The Late Bronze Age pottery – Matt Brudenell

A substantial quantity of Late Bronze Age pottery was recovered from Mucking. This report is based on the analysis of 11099 sherds of pottery (140259g, EVE 67.12) recovered from select slots through the South Rings, features internal to the rings, and a range of other pits, post-holes and post-built roundhouses located in the north of the site. The exact quantity of Late Bronze Age pottery recovered from the excavations remains unknown, though the total must exceed 344 kg (see below). To date this is the second largest quantified assemblage of Late Bronze Age pottery from Essex; the only county in East Anglia to produced an abundance of Late Bronze ceramics, and more importantly, clearly stratified sequences of ceramics deposited in deep ditch contexts.

The report concerns material quantified during the EH/BM phase of post-excavation. The methodology for sampling and recording the pottery was designed by John Etté, who implemented much of the initial data analysis. The fact that the results of this process can be presented here, over a 15 years after EH/BM phase of post-excavation ceased, is credit to the exceptional data set produced; a resource of relevance to prehistoric pottery specialists across southern Britain. The records themselves were recovered from computer tapes, and required a certain amount of interpretation and re-ordering. None of the original data was been altered, though new fields were added where simplification was required. Unfortunately, certain alphanumerical codes could not be deciphered, particularly those relating to the sub-divisions of form and zones of surface treatment. This, however, has not impeded the analysis.

Report Structure

This report is broken down into three sections. The first section gives an overview of the Late Bronze Age pottery analysed during the EH/BM phase of post-excavation, the aim of which is to describe the basic characteristics of the assemblage, in terms of fabrics, forms, surface treatment and decoration. As with the Middle Iron Age pottery report, emphasis is placed on the quantification and presentation of data, with explicit reference to sherd and vessel numbers, rim and/or base EVEs (estimated vessel equivalents) and overall weights. The second part of the report compares and contrasts the composition of difference sub-assemblages, including those from the ditches of the South Rings, the features internal to the rings, and the 'open' settlement features in the north of the site. This is then followed by an analysis of pottery distributions within the South Rings, incorporating some of the data held in the paper archive, but not in the computerised data base. In addition, there is a detailed analysis of pottery across the stratigraphic sequence of ditch deposits, which provides the key to the chronology of the South Rings.

Section three is devoted to discussion. This final part of the report gives a brief summary of the findings, followed by a discussion of the South Rings assemblage and its relation to the pottery recovered from other major ring-work sites and contemporary enclosures, principally Mucking North Ring (Barret and Bond 1988) and Springfield Lyons (Brown 1987; forthcoming), but also Lofts Farms (Brown 1988a) and South Hornchurch (Harrison 2000). Finally, the rear of the report contains the catalogue of illustrated vessel.

Section 1: Characterising the assemblage

Fabrics

32 fabrics were identified in the assemblage, the descriptions of which were taken directly from the archive. The fabrics belong to eight basic fabric groups, defined by the type and modal size of the inclusions (Table 1). The assemblage was dominated by sherds containing burnt flint inclusions, as is usual in Late Bronze Age Post-Deverel Rimbury assemblages (Needham 1996, 245). By weight, 48% of the pottery contained coarse flint, 32% contained medium flint, 8% had fine flint and 5% had very-coarse flint. The remaining 8% of the assemblage was shared between the 'minor' fabrics groups - including those tempered with flint and either sand, grog, quartz or organic inclusion (6%), sand and quartz fabrics (1%), grog-tempered fabrics (<1%) or vesicular and/or organic fabrics (<1%). The range of fabrics appears broadly comparable to those from the Mucking North Ring, where coarse flint tempered fabrics also dominated the assemblage (Mucking North Rings Fabric group D - flint-gritted/coarse fabrics; Barrett and Bond 1988, 27). During MPX, sherds from both sites were submitted to David Williams for petrological examination, along with samples of clays and brickearths from the site (archive report, Williams 1980). Forty-five sherds were thin-sectioned from Mucking, most of which derive from the South Rings. The majority were found to contain varying grades and densities of flint and sand, with a background of mica and iron ore. Unfortunately, it is unclear how the nine groups identified by Williams relate to the fabrics series produced during the EH/BM phase of post-excavation. Nevertheless, the conclusions reached by the report indicate that there was a high probability that the pottery had a fairly local origin, with tempering agents such as flint being readily available from the local gravels. However, Williams notes that the clays and brickeaths submitted for analysis tended to be much coarser in texture than the pottery.

Fine flint fabrics

1. Occasional flint inclusions up to 1mm in size
2. Moderate flint inclusions up to 1mm in size
3. Frequent flint inclusions up to 1mm in size

Medium flint fabrics

4. Occasional flint inclusions up to 2mm in size
5. Moderate flint inclusions up to 2mm in size
6. Frequent flint inclusions up to 2mm in size

Coarse flint fabrics

7. Occasional flint inclusions up to 3mm in size
8. Moderate flint inclusions up to 3mm in size
9. Frequent flint inclusions up to 3mm in size
10. Occasional flint inclusions up to 4mm in size
11. Moderate flint inclusions up to 4mm in size
12. Frequent flint inclusions up to 4mm in size

Very coarse flint fabrics

13. Occasional flint inclusions over 4mm in size

14. Moderate flint inclusions over to 4mm in size
15. Frequent flint inclusions over 4mm in size

Flint fabrics with either organic inclusions, grog, sand or quartz

16. Flint with sparse-moderate organic inclusions
17. Flint with sparse-moderate grog inclusions
18. Flint with sparse-moderate sand inclusions
19. Flint with sparse-moderate quartz inclusions

Sandy and quartz fabrics

20. Quartz tempered fabric
21. Quartz and flint tempered fabrics
22. Sand
22. Sand with glauconite
24. Very fine sand
25. Sand with sparse-moderate flint inclusions

Grog fabrics

26. Grog
27. Grog with sparse-moderate flint inclusions

Vesicular and organic temper

28: Vesicular with no clear temper
29: Vesicular shell?
30: Vesicular shell? with occasional-moderate flint
31: Organic voids
32: Organic voids with sparse-moderate flint
32: Organic voids with sparse-moderate sand

Fabric group	Fabric	No./Wt. (g)	MSW	% of the assemblage by Wt.	No./Wt. (g) of burnished sherds	% of fabric burnished
Fine flint	1	116/588	5.1	0.4	70/363	61.7
	2	535/3509	6.6	2.5	353/2342	66.7
	3	633/6587	10.4	4.7	327/2808	42.6
Medium flint	4	653/5393	8.3	3.8	204/1507	28
	5	2102/23353	11.1	16.6	584/5472	23.4
	6	1243/16352	13.2	11.7	163/1581	9.7
Coarse flint	7	901/12228	13.6	8.7	131/1265	10.3
	8	1429/19724	13.8	14.1	149/2073	10.5
	9	571/8542	15	6.1	40/497	5.8
	10	370/4698	12.7	3.3	37/423	9
	11	879/19274	21.9	13.7	139/1193	6.2
	12	138/2692	19.5	1.9	9/290	10.8
Very coarse flint	13	158/2055	13	1.5	7/126	6.1
	14	273/4173	15.3	3	22/246	5.9
	15	68/875	12.9	0.6	1/13	1.5
Flint and other inclusions	16	46/504	11	0.4	5/39	7.7
	17	42/614	14.6	0.4	6/140	22.8
	18	346/3239	9.4	2.3	104/1046	32.3
	19	234/3679	15.7	2.6	4/20	0.5
Sand and quartz	20	13/116	8.9	0.1	4/50	43.1
	21	27/186	6.9	0.1	7/50	26.9
	22	60/254	4.3	0.2	9/83	32.7
	23	1/ 2	2	<0.1	1/ 2	100
	24	36/133	3.7	0.1	14/62	46.6
	25	118/715	6.1	0.5	47/301	42.1
Grog	26	1/ 5	5	<0.1	-	-
	27	18/250	13.9	0.2	3/33	13.2
Vesicular and organic	28	12/182	15.2	0.1	-	-
	30	8/41	5.1	<0.1	1/12	29.3
	31	43/189	4.4	0.1	-	-
	32	6/24	4	<0.1	-	-
	33	14/29	2.1	<0.1	-	-
?	?	5/54	10.8	<0.1	-	-
TOTAL		11099/140259	12.6	99.7	2441/22037	15.7

Table 1: The Late Bronze Age fabrics and their relationship to burnishing

Forms

Late Bronze Age vessel forms were classified using a typology designed by John Etté. Vessels were divided into jars and bowls, and were assigned alphanumerically. The jars and bowls were divided into four basic shapes, according to whether they displayed globular, uni-, bi- or tripartite profiles (jars labelled A-D; bowls E-H). These were then sub-divided along the morphology of the shoulder, neck and rim; each variety being denoted by a number, e.g. C2. This gave rise to a total of 36 potential vessel types. The data base also contains further sub-divisions, identified by a fractional digit, e.g. C2.1; though there is no information in the archive to suggest what these refer to.

