

## Section 29 Subsidiary structures in S7-S20

Evelyn Baker

Cross-references to Digital Supplement in red  
Cross-references to Printed Synthesis in brown

### Introduction to Sections 29 and 30

Subsidiary structures are those that apparently used heat as a process for heating, cooking, smoking, drying, or malting grain, or for melting down lead or recycled metalwork. They were usually within structures [29.01]. There are two anomalous features: a possible tank SS11 that had been subjected to heat and a possible mortar mixer SS8 that had quantities of charcoal within its construction/fill. There were many structures of various types of construction and material, in different states of preservation. A minimum of 64 individual hearths or hearth sequences were recognised, the earliest probably dating from the mid- to late 11th century. While most are illustrated individually, they are also shown as outlines within the parent structure in the appropriate period structure illustrations. A rapid succession of hearths is represented in outline form. Location plans showing the position of individual hearths are supplied with the more complex sequences, a few of which have stratification diagrams. A distribution plan shows the placing of new hearths and the retention of earlier features, in order to demonstrate the level of activity at different periods in different zones of the site.

The sub-structures are presented as nearly as possible in the chronological order obtained from the context of the parent structure [29.02]. Not all examples are illustrated in detail since the remains of some were extremely fragmentary or repetitious.

[29.03] shows the sub-structures in chronological construction order, and marks their introduction into the building sequence together with their principal building materials, summarised in [29.04]. Details of the plaster and mortar constituents cannot be provided because reports on material sent for analysis have not been received. Each sub-structure is cross referenced into the Structure description.

Reference has been made to the relatively small number (17%) of features sampled by Clarke's archaeomagnetic dating [29.05]. This work was done in the final years of the fieldwork project when all apparently undisturbed hearth and oven sequences were subjected to what amounted to pioneering testing. Archaeomagnetic dating appears below the stratigraphic phasing and appears to correlate well with stratigraphic dating.

The subsidiary structures are divided into two Sections, [29] SS7-SS20, and [30] SS23-SS65.

S		2	3	4	5.1	5.2	5.3	5.4	5.5	5.6	6.1	6.2
1A	SS	28, 36, 37,59, 64,65,69	45									
	CF											
7	SS			1	2							
	CF			61	1							
9	SS											
	CF			2								
16	SS										48	
	CF										60	
17	SS						22	31,32, 33				
	CF					3		4,5,6				
18	SS				52,53, 54							
	CF											
19	SS									48,49		
	CF											
20	SS					5,7,12, 13						
	CF											
21	SS											
	CF				8							
22	SS											
	CF					46						
23	SS					6,9,10, 11	14,15,16, 19,21	23,28	41			
	CF					9,10	11			12		
27	SS											
	CF					11/12				12		
28	SS						17,18,20	24,27, 56	38,57		50	
	CF						13		14			
30	SS										51	
	CF											
38	SS								44			45
	CF						47	55				
41	SS							30	35,40			
	CF							50				
42	SS										15	
	CF							62	51			
43	SS						26	25,26 37	34,39	46		
	CF											
50	SS											
	CF						52					
51	SS											
	CF						56					
54	SS							29	36			
	CF						53	18	19,54			
57	SS								58			
	CF											
60	SS									20,21		
	CF											
63	SS										47,59	
	CF							29	36		22,23	
64	SS											
	CF											
65	SS										48	
	CF										23,24, 63	
77	SS											
	CF						25					
86	SS				3,55							
	CF				3,30							
96	SS					8						
	CF					8						
103	SS						60					
	CF											
Phase			3	4	5.1	5.2	5.3	5.4	5.5	5.6	6.1	6.2

**29.01 Diagram showing Subsidiary Structures (SS hearths, ovens, kilns) and Cut Features, (CF wells, drains, ditches, pits) ordered by Structure in associated Structure number order and by Period and phase**

