



Cambridge Archaeology Field Group

Excavation of cold and forcing frames in the  
walled garden yard

Wimpole Hall

Cambridgeshire

30<sup>th</sup> 31<sup>st</sup> May and 2<sup>nd</sup> June 2014

## Summary

Over three days members of CAFG excavated and recorded the brick work foundations of three buildings in the gardeners' yard at Wimpole Hall. Two of the structures appear to be garden frames one of which later had heating pipes. The third building was a more elaborate structure with a central chamber and chambers along the north and south sides. Again at a later date an extensive cast iron piped heating system was installed. All three structures are likely to date from the mid to late 19<sup>th</sup> century.

## Introduction

At the request of Philip Whaites, Head gardener, and Angus Wainwright, NT Regional Archaeologist, members of CAFG were asked to excavate the site of a row of horticultural growing frames in the yard north of the walled garden at Wimpole. The brick foundations had been known of by NT staff for many years and in February 2014 they excavated a small trial trench was excavated across the eastern part of the site exposing brick walls and cast iron heating pipes. The NT are investigating the possibility of rebuilding some of these structures and the glasshouses to the north. The yard's containing wall would be rebuilt and new workshops constructed outside to the north thus developing the area for public admission.

## Location

The site is in the gardeners' yard on the north, outside the walled garden. The buildings appeared to be a series of cold and heated frames running east to west 14.8m north of the north east brick building backing on to the garden wall.

## Historic background

There are no photographs of the horticultural frames excavated, although one of c 1970's shows two frames which are probably further east than those excavated. The walled garden was built in 1790's as part of the improvements by Emes and Soane. The bothy yard with an outer wall, now partly fallen, was built in mid/late 19<sup>th</sup> century, the outer wall does not appear on the maps by Withers in 1828 but are present on the 1<sup>st</sup> series OS map.

## Aims

The excavation was undertaken to give an understanding of the foundations and the function of the cast iron water pipes seen in the trial trench.

## Methods

Most of the site was covered with limestone chippings with beneath these a layer of brick and soil sealing the interior of the structures. This material was removed by hand using mattocks and shovels. Where detailed features showed these were excavated using trowels but other than in the southern extension of feature A [the eastern building] no intact fill was removed.

## Results

Three different structures were identified, A, B, and C shown on plan 1 and 2. In addition there were two pieces of un-mortared brickwork not obviously associated with A, B or C.

## Structure A

This structure consisted of a central rectangular chamber 2.32m x 6.0m with further integral chambers along the north and south sides increasing the north to south span of the central chamber from 2.32m to 4.12m. The walls of the inner chamber [2] [3] [4] [5] were built of yellow brick which had a characteristic double frog, the western end wall [2] was of solid construction 0.3m wide and 0.7m deep with seven courses of brick surviving. The eastern end wall [4] was narrower than [2] at 0.22m and was originally

continuous from its junction with walls [7] to [6], the full width of the building. The south [5] north [3] walls were constructed with the same style of yellow bricks, on edge on the inner face and laid flat on the outside with a 0.03m space between the two faces joined by bricks at regular intervals.

The chamber wall to the south [6] was 0.6m from the south wall, the brick work being continuous from [4] but having an irregular junction after it had turned north to join [2]. Wall [6] bows slightly inwards, to the north. Excavation of the red ashy fill at the west end [13] uncovered a curious mortar spread [14] within the fill overlying more dark soil [15] with natural grey clay at 0.54m.

The north chamber with wall [7] would appear to be of the same construction as [2] and [4] but the junctions with these two had been destroyed by the later water pipe duct [8].

Cast iron pipes associated with structure A.