Overall, this system of classification is too complex to allow patterns to be seen in the data. Put simply, there are too many potential types, meaning that most vessels have a unique combination of numbers and letters to describe their form. In some respect this reflects the true diversity of forms in the PDR ceramic tradition - each pot essentially being a 'one-off'. However, vessels were undeniably produced around a set of broad 'categories' or 'themes', each ultimately reducible to one of Barrett's five vessel classes (Barrett 1980). The degree to which we recognise or distinguish between these categories will inevitably effect how much variety in form we chose to expose or conceal. For the purposes of this report, an attempt has been made to re-categorised the EH/BM typology into the system devised by Nigel Brown for prehistoric pottery in Essex. The degree of division in this system of classification rests somewhere between that used in the EH/BH phase of post-excavation and 'base-level' categorisation recognised by Barrett (1980) – an 'in between' level perhaps more akin to the types perceived in the Bronze Age. More importantly, this system is widely adopted in Essex and allows the Mucking data to be compared with other published assemblages from the county.

Essex form series

A. Jar, round shouldered with short upright or flared rim
B. Jar, hooked rim with smoothly curved body
C. Jar, bipartite round or slightly angular shoulder
D. Jar, round or slightly angular shoulder with concave neck and everted flared or upright rim.
E. Jar, slack shouldered with upright or slightly everted rim.
F. Jar, tripartite angular shoulder flared rim.
G. Bowl, round bodied, closed.
H. Bowl, round bodied, open.
I. Bowl, bipartite, angular.
J. Bowl, tripartite round shouldered, flared rim.
K. Bowl, tripartite, angular shoulder, flared rim.
L. Bowl, flared, open
M. Bowl, as H but with flared rim
N. Jar, as F but with upright rim
O. Bowl, bipartite bead rim
Q. Bucket.

A total of 80 vessels were assigned to the Essex form series, the characteristics of which are described in detail below. The vessels comprised 450 sherds weighing 16704g (rim EVE 9.30). Figure 1 shows that Form H bowls dominated the assemblage, with modest peaks for Form D jars, and Form I and K bowls. All other vessel forms have limited representation. The high incidence of bowls can be represented graphically by ascribing the form assigned vessels to one of Barrett's (1980) five major vessel classes: I coarseware jars; II fineware jars; III coarseware bowls; IV fineware bowls: V cups (Figure 2).

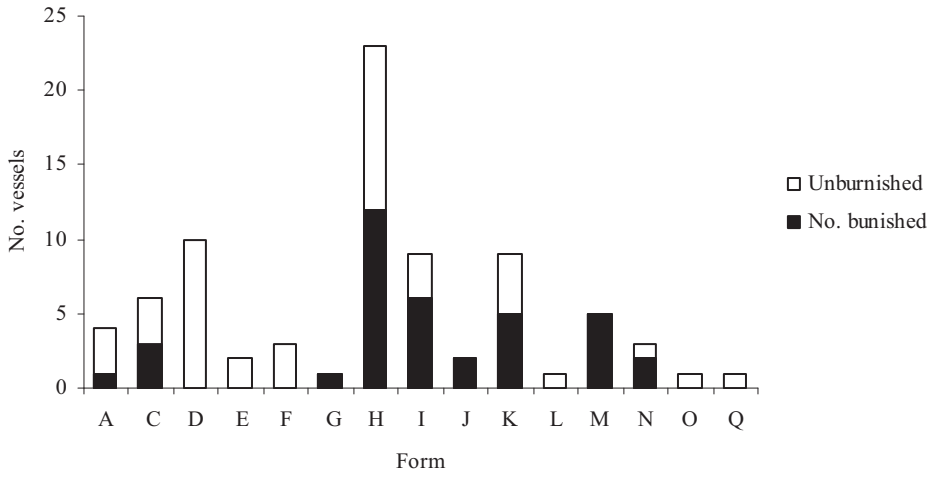

Figure 1: Vessel Forms.

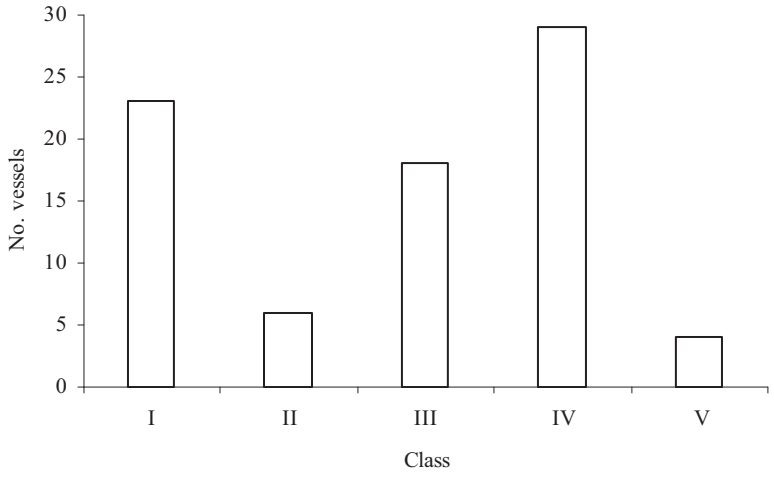

Figure 2: Vessel classes (after Barrett 1980).

Jars

Jars were defined as vessels with a height in excess of rim diameter or maximum girth. The form assigned vessels included 29 jars (254 sherds, 13990g, rim EVE 3.25). In terms of fabric frequency, 66% of jars were made with coarse flint tempered fabrics (19 jars, 198 sherds, 12323g), 31% were made with medium flint gritted wares (9 jars, 22 sherds, 1209g), and the remaining 4% had very coarse flint inclusions (1 bowls, 34 sherds, 458g). Burnishing was present on six of the jars (Class II, 18 sherds, 738g); four of which were made with medium flint gritted fabrics, the other two having coarse flint inclusions.

The jars were manufactured in a range of sizes and displayed rim diameters of 14-56cm. Figure 3 compares the frequency of jar, bowl and cup diameters. The significance of these distributions is considered in greater detail below. Nevertheless,

it worth noting at this point that jars appear to fall into three sizes ranges, as indicated by the peaks in the graph: small (between 14-17cm), large (around 26-29cm) and very large (around or above 41cm). In the following discussion, medium sized jars are classified by rim measurement of 18-25cm.

