 2014).
- 2.8 Two bound copies of the reports will produced for the client on all stages of work. Digital copies in pdf format will also be supplied if required. Bound copies of the reports will also be produced for Dyfed Archaeological Trust Heritage Management and the regional Historic Environment Record.
- 2.9 Records created from further investigations in the walled gardens by volunteers will also need to be checked and included as part of the site archive.

### **3. MONITORING**

- 3.1 The fieldwork may need to be monitored by Dyfed Archaeological Trust Development Management section, in their role as archaeological advisors to the planning authority, who should be provided access to the site at any time during the works. The Head of DAT Archaeological Services may also monitor on-site works.

### **4. STAFF**

- 4.1 The project will be managed by James Meek, Head of DAT Archaeological Services.
- 4.2 The on-site recording work and volunteer supervision will also be undertaken by experienced members of staff of DAT Archaeological Services.

### **5. HEALTH AND SAFETY**

- 5.1 All permanent members of DAT Archaeological Services staff are CSCS<sup>3</sup> registered.
- 5.2 DAT Archaeological Services will carry out a health and safety risk assessment to ensure that all potential risks are minimised.
- 5.3 All relevant health and safety regulations must be followed.
- 5.4 All site inductions, H&S procedures, H&S constraints and site rules of the client or any on-site contractor will be made known to DAT Archaeological Services staff at the start of the works.
- 5.5 Safety helmets, high visibility vests and boots are to be used by all site personnel as necessary, although the works will not be in high risk areas involving hand excavation and it is unlikely these will be required.
- 5.6 The trenches will be hand excavated and will be left open for a few days. Trenches / working areas will be surrounded by orange Netlon fencing or hazard tape to prevent accidental ingress by visitors to the gardens. Bilingual signage will also be erected to warn of the dangers of the excavation areas.

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<sup>3</sup> *Construction Skills Certification Scheme (Health and Safety Tested)*

- 5.7 A full risk assessment for the works will be prepared and agreed in consultation with WHGT prior to the start of the works.
- 5.8 It is presumed that the facilities within Carmarthen museum could be used by site staff during the survey / excavation. If this is not possible there may be additional costs to hire in welfare facilities.
- 5.9 It is known that the Walled Garden contains significant quantities of glass left over from the former glass houses. All site staff and volunteers will be made aware of the risk of glass on the site and they shall wear stout boots or safety boots and strong gloves to prevent cuts.

## **6. QUALITY ASSURANCE**

- 6.1 DAT Archaeological Services has considerable experience of undertaking all categories of archaeological fieldwork and always operates to best professional practice; adhering to CIfA guidelines where appropriate. The Trust is a Registered Organisation with CIfA and all staff abide by their code of conduct and adhere to their relevant standards and guidance.
- 6.2 DAT Archaeological Services operate robust internal monitoring procedures that ensure that the standard of each project is maintained from commencement to completion.



# THE TYWI GATEWAY PROJECT – BISHOP'S PARK, ABERGWILI THE WALLED GARDEN: ARCHAEOLOGICAL INVESTIGATION 2017

RHIF YR ADRODDIAD / REPORT NO. 2017/2  
RHIF Y PROSIECT / PROJECT RECORD NO. 110318

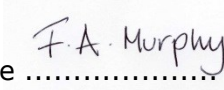
**Chwefror 2018**

**February 2018**

Paratowyd yr adroddiad hwn gan / This report has been prepared by

**Fran Murphy**

Swydd / Position: **Project Manager DAT Archaeological Services**

Llofnod / Signature .....  Dyddiad / Date 13/03/2018

Mae'r adroddiad hwn wedi ei gael yn gywir a derbyn sêl bendith  
This report has been checked and approved by

**James Meek**

ar ran Ymddiriedolaeth Archaeolegol Dyfed Cyf.  
on behalf of Dyfed Archaeological Trust Ltd.

Swydd / Position: **Head of DAT Archaeological Services**

Llofnod / Signature .....  Dyddiad / Date 09/03/2018

Yn unol â'n nôd i roddi gwasanaeth o ansawdd uchel, croesawn unrhyw sylwadau sydd  
gennych ar gynnwys neu strwythur yr adroddiad hwn

As part of our desire to provide a quality service we would welcome any comments you  
may have on the content or presentation of this report