Outside to the west of wall [2] is a cast iron pipe [9] starting where wall [2] meets walls [6] and [5]. Part of the brick work of [6] had been cut away to allow the pipe [9] to extend beyond the end of wall [2], at this point the pipe is heavily corroded but appears to turn up vertically. This pipe passes around the end of the junction of walls [2] and [3] into a brick built duct [8] running west to east alongside wall [3]. The same pipe [9] appears in the duct outside, to the east, of wall [4] and was not followed beyond this as there is a modern poly-tunnel standing there. In the same duct, below pipe [9] is pipe [10] which is the vertical pipe at the east end of wall [28] of structure B. What may be the side walls of the duct, noted below as possibly a narrow wall under wall [24] in structure B, appear to pre-date the building of wall [24].

Within the inner chamber of structure A a cast iron pipe [11] which enters in the north east corner at a high level goes around inside the chamber and although broken appears to leave at a lower level. The brick work where this pipe enters and leaves is a reddish colour and is later than the original building. Pipe [11] has a valve [12] near the south east corner and has an open end, much corroded, pointing south. The pipe is supported on brick piers [35] and [36]. This pipe was in part buried in the dark black soil [33] filling the chamber of structure A.

Outside of the north west and south west corners of structure A there is evidence of a possible foundation trench with cut [16] and [18] filled with brown soil and brick pieces [17] [19], but there is no similar cut along the western side of wall [2]. These are below pipe [9]

### Structure B

Two parallel walls [24] [28], 3.08m apart, extended 7.8m west from structure A, they are of similar rather casual build quality.

The north wall [28] survived to two courses on a shallow red brick rubble layer which rested on natural grey clay at c 0.26m. At the eastern end, abutting structure A, there was evidence of the wall being destroyed by a phase of building to the east as it had been cut to allow the inserting of the cast iron heating pipe [9].

Below this pipe was a brick structure [21] narrower than the overlying north wall of structure B, and protruding vertically through the lower wall was a cast iron pipe [10]. This brick structure [21] might be a continuation of the duct [8] running along the north wall [3] of A but the bricks on either side of the possible duct [21] appeared to go under the brickwork of the north wall [28] of structure B.

The southern wall [24] of structure B consists of a 0.40m wide yellow brick wall with a single row of mainly red brick [22] possible wall 0.10m to the south. The eastern end of the yellow brick part had been cut [18] by a trench which appears to be associated with the insertion of the southern end [6] of the western wall of structure A. But the red brick part [22] of structure B south wall continued on to abut the above extension [6]. In a few places the redbrick structure retained slate sitting on the top [27].

The cast iron water pipe running west of the wall [2] of structure A was broken at its south end but appeared to turn up vertically. This pipe [9] at its northern end turned sharply east just to the north of wall [2/3] of structure A and then ran east parallel to that wall in a purpose built brick duct [8].

### Structure C

The north [30] and south [31] wall foundations were uncovered to a depth of about 20cm. Both walls were well built of yellow brick of one course, resting on a shallow mortar foundation [29]. Between the north wall and structure B to the east [28] there was a break in the brickwork, probably damaged and removed fairly recently. The southern wall [31] abutted that [24] of structure B and although they were of different quality and build the end of [31] seemed to share a brick with [24]. This suggested that they stood at the same

time. What might be two remaining bricks of a wall [32] which appeared to sit on a mortar base could have been the dividing interior wall between C and B.

### **Other features.**

To the north west of structure A are 6 bricks laid [20] on rubble, the latter was not excavated. Where the south walls of structure B meets structure C, to the south outside the structure is a shallow brick drain, possibly associated with [23] the space between [22] and [24]. This ran beyond the four bricks exposed but was not further explored.

### **Discussion and Conclusions**

The foundations of three brick built structures, A, B and C, were uncovered, B and C are represented by their north and south brick walls, now one or two courses but A has more substantial foundations. The nature of the junction of the south walls [24] and [31] suggests the C was built after B and there is slight evidence [32] that there was north south wall built at the same time as C.