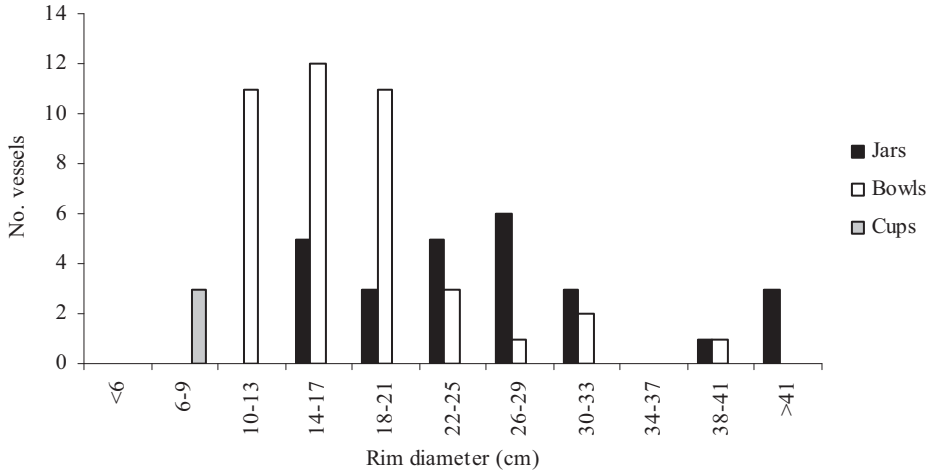

Figure 3: Jar, bowl and cup diameters

Round shouldered Jars (Forms A, C and D): 20 round-shouldered jars were assigned to form. The assemblage contained four plain Form A jars, totalling 51 sherds (1637g) with a rim EVE of 0.45. The jars included three Class I vessels (42 sherds, 1358g, EVE 0.35) and one Class II vessel (9 sherds, 279g, EVE 0.10). The burnished Class II vessel was made with medium grade crushed flint, and is classified as a small jar with a rim diameter of 16cm. The Class I vessels were significantly larger, with diameters of 32-56cm (large-very large vessels). These jars were made with medium, coarse and very coarse flint gritted fabrics; the coarsest being used to make the largest jars. Six Form C jars were identified, totalling 157 sherds (9261g) with a rim EVE of 0.65. The jars included three Class I vessels (151 sherds, 8197g, EVE 0.40) and three Class II vessels (6 sherds, 344g, EVE 0.25). The latter were made with medium and coarse flint gritted fabrics, and had diameters of 18-28cm (medium-large vessels). The Class I jars were made exclusively with coarse flint fabrics, though their size rage was broadly similar to the Class II jars (19-32cm; medium-large vessels). All three Class I jars were decorated; two displaying finger-tipped rim-tops, the other having a groove around the rim.

The commonest type of shouldered jar was the Form D vessel. The assemblage contained 10 Form D jars, totalling 33 sherds (2133g) with a rim EVE of 1.50. The vessels were all un-burnished Class I jars with rim diameters of 14-30cm (small-large). The jars were made in medium and coarse flint tempered fabrics, though once again, the coarsest fabrics were used to make the larger vessels. Seven of the nine Form D jars were decorated. Five of the jar rims were embellished with finger-tip/finger-nail impressions; two with impressions on the rim-top, one on the rim-exterior, and two with raised finger-tipped cordons attached to the rim. The sixth vessel had a finger-tipped cordon applied to the girth, whilst the seventh jar was stabbed along the shoulder.

Slack shouldered jars (Form E): Two Form E jars were identified in the assemblage, totalling 2 sherds (98g) with a rim EVE of 0.15. Both vessels were Class I jars, made in medium and coarse flint tempered fabrics. The jars comprised medium and large sized vessels measuring form 24-28cm in diameter. The smaller of the two jars was decorated with a single incised line around the neck.

Angular shouldered, tripartite jars (Forms F and N): The assemblage contained six tripartite jars with angular shoulders. Three of the vessels were Form F jars, comprising 3 sherds (204g) with a rim EVE of 0.05. The jars belonged to Class I, and were made with coarse flint tempered fabrics. All the jars had neck cordons; one decorated with diagonal stabs marks, one decorated by cabling, and one displaying finger-tip impressions. The cabled vessel also had a row of finger-impressions on the rim-top. The jars were all large-very large vessels, though only one rim was measurable – this being 41cm in diameter. By comparison the Form N vessels were significantly smaller, and had rim diameters of 16-22cm (small-medium sized). The three jars included 7 sherds (155g), with rim EVE of 0.30. The jars were made in medium-coarse flint gritted fabrics, none of which were decorated. Two of the vessels were Class II jars (5 sherds, 85g, rim EVE 0.20).

Bucket shaped jars (Form Q): The assemblage contained single, bucket shaped jar of Form Q, made in a coarse flint fabric (1 sherd, 502g, rim EVE 0.15). The vessel was a very large, plain Class I jar, made with a rim diameter of 52cm.

Bowls

Bowls were defined as vessels with a height less than the rim diameter or maximum girth. The form assigned vessels included 47 bowls (179 sherds, 2591g, rim EVE 4.85). In terms of fabric frequency, 43% of bowls were made with medium flint fabrics (20 vessels, 111 sherds, 1068g), 27% were made with fine flint (13 vessel, 36 sherds, 634g), 26% with coarse flint (12 vessels, 22 sherds, 823g), 2% had very coarse flint inclusions (1 vessel, 3 sherds, 24g) and 2% had a mixture of flint and sand (1 vessel, 7 sherds, 42g).

Burnishing was present on 29 of the bowls (Class IV, 94 sherds, 1285g). These were also made in a range of fabrics, though 85% were made with fine-medium flint. The rim diameter of the bowls measured from 11-40cm, and as Figure 3 shows, the vast majority fell within the 10-21cm range. These vessels can be classified as small-medium sized bowls, which dominate the assemblage. Although there are relatively few bowls which exceed 21cm in diameter, the slight peaks at in the graph at 30-33cm and 38-41cm indicate that few large-very large vessels were produced. In general, however, it was the jars which dominated the larger size categories.

Round-bodied bowls (Forms G, H and M): Round-bodied bowls dominated the assemblage, with 27 vessels identified. 21 of these vessels were open round-bodied bowls of Form H, comprising 41 sherds (932g) with a rim EVE of 1.90. The form encompasses a range of different shaped vessels produced around the round-bodied 'theme'. Following Brown (forthcoming), the form could be divided into a number of sub-categories. For examples, six of the vessels could be classified as 'open hemispherical bowls' (Brown's Form H.1: 10 sherds, 101g, rim EVE 0.30), whilst one vessel could be classified as a 'large globular bowl' (Brown's Form H.3: 1 sherd, 57g, rim EVE 0.05). At a more general level, the Form H bowls included 12 Class IV vessels, over half of which were made with fine-medium flint fabrics (28 sherds, 663g, rim EVE 1.15). However, coarse flint fabrics were also used, as were those with a mixture of flint and sand. Five of the bowls were decorated with grooved, incised and combed horizontal lines located at the shoulder and/or the neck exterior or exterior rim-edge. The Class IV bowls were all small-medium sized vessels measuring from 11-21cm in diameter. The nine remaining Form H bowls belonged to Class III (13 sherds, 269g, rim EVE 0.75). The bowls were all plain, and were made in a similar range of fabrics to the finewares, though some vessels were slightly larger, measuring between 12-32 cm in diameters (small-large).

Form M is closely related to Form H, but is distinguished by the flared rim. The assemblage contained five Form M vessels, all of which belonged to Class IV (24 sherds, 227g, rim EVE 0.70). The burnished bowls were small-medium sized vessels, measuring 15-19cm in diameter, and were made

with fine-medium flint fabrics. One of the vessels was decorated on the body with a series of combed horizontal lines. The single Form G bowl was a closed Class IV vessel, comprising 2 sherds (23g) with a rim EVE of 0.15. The bowls was 12cm in diameters and was made with medium crushed flint.

Bipartite bowls (Forms I and O): The assemblage contained 10 bipartite bowls. Nine of the vessels were of Form I, comprising 17 sherds (303g) with a rim EVE of 1.10. The Class IV vessels included six Form I bowls made with fine-medium flint fabrics (11 sherds, 201g, rim EVE 0.80); one of which decorated with combed lines on the outside edge of the rim. The bowls were of small-medium size with diameters of 12-19cm. The three Class III bowls were of similar size (11-20cm), though they were made with medium and coarse flint fabrics (6 sherds, 102g, rim EVE 0.30). Decoration was restricted to a single Class III vessel which displayed an incised line on the body. The single Form O bowl was a very large unburnished Class III vessel, measuring 40cm in diameter (2 sherds, 97g, rim EVE 0.05). The bowl was plain and was made in a coarse flint fabric.