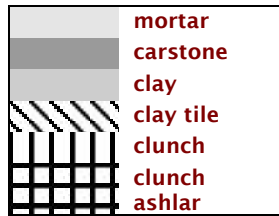
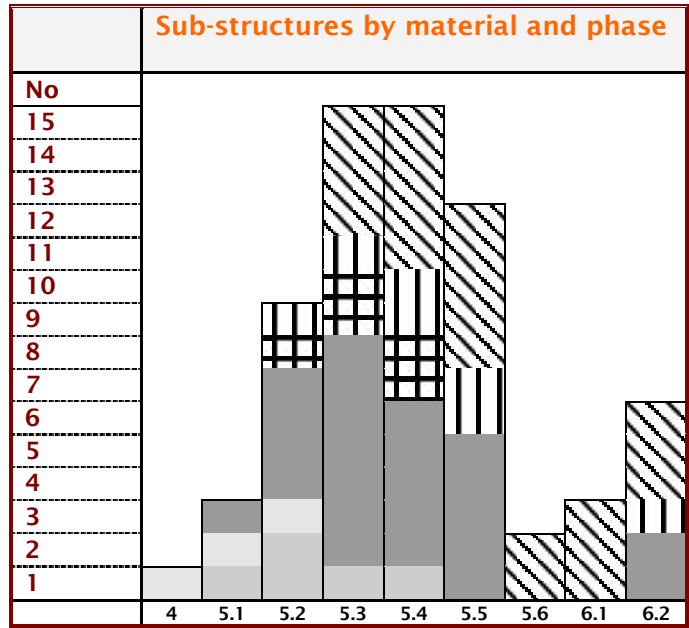
S	P 4	5.1	5.2	5.3	5.4	5.5	5.6	6	Total
7	1	2							2
16								49	1
18		3,52							2
17		4			31,32,33				4
20			5,7,12,13						4
21			8						1
23			6,9,10,11	14,15,16, 19,21,	23,28	41			12
43				22	25,26,34, 37,39			46	7
36						42,43,44, 45			4
28				17,18	27,38			50	5
103				60					1
30								51	1
54					29	36		47	3
41					30	35,40			3
65								48	1
<b>total</b>	1	4	9	9	14	8	0	6	51
	P 4	5.1	5.2	5.3	5.4	5.5	5.6	6	

**29.02 Diagram showing hearths, ovens, and kilns as introduced into Structures, by phase**

Plaster	Mortar	Carstone	Clunch	Clay	Clay tile
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4.2	5.1	5.2	5.3	5.4	5.5	5.6	6.1	6.2
1	7							
7	2							
17	4							
18	52							
18	53							
18	54							
86	55							
86	20	5						
	20	7						
	20	12						
	20	13						
	23	6						
	23	9						
	23	10						
	23	11						
	23	8						
	96	8						
	103	60						
		103	60					
		23	15					
		23	16					
		23	14					
		23	15					
		43	26					
		23	19					
		23	21					
		28	17					
		28	18					
		28	20					
		17	22					
		43	22					
			23	28				
			17	31				
			17	32				
			17	33				
			23	23				
			23	24				
			28	27				
			28	56				
			28	25				
			43	30				
			41	30				
			43	26				
			43	37				
			54	29				
				23	41 brazier			
				28	38			
				43	34			
				41	35			
				43	39			
				43	36			
				28	38			
				36	42			
				36	43			
				38	44			
				41	40			
				41	58			
				57	58			
				54	36			
				28	57			
					43	46		
						28	50	
						63	47	
						63	59	
						65	48	
						16	49	
							51	
								38
								45
4.2	5.1	5.2	5.3	5.4	5.5	5.6	6.1	6.2

29.03 Diagram showing Subsidiary Structures by date of construction and materials: plaster, mortar, carstone, clunch, clay and clay tiles. The Structure number is outside to the left; the SS number is within the column



**29.04** Chart of Subsidiary Structures showing quantities of different materials by phase; mortar, carstone, clay, clay tile, clunch and clunch ashlar. The number of incidences is shown on the left