At the east end of the range of structures is a more elaborate building, structure A which on the evidence of the possible construction trenches [16]/[17] and [18]/[19] was built after structure B. Unfortunately the installation, at a later date, of cast iron heating pipes has made it difficult to be sure of the relationship. It is possible that structure B had an earlier build represented by the brick work [21] of a narrower possible wall under [28] at the east end of the north wall [28] although this may be part of the water pipe duct [8].

Without destroying built archaeology it might prove difficult to answer this question.

Structure A, of three chambers, appears to be all of one build in yellow bricks with a characteristic double 'frog'. The western end wall is thicker than the eastern and there is a curious non-conformity where the wall of the south chamber [6] meets the western wall [2] of the main chamber. The north and south walls of the inner chamber [3] [4] were built with a cavity, possibly to improve heat retention.

At some time after the building of structure A, a cast iron heating pipe system was installed. This was fed by two pipes, one above the other, entering from the east in a brick built duct along and outside the north wall of the inner chamber, cutting through the walls of the outer north chamber. There are likely to be T junctions off these pipes to feed the pipes which go around inside the inner chamber [11], but the intact brick work was not destroyed to prove this. The vertical pipe [11] in wall [3] may have been a return connected to the corroded open end of the pipe [11] next to wall [4]. Likewise the vertical pipe in wall [28]/[8] may have connected to the open end of pipe [9] at the south end of wall [2].

It seems likely that structure B preceded A and that C was later than B. At some time after its construction building A was modified with the installation of heating pipe both on the ground and above and this system extended above ground into structure B. All the bricks appear to be hand made yellow or pink/yellow of likely mid 19<sup>th</sup> century date except for the red bricks in B [22] which may be re-used 18<sup>th</sup> century.

**List of finds:**

Site	Context	<sup>1</sup> Find	No.	Description	Est. period
WIM016	1	Pot	4	Redware body sherds – flower pot	19/20th
WIM016	1	Pot	3	Redware rims – flower pot	19/20th
WIM016	1	Pot	1	Redware base – flower pot	19/20th
WIM016	1	Pot	2	Redware rim – decorated strip vertical strokes	19/20th
WIM016	1	Pot	4	Redware body sherds with names as below	19/20th
WIM016	1			SHANK	
WIM016	1			GHAM SANK	
WIM016	1			NGHAM S	
WIM016	1			NKEYS	
WIM016	1	Pot	5	White glazed earthenware	19/20th
WIM016	1	Pot	14	blue/white transfer decorated wares	19/20th
WIM016	1	Pot	3	Stoneware	19/20th
WIM016	1	Pot	1	White glazed container THE ONLY P / MA	19/20th
WIM016	1	Glass	3	Window 1 with moulded decoration	19/20th
WIM016	1	Glass	1	Clear glass vessel base heavy octagonal	19/20th
WIM016	1	Tile	1	Pink/yellow hand made	?18th
WIM016	1	Tile	1	Yellow/white tile	19/20th
WIM016	3	Pot	14	Redware body sherds – flower pots	19/20th
WIM016	3	Pot	1	Redware rim	19/20th
WIM016	3	Pot	2	Redware base 1 with horizontal drain hole	19/20th
WIM016	3	Pot	1	Yellow glazed earthen ware	19/20th
WIM016	3	Pot	1	White glazed earthen ware	19/20th
WIM016	3	Pot	2	Stoneware base with slag attached	19/20th
WIM016	3	Slag	4	ash residue from coal	19/20th
WIM016	3	Tile	1	Yellow/white tile	19/20th
WIM016	3	Glass	3	Pieces glass bottles and container	19/20th
WIM016	3	Glass	1	Window glass clear	19/20th

**Small Finds**

Site	Context	Find	No.	Description	Est. date
WIM016	1	Stone	1	Decorated vase handle found by garden staff Coadstone from an ornamental vase SEE PHOTO	18/19th
WIM016	1	Metal	1	Coin 2p 1981	20th

<sup>1</sup> Finds : Bone brick Clunch Coal Glass vessel Glass window Metal Mortar Pipe Pot Shell Slate Slag Stone Tile