Tripartite bowls (Forms J and K): Nine tripartite bowls were assigned to form. The assemblage contained seven Form K bowls, totalling 90 sherds (948g) with a rim EVE of 0.70. The bowls included three Class IV vessels (27 sherds, 134g, rim EVE 0.15), and four Class VI vessels (63 sherds, 814g, rim EVE 0.55). The Class IV vessels were plain, small-medium sized bowls with diameters of 13-22cm, all made with fine-medium flint fabrics. The Class II bowls, however, had medium-coarse flint fabrics, and were slightly larger, measuring from 16-30cm (medium-large vessels). Decoration was present on one of the Class III bowls and comprised a row of stabbed impressions on the shoulder. The Form J vessels are closely related to those of Form K, but are distinguished by the rounded shoulder and flared rim. Only two Form J vessels were identified in the assemblage, both belonging to Class IV (2 sherds, 37g, rim EVE 0.15). The vessels were made with fine-medium flint fabrics, and had diameters of 16-24cm.

Flared open bowls (Form L): The assemblage contained single flared bowl of Form L, Class III (1 sherd, 24g, rim EVE 0.10). The vessel was made with a medium flint fabric, was 24cm in diameter and displayed finger-tip and finger-nail marks on the rim-top.

Cups

Cups were defined as very small vessels with diameters under 11cm. Four cups were assigned to form, comprising 17 sherds (123g) with a rim EVE of 1.20. Two of the cups were made with medium flint fabrics; one had fine flint; and the other had a mix of flint and quartz. Two of the vessels were burnished.

Round-bodied cups (Form H): There were two Form H cups in the assemblage (2 sherds, 44g, rim EVE 0.45). Both were unburnished vessels; one made with a mix of flint and quartz; the other with medium flint. The latter measured 8cm in diameter and displayed an incised line around the body.

Tripartite cups (Form K): The two remaining cups in the assemblage belonged to Form K (15 sherds, 79g, rim EVE 0.75). Both were plain burnished vessels with rim diameters of 7-8cm, made from fine-medium flint fabrics.

Rims

Overall, form assigned vessels represented only a fraction of the assemblage - just 4.1% of the by sherd count or 11.9% by weight (combined rim EVE of 9.30). A more realistic indication of the total number of vessels is give by the rim count; 656 of

which were identified in the assemblage (1168 sherds, 24071g, 10.5% by sherd count). Although this count probably exaggerates numbers, given that some rims are likely to belong to the same pot, the figure does provide a broad estimate of the number of vessels analysed in this assemblage.

There were 392 measurable rims, (860 sherds, 21777g, EVE 31.07), displaying diameters of 2-56cm. No single rim was complete, and most were highly fragmented. 268 rims retained less than 10% of their original circumference, whilst only six had over 50% intact. Figure 4 shows that most vessels displayed diameters within the 10-21cm size range, with a quarter of all measurable rims falling within the main 'peak' at 14-17cm. The graph also reveals that burnishing was not restricted any particular vessel size, but occurred on pots in all but one of the categories, including the largest vessels from the site (170 burnished rims, 299 sherds, 3638g, EVE 13.00). On the other hand, it is evident that burnishing becomes less frequent as the size of the vessel increases. For example, 57% of rims with diameters of 14-17cm were burnished. This had fallen to 44% in the 20-25cm size range, then 21% in 26-29cm range, and finally, 13% in 30-33cm range. After this point the pattern breaks down, possibly because of the small sample size.

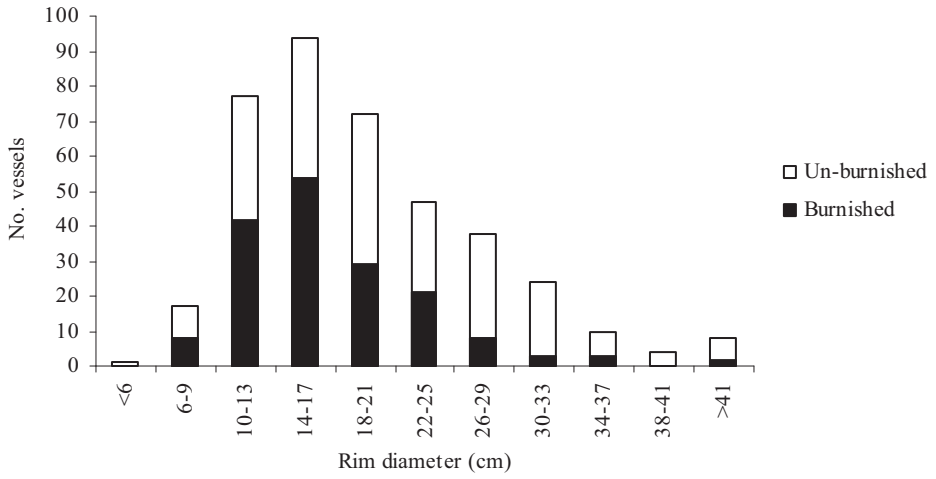

Figure 4: Rim diameters

Given the high frequency of small rimmed burnished vessels and the high frequency of Class VI bowls (Figure 2), it is *likely* that most vessels with small-medium sized mouth diameters (10-21cm) belong to Class VI bowls. In addition, most large-very large vessels (over 25cm) probably belonged to jars, principally Class I coarseware jars. These suppositions can be 'tested' by examining the diameters of the form assigned vessels.

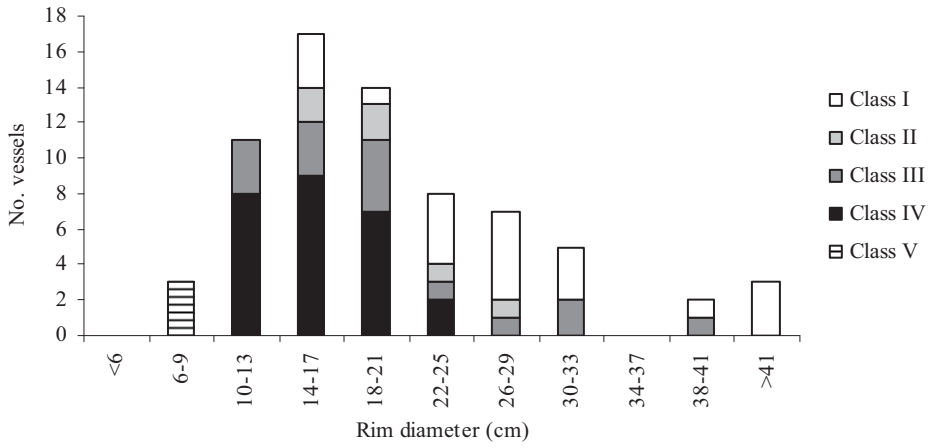

Figure 5: Relationship between rim diameter and vessel class.

Figure 5 shows the distribution of these diameters by vessel class (Barrett 1980). Importantly, the overall shape of the graph mirrors that in Figure 2, meaning that the rim sizes of vessels assigned to form are largely representative of the sizes present in the assemblage as a whole. Patterns in this data will therefore reflect broader trends at the level of assemblage. The graph demonstrates that half the vessels with diameters of 10-25cm were fineware bowls (Class IV). These measured 11-24cm in diameter, with most clustering around 14-17cm. In total, 92% of the fineware bowls fell within the small-medium (10-21cm) category. The Class II fineware jars displayed an equally narrow size range. The rims of these vessels measured from 16-28cm, with 67% having diameters in the small-medium range.

Unburnished coarseware jars (Class I) were produced in the broadest range of sizes (14-52cm). Two thirds of these vessels are classified as large-very large (over 25cm in diameter), whilst overall, Class I jars accounted for 71% of all vessels above this size. Finally, the unburnished coarseware bowls (Class III) measured from 11-40cm with most (67%) falling within the small-medium size bracket. By and large, these figures support the suggestion that most of the small vessels in the assemblage were bowls, and in particular, finewares. In total, 81% of small-medium vessels were bowls, and of these, 71% belonged to Class IV. Equally, 76% of vessels of large-very large vessels were jars, and of these, 92% belonged to Class I.