S	SS	Function	Period Phase	Out of use by	S	SS	Function	Period Phase	Out of use by	
7	1	hearth	4.2	5.2	28	24	hearth	5.4	5.6	
	2	hearth	5.1 late	5.2 early		29	20	hearth	5.3	5.4
16	49	chimney base	6.1	6.2	30	51	hearth	6.1	6.1-2	
17	4	hearth	5.1	5.3	36	42	kiln	5.5	6.1	
	31	hearth	5.4	5.4		43	kiln	5.5	6.1	
	32	hearth	5.4	5.4	38	44	kiln	5.5	5.5 (6.2)	
	33	hearth	5.4	5.6			45	kiln	6.1	6.1
18	52	hearth base	5.1	5.2	41	30	hearth	5.4	5.6	
	53	hearth base	5.1	5.1			35	hearth	5.5	6.1
	54	hearth bases	5.1	5.1-2			40	hearth	5.5	5.6
20	5	hearth	5.2	5.2	43	22	oven	5.3	5.5	
	7	hearth	5.2	5.2			25	hearth/oven	5.4	5.4
	12	hearth	5.2	5.2			26	oven	5.4	5.4
	13	hearth	5.2	5.2			34	hearth	5.5	5.6
23	6	hearth	5.2	5.3		37	hearth	5.4	5.4	
	9	hearth	5.2	5.3		39	hearth	5.5	5.6	
23	10	hearth	5.2	5.3		46	oven	5.6	5.6	
	11	kiln or tank	5.2	5.3 & reuse	54	29	wall hearth	5.4	5.5	
	14	oven	5.3	5.3			36	wall hearth	5.5	5.6
	15	hearth	5.3	5.3	57	58	chimney base	5.5	5.5	
	16	kiln	5.3	5.3		63	47	chimney base	6.1	6.1-2
	19	kiln	5.3	5.4			59	hearth	6.1	6.1-2
	21	rake-out pit for 14	5.3	5.3	65	48	hearth	6.1	6.1	
	23	ovens	5.4	5.5	86	55	hearth	5.1	5.2	
	28	oven complex	5.4	5.6	86	3	hearth base	5.1	5.2	
	41	brazier	5.5	5.6		96	8	industrial feature	5.2	5.2
	28	17	oven	5.3	5.6-6.1	103	60	hearth	?5.2	5.4?
18		hearth/oven	5.3	5.4						
27		oven	5.4	5.6						
38		hearth	5.5	6.2						
50		hearth	6.1	6.2						
56		oven	5.4	5.6						
	57	chimney base	5.5	6.1						



Dating by masonry tooling



Archaeomagnetic dating

29.05 Table showing hearths by Structure, function, lifetime, and dating method; light colour is dating by masonry tooling (Harris); darker colour is by archaeomagnetic dating

## Part 1 Hearths, ovens, and kilns in S7-S20

### STRUCTURE 7 Sub-structures 1, 2

#### SS1 Hearth

**S7** context T13/1482

Phase constructed P4.2

Phase destroyed late P5.1

Materials plaster FM10/mortar BA5

[3.21=19.06, 16.06, 29.01, 29.02, 29.03, 29.05, 29.06] [See SS2]

A bowl-shaped feature, pierced by six stakeholes, was set into the floor level of **S7**. It appeared to have been lined with a plaster and/or white mortar deposit, and filled with a mixture of pulverised carstone in a gritty burnt matrix. It measured 1.80m by 1.60m and was replaced by **SS2**.

#### SS2 Hearth

**S7** context T13/1483

Phase constructed P5.1

Phase destroyed P5.1 (late)-P5.2 (early)

Materials plaster FM10/mortar lining BA5; carstone lining BM2

[3.21=19.06, 16.06, 29.01, 29.02, 29.03, 29.05, 29.06] [See SS1]

**SS1** was replaced by **SS2** which cut into both the earlier hearth and into the deposits underlying it. **SS2** may represent two hearths, the second being placed slightly further east. The replacement was bowl-shaped and fully lined with carstone which had become heavily burnt and disintegrated. The base of the hearth had accumulated a layer of sandy clay loam mixed with a high proportion of ash and burnt debris; this was sealed by a charcoal deposit. Similar deposits built up within and around the hearth. The whole was sealed by clay loams and charcoal which appeared to be contiguous with a possible phase 5.1-5.2 reflooring.

## STRUCTURE 16 Sub-structure 49

### SS49 Chimney base

**S16** contexts T7/662, F26

Phase constructed P6.1

Phase destroyed P6.2

Materials carstone BM1, 2, brick FM14 and clay tile RM3

[20.12, 29.01, 29.02, 29.03, 29.05, 29.06]

The west wall of **S16** was broadened by adding a skin of carstone blocks 0.50m wide against the existing wall. Against this was cut the construction trench for a substantial chimney base, 1.50m by 1.50m. Inside the structure was the floor of a hearth which comprised brick, carstone, and clay tile; the outer edge was made of large carstone blocks. The principal western wall was completely robbed, and there was no certain means of ascertaining whether the hearth continued within the wall line, but it seems likely.