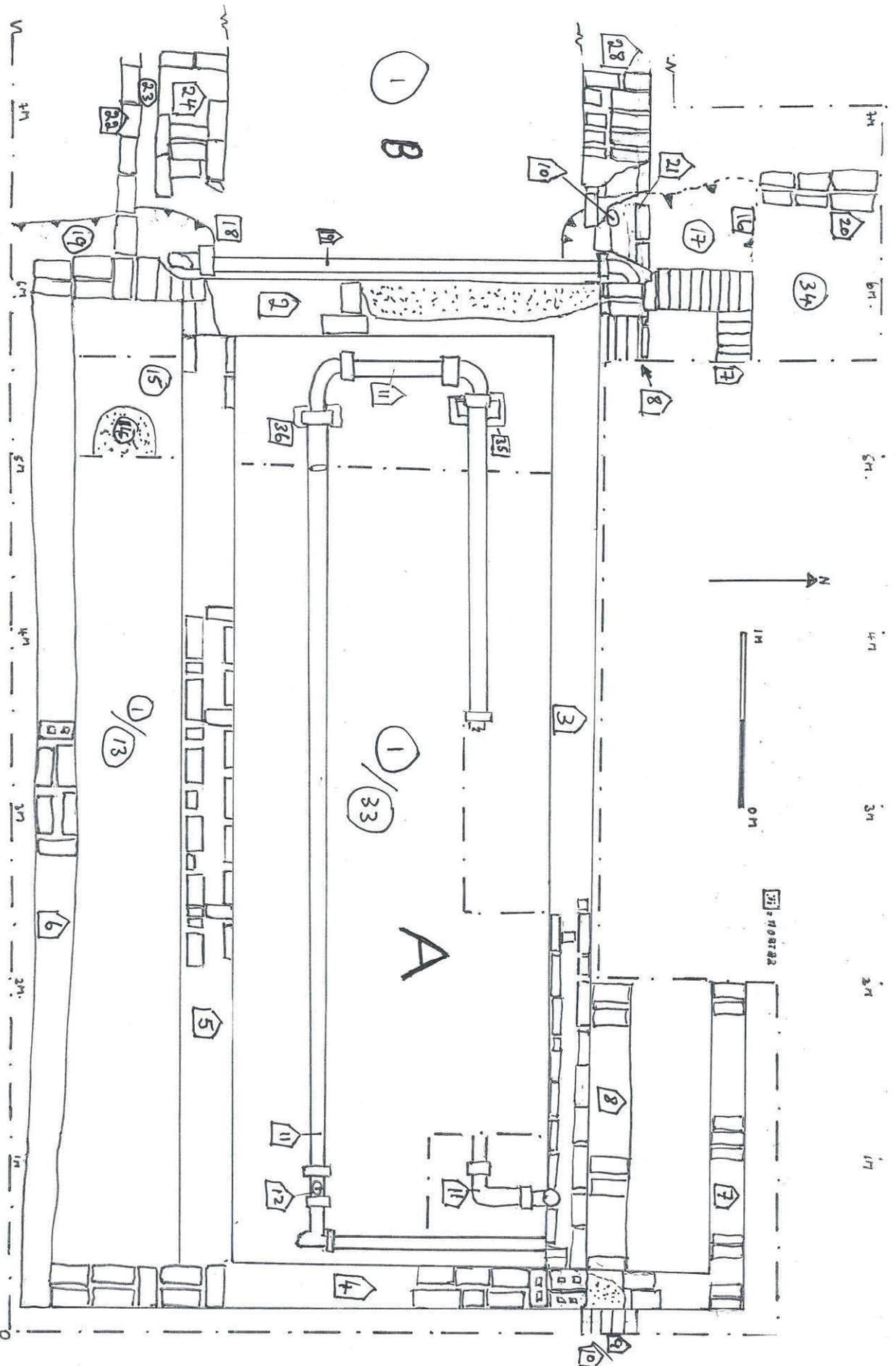
## List of contexts

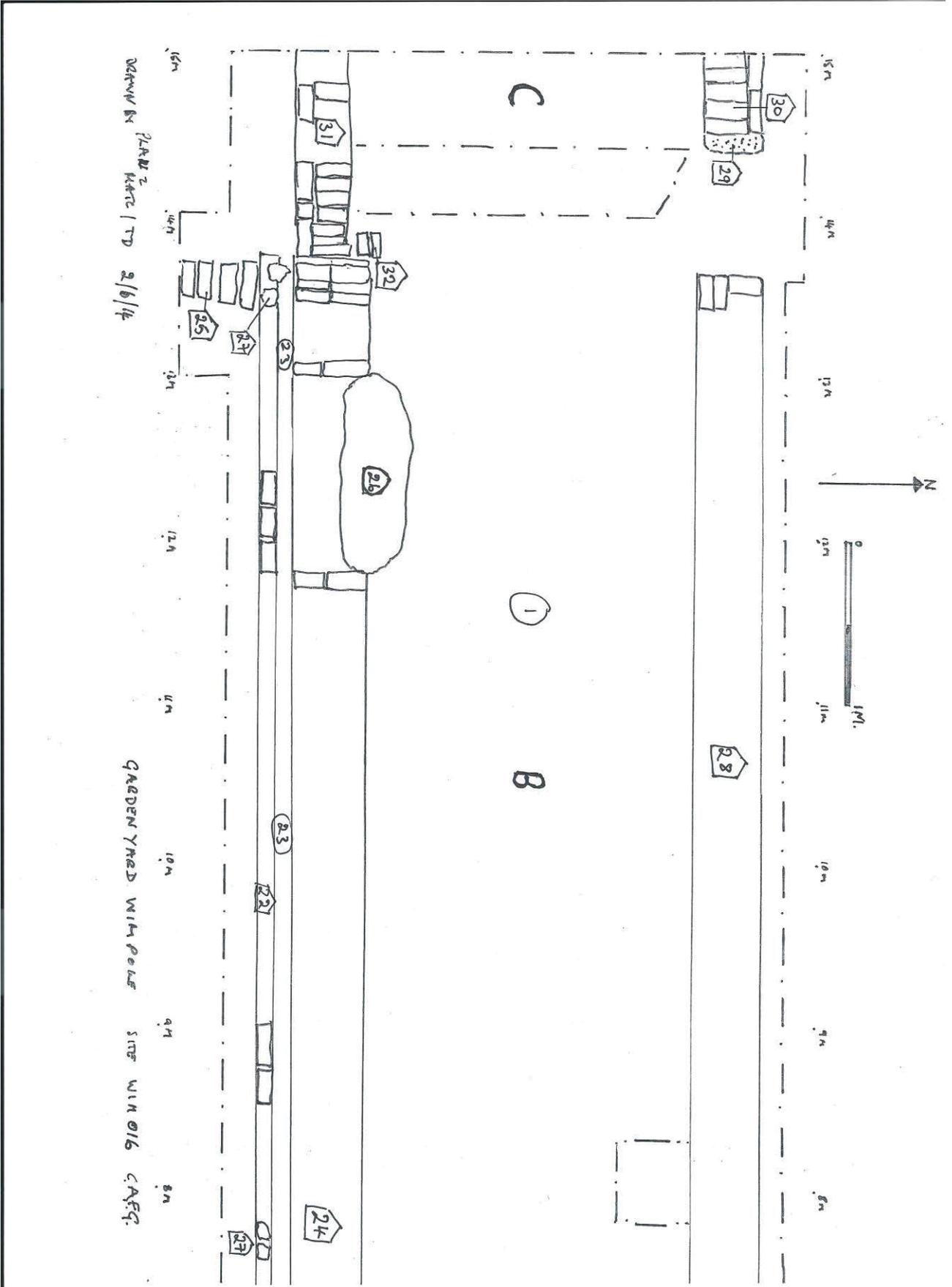
Site	Building	Context No.	Description	Category	Ex'tor	Date	Sec/plan	Below	Comment	Phase
WIM016	A	1	Limestone chip and brick rLayer			30/05/14	1&2	1		
WIM016	A	2	Yellow brick wall	Structure		30/05/14	1	1		
WIM016	A	3	Yellow brick wall	Structure		30/05/14	1	1		
WIM016	A	4	Yellow brick wall	Structure		30/05/14	1	1		
WIM016	A	5	Yellow brick wall	Structure		30/05/14	1	1		
WIM016	A	6	Yellow brick wall	Structure		30/05/14	1	1		
WIM016	A	7	Yellow brick wall	Structure		30/05/14	1	1		
WIM016	A	8	Brick duct yellow	Structure		30/05/14	1	8		
WIM016	A/B	9	Cast iron pipe	Pipe		30/05/14	1	1,8		
WIM016	A/B	10	Cast iron pipe	Pipe		30/05/14	1	1,8		
WIM016	A	11	Cast iron pipe	Pipe		30/05/14	1	1		
WIM016	A	12	Stop cock	Pipe		30/05/14	1	1		
WIM016	A	13	Black soil with red ash	Fill		30/05/14	1	1		