Bases

The EH/BM typology of bases included 17 different forms. For the purposes of this report these have been simplified into five categories; Table 2 listing the relationship between categories and forms in the archive. The assemblage included 541 base sherds (25699g), deriving from 219 different vessels. 95% of the bases could be assigned to type; common forms being the flat and stepped base. Sizes ranged from 4-40cm in diameter, though 36% were under 10cm (Figure 6). As only 12 vessels retrained both a measurable mouth and base, is difficult to understand how theses variables change in relation to one another. Judging by the examples, bases under

11cm in diameter belong to the small-medium vessels with diameters around of 10-21cm or below. As shown above, these mainly consist of fineware bowls. Equally, the larger bases over 14m in diameter belong to large-very large wide-mouthed vessels with diameter over 25cm in diameter; a category dominated by coarseware jars.

Base category	Archive form	No./Wt. (g) of sherds	No. bases/ no. burnished	No. bases measurable/ no. burnished	Base EVE	Diameter range of bases/ burnished bases (cm)	Median diameter of bases/ burnished bases (cm)
Flat	A, B, C	318/16451	90/28	67/22	14.75	4-31/5-26	12/8
Pinched	E, F,	33/2057	29/2	16/-	3.40	6-40/-	18/-
Stepped	D	89/4728	57/14	39/11	9.20	5-30/6-25	12/14
Beaded	J	34/1456	17/2	13/2	4.50	6-28/6-16	11/11
Omphalos	Q, G	40/446	14/7	11/6	2.85	4-20/4-10	8/6
Unassigned		27/561	12/4	12/4	1.35	5-35/5-35	10/6
Total		541/25699	219/57	158/45	36.05	4-40/4-35	12/8

Table 2: Quantification of base forms

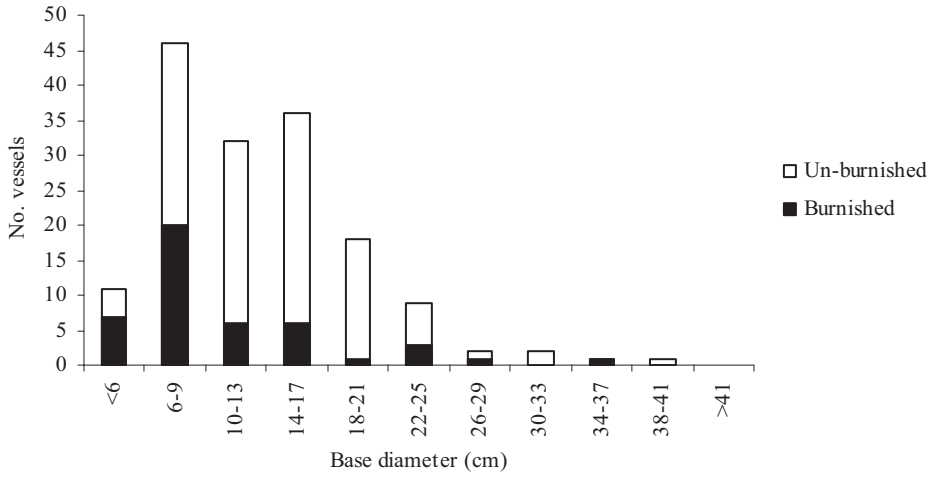

Figure 6: Base diameters.

Burnishing

Burnishing was the key criteria for distinguishing between finewares and coarsewares (Table 3). In the text, the category 'burnished' includes vessels which are both burnished and polished, totalling 2441 sherds, weighing 22037g (22.0% of the assemblage by count, 15.7% by weight). Clear patterns are evident in the form, size and fabrics of the vessels burnished. Though a wide range of fabrics were treated, few were persistently burnished. As with other PDR assemblages, burnishing tended to occur on fabrics with fine of intermediate sized inclusions; specifically pots tempered with fine and medium grade crushed flint (Fabrics 1-5), those with flint and either sand or grog (Fabrics 17- 18), or those with sandy fabrics (Fabrics 20-25). This suggests that clays and tempering agents were carefully selected and prepared in

regards to this form of surface treatment. In other words, it implies that pots were manufactured to belong to a specific class of vessel from the *outset* of production.

Surface treatment	No. sherds	Wt. (g)	MSW	% of assemblage by count	% of assemblage by wt. (g)	Classification
Burnished	1907	17165	9	17.2	12.2	Burnished (fineware)
Polished	534	4872	9.1	4.8	3.5	
Smoothed	5498	66456	12.1	49.5	47.4	Un-burnished (coarseware)
Wiped	2698	48456	18	24.3	34.5	
Rusticated	3	29	9.7	<0.1	<0.1	
Unidentified	459	3281	7.1	4.1	2.3	Unclassified

Table 4: Surface treatment

Patterns are also evident in the types of vessels burnished. Burnishing was found on a wide range of vessels, though not on jar forms D, E, F and Q, or bowl forms L and O. In total, 46% of the vessels assigned to form were burnished, a frequency much higher than that suggested by sherd count or weight. Burnishing was present on 31 of the 51 identified bowls/cups (62%), whilst only 6 of the 29 jars were embellished (21%). The analysis of the rim and base diameters has already shown that it was the smaller vessels which were most frequently treated, particularly those with rim diameters under 18cm, and base diameters below 11cm.

When combined, the evidence suggests a close-knit relationship between burnishing, fabric, form, and vessel size. Burnishing was most prolific on small bowls and cups made with fine inclusions, whilst wiping and smoothing were more commonly found on the large, coarsely-gritted jars. This is a well established pattern, and probably reflects the functional distinction between large coarseware jars and bowls used for storage and cooking, and the smaller fineware bowls, cups and jars used as ‘tableware’ for serving, eating and drinking.

Decoration/Zone	Rim-top	Rim inner edge	Rim outer edge	Rim-top & edge	Rim & neck	Rim & body	Neck	Neck & shoulder	Shoulder	Shoulder & rim	Body	Base	Unknown	Total
Grooved/ burnished lines	**3**:3/65		**2**:2/18				**4**:5/191		**7**:8/107		**13**:15/240	**2**:8/244	**15**:26/334	**46**:67/1199
Burnished lines & finger –nail						**1**:1/5								**1**:1/5
Scoring							**1**:1/20				**4**:4/76		**4**:6/41	**9**:11/137
Scoring and pinching													**1**:1/4	**1**:1/4
Pinching	**6**:7/146	**1**:1/39			**1**:2/8		**2**:2/22		**3**:3/57		**2**:2/19	**3**:5/240	**5**:6/42	**23**:28/573
Finger-tip impressions	**36**:37/604	**5**:5/68	**13**:18/311	**1**:1/6	**2**:2/22		**9**:9/121		**17**:18/361		**13**:20/361	**4**:4/122	**18**:22/188	**118**:136/2164
Finger-tip & grooved/ lines					**1**:1/36	**1**:149/8792								**2**:150/8828
Combed			**1**:3/53						**7**:11/172	**1**:7/69	**8**:12/95		**11**:12/34	**28**:45/422
Ridging		**1**:1/40	**2**:2/28				**1**:1/42		**2**:2/19		**4**:8/134	**4**:4/32	**15**:36/446	**29**:54/741
Ridging and scoring													**1**:1/8	**1**:1/8
Shallow tooled linear line/s	**4**:4/21		**8**:9/94				**6**:8/113	**1**:1/12	**6**:16/171		**10**:12/100	**2**:3/30	**22**:26/281	**59**:79/822
Tooled linear lines & ridging			**1**:2/16											**1**:2/16
Raised bosses													**2**:2/47	**2**:2/47
Stabbing			**1**:1/8				**1**:1/42		**3**:3/388				**1**:1/6	**6**:6/444
Finger- nail impressions	**3**:23/1509	**1**:1/11	**4**:4/82				**2**:2/22		**4**:4/50		**1**:1/12			**15**:35/1686
Finger tip & nail impressions	**2**:2/31				**1**:1/10									**3**:3/41
Finger–nail & pinching	**1**:1/5													**1**:1/5
Cordon			**2**:2/29						**1**:1/11		**1**:1/7		**5**:8/177	**9**:12/224
Cordon & incised lines													**1**:1/7	**1**:1/7
Cordon & finger-tipping													**1**:1/12	**1**:1/12
Cordon with finger-tipping	**3**:4/122		**1**:1/40				**1**:1/100		**12**:13/266		**1**:2/75	**1**:1/130	**7**:7/130	**26**:29/863
Cordon with finger-nail							**1**:1/16		**2**:2/44				**1**:1/8	**4**:4/68
Cabled cordon & finger tipping					**1**:1/107									**1**:1/107
Stamped									**1**:1/7				**3**:4/67	**4**:5/74
Shallow curvilinear lines							**1**:1/2						**1**:1/3	**2**:2/5
TOTAL	**58**:81/2503	**8**:8/158	**35**:44/679	**1**:1/6	**6**:7/183	**2**:150/8797	**29**:32/691	**1**:1/12	**65**:82/1653	**1**:7/69	**57**:77/1119	**16**:25/798	**114**:162/1834	**393**:677/18502