## STRUCTURE 17 Sub-structures 4, 31, 32, 33

### SS4 Hearth

**S17** context T13/596

Phase constructed P5.1

Phase destroyed P5.3

Materials clay base BA2, carstone BM2, some edge-set clunch BM3 and clay tiles RM3

Tiles blue-grey

[4.11=20.14, 29.01, 29.02, 29.03, 29.05, 29.06, 29.07]

A circular hearth was situated immediately alongside the south wall at the eastern end of the building. It had a diameter of 1.60m with a clay base which was heavily burnt. The hearth was carefully edged with narrow blocks of stone pointing to the centre; the stone comprised predominately carstone with some clunch. The hearth was cut by two later features, but sufficient survived to indicate a well-constructed base of edge-set stone pressed into a clay foundation.



### SS31 Hearth

**S17** context T13/486

Phase constructed P5.4

Phase destroyed P5.4

Materials broken fragments of pitched tile in clay RM3, BA4

[4.52, 29.01, 29.02, 29.03, 29.05, 29.06]

The construction of this hearth is associated with the remodelling of the east wall of **S17**, on the northern side of the southern doorway. An irregular feature was inserted over the sleeper wall for the east wall and its additional offset to the east within **S54**; it was built up around and against the superstructure of the doorway. The mortar around the doorway was paler and contained less loam than that used in the construction of the main structure, indicating an alteration at this point. Similar mortar was recognised within the hearth. The offset stopped short of the hearth, the construction of both probably being contemporary. The hearth consisted of a roughly semicircular setting of reused, broken edge-set clay tiles, in an ash and clay matrix.

The doorway and its associated area of hearth showed no indication of burning, but where the feature extended against the western face of the east wall, the base of the wall was heavily scorched. The burning did not extend beneath the wall footing. It was sealed by phase 5.4 floor levels and was cut by **S63**.

### SS32 Hearth

**S17** context T13/385

Phase constructed P5.4

Phase destroyed P5.5

Materials carstone BM1 and clay tile RM3, RM4

Tiles sandy pimply, sandy harsh, sandy unglazed, sandy glazed

[20.16, 29.01, 29.02, 29.03, 29.05, 29.06]

Seated over the tile drain **CF4** in the northern extension of **S17** was a small hearth which butted against the south side of the new north wall. It comprised a burnt block of carstone which had been shaped into a rough circle. The three free sides were surrounded by clay tile set three to four deep edgewise; this formed a nearly square hearth measuring 0.81m by 0.70m.

### SS33 Hearth

S17 contexts T13/135,203  
Phase constructed P5.4  
Phase destroyed P5.6  
Materials clay tile RM3 and clunch BM3  
[20.16, 29.01, 29.02, 29.03, 29.05, 29.06]

Centrally placed towards the east end of S17 was a large tile hearth. It measured 1.30m by 2m, with its edge-set tile running parallel to the main axis of the building. To east and west were additional borders of tiles about 0.25m wide, set at right angles to the main setting. A clunch block border to the east, and a scar for the same to the west, increased the overall dimensions to 2.60m by 2m. It is probable that the clunch border originally went round all four sides.

In phase 5.5 an extension of about 0.80m by 2.40m of more randomly-set tiles was laid along the complete south side of the original hearth. A border 0.20m wide of edge-set tiles with a band 0.40m wide of flat clunch blocks was added to the east of the earlier hearth. The hearth was cut by a number of straight, narrow linear disturbances about 0.18m wide, forming a regular grid pattern. This almost certainly occurred when the timber floor of S63 was built.

## STRUCTURE 18 Sub-structures 52, 53, 54

### SS52 Industrial hearth base

S18 contexts T23/228, 203-6  
Phase constructed P5.1  
Phase destroyed P5.2  
Materials sand FM11, clay BA2, mortar BA5  
[4.02, 4.33=29.08, 29.01, 29.02, 29.03, 29.05]

A nearly circular patch 0.52m in diameter, rimmed with black, silty burning 0.05m wide, was seen outside and to the north-west of the main building. Inside the ring of burning was a further ring of clean orange sand. The centre was filled with clay loam, with mortar and sand lenses and quantities of vertical runs of lead. The feature was sealed by the phase 5.4 northern annexe to S23.