WIM016	A	14	White/yellow mortar	Fill		30/05/14	1	13		
WIM016	A	15	Black soil	Fill		30/05/14	1	14		
WIM016	A/B	16		Cut		30/05/14	1	1	contains 17	
WIM016	A/B	17	Brown soil & brick	Fill		30/05/14	1	1		
WIM016	A/B	18		Cut		30/05/14	1	1	contains 19	
WIM016	A/B	19	Brown soil & brick	Fill		30/05/14	1	1		
WIM016	OTHER	20	Red brick	Structure		30/05/14	1	1		
WIM016	A/B	21	Wall or duct yellow brick	Structure		30/05/14	1	17	not clear	
WIM016	B	22	Red brick ? wall	Structure		30/05/14	1&2	27		
WIM016	B	23	Brown soil	Fill		30/05/14	1&2	1		
WIM016	B	24	Yellow brick wall	Structure		30/05/14	1&2	1		
WIM016	OTHER	25	Drain	Structure		30/05/14	2	1		
WIM016	B	26	Rubble deposit	Fill		30/05/14	2	1		
WIM016	B	27	Slate on wall	Structure		30/05/14	2	1		
WIM016	B	28	Yellow brick wall	Structure		30/05/14	1&2	1		
WIM016	C	29	Mortar	Structure		30/05/14	2	30		
WIM016	C	30	Yellow brick wall	Structure		30/05/14	2	1		
WIM016	C	31	Yellow brick wall	Structure		30/05/14	2	1		
WIM016	C	32	Yellow brick wall ?	Structure		02/06/14	2	1		
WIM016	A	33	Black soil	Fill		02/06/14	1	1		
WIM016	A	34	brick rubble	Fill		02/06/14	1	20		
WIM016	A	35	yellow brick pier	Structure		02/06/14	1	1	contained in 33	
WIM016	A	36	yellow brick pier	Structure		02/06/14	1	1	contained in 34	

Plan 1

PLAN. I.  
DRAWN BY MATC/TD 2/6/14

GARDEN YARD WINDPOLE  
SUN WINDOUB CAFE





Glasshouse excavation Wimpole 30, 31 May and 1<sup>st</sup> July 2014  
Illustrations



Site from west



Site from east

Structure A north east corner from south – pipe [11]



East end of structure B from south – south and north wall



Junction of structure B – on left- and structure C from north



North east corner of Structure A from south showing vertical pipe [10] and pipe [9] entering duct on north side of wall [3]



Coad stone vase handle from context 1