Table 4: Quantification of decorated sherds. Figures are arranged by vessel count (bold), number of sherds, and weight (g)

Decoration

By count, 6.1% of sherds in the assemblage were decorated (13.2% by weight). This included 677 sherds (18502g), representing a maximum of 393 vessels (Table 4). The decoration was originally recorded using a highly complex system of classification which recognised over 50 different of forms of treatment and 19 potential zones of application (giving over 950 combinations of decoration!). For the purposes of this report, many decorative techniques have been grouped together as have the vessel zones (This also applies to decoration on the MIA pottery which used the same system; detail of which can be found in the Mucking paper archive). Nevertheless, even which such 'lumping' the assemblages still displays a wide range of decorative schemes, all of which are can be paralleled in other large Late Bronze Age/Earliest Iron Age assemblages in Essex, notably those from Mucking North Ring (Bond 1980), Springfield Lyons (Brown forthcoming) and Lofts Farm (Brown 1988a).

At Mucking, the most common form of coarseware decoration was finger-tipping, found principally on the rim-top, rim-edge and shoulder (Table 4). Of the 393 vessel with decoction, 43% had some form of finger-tip treatment, whether on its own, or in combination with grooved lines, nail marks, or cordons. Other common forms of coarseware decoration included cordon application, mostly found at the shoulder, neck, or immediately below the rim. The finewares were decorated with a grooved/burnished lines, ridging, shallow tooled linear lines and horizontal combing. Decoration on these vessels was mainly found on the body, shoulder, neck, or immediately below the rim.

The form and frequency of decoration is often used a guide to assessing the chronological position of Late Bronze Age/Earliest Iron Age assemblages; particularly for the distinction between 'Plainware' and 'Decorated' Post-Deverel Rimbury pottery (Barrett 1980). Unfortunately, the frequency of decoration cannot be calculated in a straightforward manner, as ornamentation tends to be confined to restricted zones on the vessels (primarily rim, neck and shoulder). Gross counts, such as the proportion of decorated to undecorated sherds/feature sherds tend to either over or underestimate the incidence of decoration (Needham 1996b, 112). In this respect, it is difficult to gauge whether 6.1% sherd decoration at Mucking is a high, low or average frequency for a Late Bronze Age assemblage. The problem is compounded by the fact that such figures are rarely made explicit in reports.

One quantification method with appears more readily comparable is the frequency of rim decoration. Of the 656 different rims in the assemblage, 111 (17%) have some form of rim ornamentation. This figure is just 2% lower than that calculated for the latest deposited in the Mucking North rim (Barrett and Bond 1988, 28) and slightly greater than that calculated for the highest stratigraphic units L & M at Runnymede Bridge Area 16 (Needham 1996b, 112, Table 14), dated to the late 9th or early 8th century BC. Overall, this matches the broader patterns across Southern England, where levels of decoration fall around or above the 20% mark during the LBA/EIA transition (whether calculated by the number of decorated sherds, e.g. Potterne (Gingell and Morris 2000, 154), Petter's Sports Field (O'Connell 1986, 63); decorated vessels, e.g. Runnymede Bridge (Longley 1980, 70-1, fig. 46), Budbury (Wainwright 1970, 138).

Section 2: The South Rings assemblage

The most important assemblage of pottery derived from the ditches of the South Rings. Combined, these yielded over 278kg of pottery, a figure nearly double that recovered from the North Ring (Barrett and Bond 1980). The strategy for dealing with this large assemblage was devised during the EH/BM phase of post-excavation. The assemblage was sampled by quantifying pottery from 14 selected slots or 'boxes' from around the rings including (seven from the inner ring and seven from the outer ring). Pottery from the remaining slots was also weighed, though these results were only recorded in the paper archive. The analysed assemblage comprised 4867 sherds, weighing 69937g. By weight, this figure represents c.25% of the total ditch assemblage and 49.9% of the total analysed assemblage (Table 5).

Sample	No. sherds	Wt. (g)	MSW	% of the analysed assemblage (by wt.)
Total pottery weighed from the rings	-	278317	-	-
14 sample slots though the rings (*Inner ring sub-totals*) (*Outer ring sub-totals*)	4867 *4139* *728*	69937 *60265* *9672*	14.4 *14.6* *13.3*	49.9
Other recorded pottery from the rings (not within the sample slots)	386	5805	15.0	4.1
Features within the rings	5163	48421	9.4	34.5
Features outside the rings	683	16096	23.6	11.5
Total recorded	11099	140259	12.6	100

Table 5: Quantification of pottery by sub-assemblage

The sample slots were more or less evenly distributed around the circumference of rings, and were aligned so that slots in the inner and outer ring were broadly opposite one another (Figure 7). The lack of uniformity in the size and shape of slots meant that any direct alignment was not always possible. In addition, whilst it would have been favourable to analyse the separates terminals of both western entrances, the methods of excavation and finds allocation meant that this was not possible.

INSERT FIGURE 7 **Figure 7**: Location of sample slots

Sub-assemblage comparisons: fabrics, forms and surface treatment

Before exploring patterns in distribution, it is worth considering whether the pottery from the rings differed in composition to that from internal features, and more broadly, the assemblage as a whole.

There were a number of subtle differences in fabric frequencies. Whilst in every sub-assemblage over 80% of the pottery was flint-tempered, there were fluctuations in the relative frequencies of fine, coarse and mixed flint-fabrics. The rings contained the highest frequency of finer-flint fabrics, and the lowest frequency of coarse fabrics (55% with fine-medium and 42% with coarse-very coarse flint), Importantly, fabrics frequencies between the inner and outer ring were very similar, with only a 2-3% discrepancy between major fabric groups - figures only slightly different to that in the assemblage as a whole (40% and 53 % respectively).

The main distinction, however, was with fabric groups from the interior features. By weight, only 26% of this pottery was made with finer flint fabrics (58% coarse-very coarse). The reduced frequency was because 13% of the pottery contained a mix of inclusions, notably flint and sand, and, flint and quartz (Fabrics 18 and 19) - fabrics poorly represented in the rings or overall assemblage (just 2-6% respectively). The inner features therefore contained a rather different balance of fabric groups. This is important as fabric diversification and an increased use of sandy wares is a trend which emerges during the closing stages of the Late Bronze Age/ transition to the Early Iron Age. The relatively high frequency of flint and sand/quartz-tempered fabrics from the interior features could imply that latest acts of deposition occurred within the ring interior rather than the ditches. However, theses are prevalent in the Middle Iron Age assemblage, and it is possible that the frequencies have been skewed by intrusive or miss-assigned Middle Iron Age pottery; a distinct possibility considering the later settlement cuts across the northeast area of the South Rings.

Despite the high incidence of finer fabrics in the rings, there was no significant difference in the frequency of burnishing. This is somewhat surprising, given the demonstrable relationship between grit size and surface treatment. Burnishing was found on 1169 sherds from the rings (12020g), representing 24.0% by count. This figure is near identical to that for the overall assemblage, and is only slightly high than that calculated for the internal features (1055 sherds, 75557g, 20.4% by count). One again, there were no marked distinctions between the pottery from inner and out rings, with 25% of sherds burnished from the inner (1018 sherds, 10662g) and 21% from the outer (151 sherds, 1358g). Uniformity was equally evident in characteristics such as form representation and vessels size. Figure 8 and 9 compare the frequency of vessel classes and vessel sizes form the overall assemblage against that recovered from the 14 sample slots and features internal to the rings. The graphs in are remarkable similar, and the only slight difference is that the internal features contained a higher percentage of Class IV fineware bowls.