### SS53 Hearth base

S18 context T23/195  
Phase constructed P5.1  
Phase destroyed P5.1  
Materials clay loam BA3  
[4.33=29.08, 29.01, 29.02, 29.03, 29.05]

A patch of blackened clay loam and charcoal sat directly on the Period 4 surfaces and contained lead slag.

### SS54 Hearth bases

S18 contexts 23/297.2, 297.3

Phase constructed P5.1

Phase destroyed P5.1/5.2

Materials clay loam BA3

[4.33=29.08, 29.01, 29.02, 29.03, 29.05]

Two adjacent areas of burning may have been the remnants of two hearths or the remains of contemporary features working together. Both produced quantities of lead waste and other metal-working debris.

### STRUCTURE 20 Sub-structures 5, 7, 12, 13, 64

5.3	S20 13
5.2	7 12 5 64
5.1	2, S7

S20 produced a complex sequence of hearths; some, like SS13 the latest in the series, was a burnt spread, possibly with a canopy over. Beneath this was SS12, a sub-circular hollow that appeared to function at the same time as SS5. It appears that SS12 was cleaned out down to SS64 and a carstone setting SS7 set into the void. There were a number of disparate spreads badly mauled by later activity, so the full number of heating areas was probably larger than the five described here.

### SS5 Hearth

S20 context T13/612

Phase constructed P5.2

Phase destroyed P5.2

Materials carstone blocks BM1 within a chalk, clunch, and mortar lining BM3, BA5

[4.20, 29.01, 29.02, 29.03, 29.05, 29.09]

Hearth SS5, the second earliest of a sequence of hearths was built over the floor level contemporary with the sealing of SS2 (S7). A sub-circular area 2m by 1.50m was defined by carstone blocks laid on a bed of chalk, clunch, and mortar. There was evidence for prolonged firing and constant maintenance. Burnt deposits with ash lay beneath the feature, but it was unclear whether this was an earlier feature or the effect of prolonged and/or high temperature burning on SS5 on the underlying levels associated with SS64. About 0.10m of gritty, ashy clays sealed the hearth which appeared to function alongside SS12.

### SS7 Hearth

S20 context T13/532.5  
Phase constructed P5.2  
Phase destroyed P5.2  
Materials clunch BM3  
[29.01, 29.02, 29.03, 29.05, 29.09]

An area of burnt crushed clunch cut into SS5. Measuring approximately 1m by 1.50m it scorched the underlying brickearth. It was sealed by an accumulation of ash and charcoal, followed by SS12. This was in turn sealed by SS13.

### SS12 Hearth

S20 context T13/1612  
Phase constructed P5.2  
Phase destroyed P5.2  
Materials clunch BM3  
[29.01, 29.02, 29.03, 29.05, 29.09]

A near-circular hollow was cut into a spread of ash sealing SS7. At the base of the hollow was a circular setting, SS7, of burnt carstone covered with ash; this was set over a further hollow filled with ash, a further hearth SS64.

### SS13 Hearth

S20 context 13/532.1  
Phase constructed P5.2  
Phase destroyed P5.2  
Materials carstone rubble BM2 and loamy, sandy clay BA3/ FM11  
[29.01, 29.02, 29.03, 29.05, 29.09]

The predecessor hearth sequences comprising mainly SS7 and SS12 were sealed by burnt deposits of carstone rubble and a mixed loamy, sandy clay measuring 2m by 2.80m. Surrounding it was an extensive spread of ash, loams, and charcoal 3.80m by 3.20m in extent, with the appearance of debris resulting from repeated hearth cleaning. Several postholes may indicate a superstructure contemporary with the hearth. The whole hearth was sealed by the make-up deposits associated with phase 5.3 S29 and one of its walls.

### SS64 Hearth

S20 context 13/532.2  
Phase constructed early P5.2  
Phase destroyed P5.2  
Materials carstone rubble BM2 and loamy, sandy clay BA3/FM11  
[29.01, 29.02, 29.03, 29.05, 29.09]

The earliest hearth of a complex but fragmentary sequence, SS64 was a pit 0.45m deep filled with ash and burning. This was replaced by two hearths, SS12 and SS5.