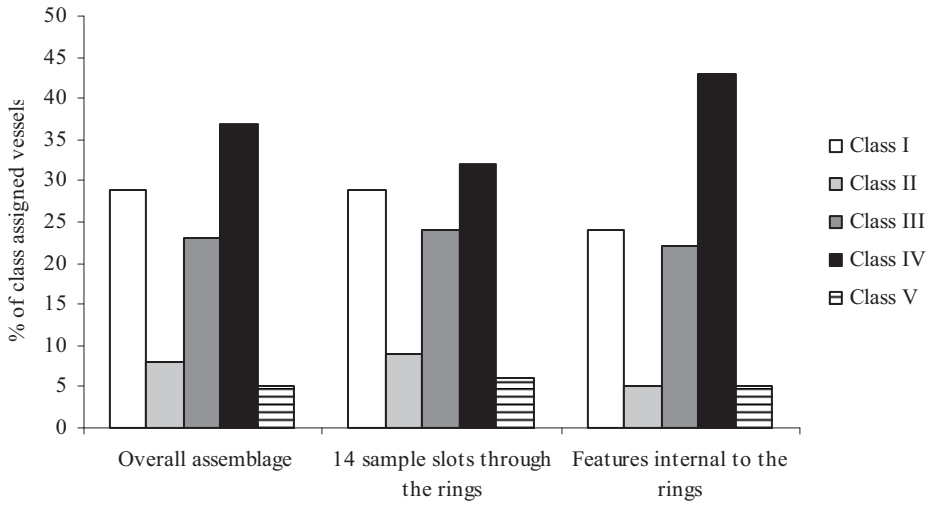

Figure 8: Comparison of vessel class frequencies. There were 34 form assigned vessels from the sample slots, equalling 60 sherds, 2887g, EVE 4.00 (vessel breakdown: 10 Class I, 3 Class II, 8 Class III, 11 Class IV vessels, 2 Class V). The interior features contained 27 form assigned vessels, equalling 209 sherds, 2958g, EVE 4.10 (vessel breakdown: 9 Class I, 2 Class II, 8 Class III, 16 Class IV, Class V).

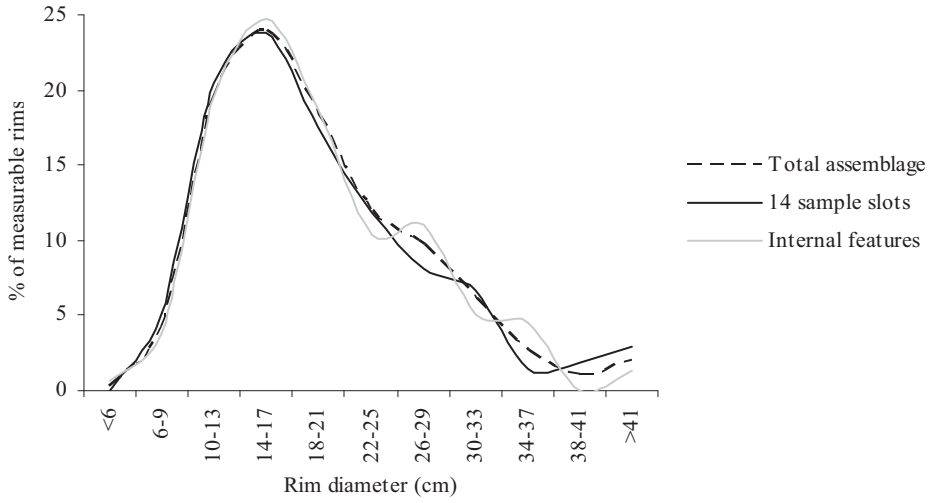

Figure 9: Comparison of rim diameters. 336 different rims were recovered from the sample slots (404 sherds, 7335g), 210 of which could be measured (260 sherds, 5959g, 15.31 EVE). 274 different rims were recovered from interior features (540 sherds, 5907g), 154 of which were measurable (397 sherds, 5098g, 13.12 EVE).

There is some degree of contrast in the incidence of decoration. At a broad level there appears only to be minor fluctuations in frequency, with 5.4% of sherds from the rings being decorated (262 sherds, 5121g), as opposed to 3.8% from the interior features (190 sherds, 2410g); neither figure being radically different from the 6.1% average from the total assemblage. In addition, Figure 10 shows that decoration was distributed on the same zones of the vessels in broadly the same frequency, whether they were from the sample slot, interior features or overall assemblage. Nevertheless, differences are more marked when only rim-decoration is considered. In the rings,

22% of rims were decorated (74 out of 336) in contrast to 9% from the interior features (25 out of 274). The vast majority of decorated rims were recovered from the inner ring, where 69 out of the 291 rims were embellished (24%). In the outer ring, only 11% were treated (5 out of 45); a figure comparable to that from the interior features. As stated above, the frequency of rim treatment is likely to give a better indication of the number of decorated vessel in an assemblage, as opposed to sherd count. It is deduced therefore, that the frequency of *vessel* decoration was twice as high in the inner-ring assemblage as in was in any other sub-assemblage from the South Rings. These differences are possibly related to chronology and depositional sequence, and will be discussed in more detail when the stratigraphic evidence is examined (see below).

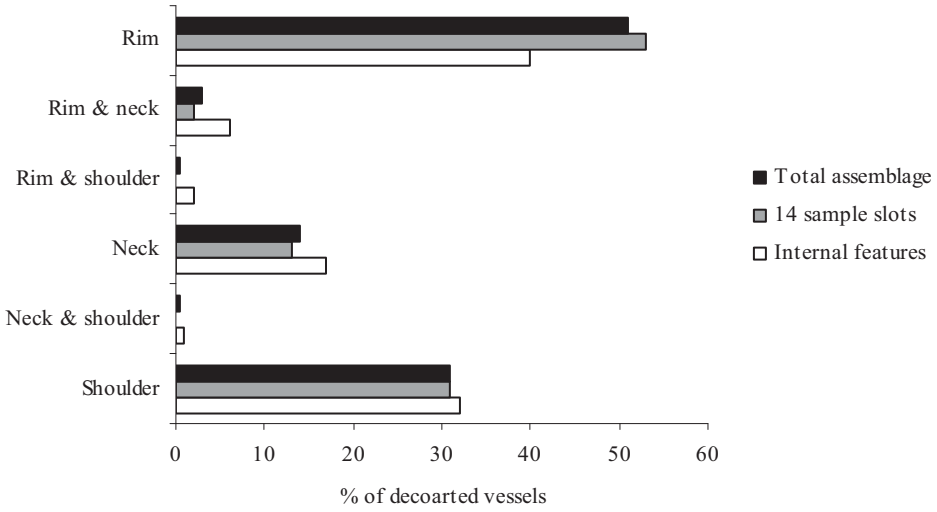

Figure 10: Frequency of decoration on different vessel zones. Decoration on or around the base, or on ill-defined zones such as 'body' have been excluded. The number of decorated vessels includes 205 from the overall assemblage, 134 from the rings, and 52 from internal features.

In conclusion there are relatively few contrasts between the composition of the overall assemblage and that from rings or internal features. Although there are differences in the portion of decorated vessel and, to a lesser extent, fabric frequencies (both of which may be chronologically related), the basic composition of groups was remarkably uniform - even those of the inner and outer ring. It is unlikely therefore that a more detailed examination of the sub-assemblages will reveal any new patterns which have not already been elucidated at the level of overall assemblage. Consequently, one cannot argue that a substantially different 'service' of vessels was deposited in the ring's ditches as opposed to the features therein, or the assemblage as a whole. Irrespective of the nature of consumption within the South Rings (both in terms of foodstuffs and ceramics), one may suggest that the vessels from these sub-assemblages probably had the same range of storage, cooking and serving functions. This is not to argue that these practices were both quantitatively and qualitatively different to those occurring elsewhere on the site, nor does it deny that there may be distinct differences in the nature and location of ceramic deposition. Rather, this discussion had aimed to demonstrate that at the level of sub-assemblage, the character and composition of these groups was consistent.

So far there has been no comparison between pottery recovered from the South Rings and that from external features. During the EH/BM phase of post-excavation, pottery analysis focused on South Rings area (Etté 1993, 18), with only limited sampling of the extra-mural settlement (the extent of which can now be shown by plots of the MPX pot data). Only one area was investigated in detail, this being the cluster of three post-built roundhouse in the northeast corner of the site (RH 107-109), together with a scatter of pits and postholes in their immediate vicinity. The analysed assemblage contained 683 sherds, weighing 16096g. Though this may appear to be a moderate sized assemblage, over half the pottery (by weight) belonged to a single large Form C storage jar (149 sherds, 8792g), which accounts for the high MSW in Table 5.

Overall, the assemblage from external features contained just six vessel forms (177 sherds, 1073g), including three Class I jars, two Class III bowls and a single Class IV bowl. Compared to South Rings, the frequency of burnishing was lower, with only 15.5% of sherds treated (106 sherds, 1234g). In addition, there was a more even balance between the number of small-medium sized vessels (around 14-17cm in diameter) and large vessels (around 26-29cm in diameter). This contrasts to the South Rings where small-medium sized vessels dominated. It should be noted, however, that only 14 of the 23 rims in the assumable were measurable (183 sherds, 10455, EVE 1.55), and that the results may be skewed by the small sample size. This may also explain the high levels of decoration, with 12% of sherds embellished (64 sherds. 54% of rims).

Distributions around the South Rings

Pottery was not evenly distributed around the circumference of the South Rings ditches. By weight, the inner ditch contained over 5 times the quantity of pottery than the outer ditch. A total of 237281g of pottery was recovered from the inner ring, compared to just 41036g from the outer (no sherd counts are available). The gross distribution of material is shown in Figure 11. The plots clearly demonstrate the concentration of deposition around the entrances of the inner circuit and the areas towards the middle of the two inner 'ditch-arcs'. By contrast there were few 'highs' or areas of concentration in the outer ring, with no single slots yielding over 7500g of pottery. The only relative peak was toward the centre of the southern ditch-arc, corresponding to the high in the inner ring. Whist is could be suggested that deposition was focussed on the eastern half of the outer-ring; distribution is skewed by the poor preservation and/or incomplete excavation of the western side of the circuit. The complete absence of small features across much of this zone implies that the western half of South Rings suffered extensive machine truncation and/or inadequate surface clearance. Given the localised thinning of the ditch in some areas, the truncation is more likely, and since the majority of the pottery was recovered from the capping fills (see below), severe truncation would have had the greatest impact on artefact recovery.

INSERT FIGURE 11 & 12.

Figure 11: Gross distribution of pottery around the South Rings

Figure 12: Adjusted distributions. Density of pottery per m^2 of each slot excavated

Other biases the Figure 11 also need to be addressed, including the differential size of the excavated slots. Some of the slots were extremely large, such as the two though the eastern terminals of the inner ring, and the slot in the centre of the southern inner ditch-arc. These large slots exaggerate the quantities of pottery recovered. To make figures more comparable, the weight of pottery from each slot was divided by the surface area excavated, giving a more reliable index of density. The adjustments are presented in Figure 12, and show that the main focus of ceramic deposition was along the central area of the inner ring's northern ditch-arc and the western terminals. There were also localised 'highs' in the inner ring's southern ditch arc.

Ring	Slot No.	No. sherds	MSW	No./wt. (g) burnished	% burnished	No. decorated sherds	% of sherds decorated	no. diff. rims/ no. decorated (vessel count)	% rims decorated
Inner	1*	305/6190	20.3	74/1092	24.3	15	4.9	28/4	14
Inner	2	906/14035	15.5	114/909	12.6	36	4.0	61/12	20
Inner	3	453/5076	11.2	114/970	25.2	17	3.8	31/5	16
Inner	4*	1366/16386	12.0	407/3935	29.8	95	7.0	82/29	35
Inner	5	439/6195	14.1	80/758	18.2	24	5.5	31/7	23
Inner	6	300/4050	13.5	143/1337	47.7	16	5.3	31/6	19
Inner	7*	370/8333	22.5	86/1661	23.2	25	6.8	27/6	22
Outer	8*	117/2213	18.9	11/308	9.4	12	10.3	7/-	0
Outer	9	154/1383	9.0	28/164	18.2	8	5.2	10/2	20
Outer	10	76/539	7.1	28/173	36.8	4	5.3	6/-	0
Outer	11*	98/1680	17.1	21/122	21.4	1	1.0	6/-	0
Outer	12	71/850	12.0	15/103	21.1	2	2.8	6/-	0
Outer	13	94/981	10.4	23/270	24.5	2	2.1	3/-	33
Outer	14*	118/2026	17.2	25/218	21.2	6	5.1	7/2	29
Inner Total	-	*4139/60265*	*14.6*	*1018/10662*	*24.6*	*228*	*5.5*	*291/69*	*24*
Outer Total	-	*728/9672*	*13.3*	*151/1358*	*20.7*	*35*	*4.8*	*45/5*	*11*
TOTAL	-	4867/69937	14.4	1169/12020	24.0	263	5.4	336/74	22

Table 6: Quantification of pottery from the 14 sample slots. * denotes slots through the terminals.

Hints at other distribution patterns can be gleaned by comparing different variables from the 14 sample slot assemblages (Table 6). The figures confirm the distributions in Figure 10 and 11, which indicate that large quantities of pottery were deposited in the inner ditch, notably at the western entrance (Slot 4). The eastern entrance terminals had the highest MSWs (Slots 1, 7, 8 and 14), suggesting that these areas contained relatively large un-abraded sherds, presumably deposited soon after breakage. There was less patterning, however, in the distribution of finewares and decorated sherds. Whereas the inner ring contained a much higher frequency of decorated *vessels*, the overall percentage of sherd decoration was remarkably similar between circuits. Likewise, whilst the terminals contained a slightly higher frequency of decorated and burnished sherds, the differences can hardly be deemed significant. Neither can the fluctuations in fabric frequency, which display little clear-cut patterning (Figure 13). The only true anomaly was in Slot 10, where there was an inflated percentage of sherds with mixed inclusions (Fabrics 16-18).

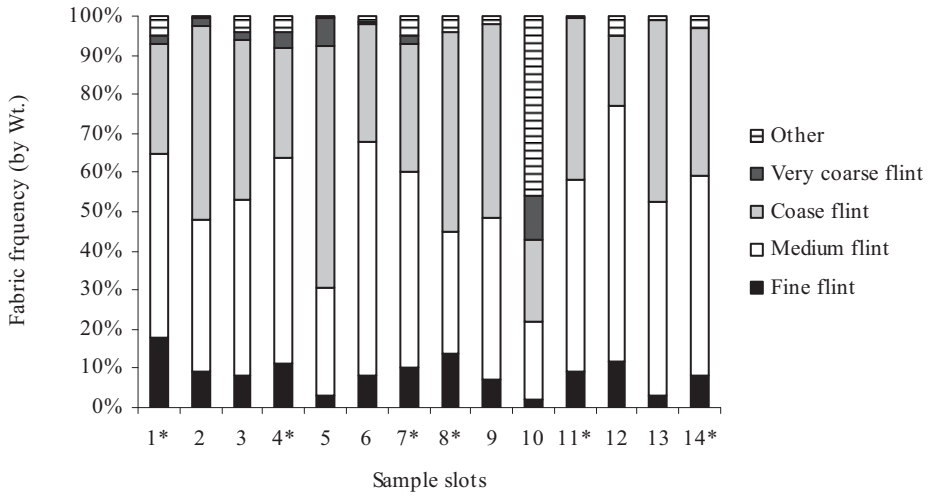

Figure 13: Relative frequency of different fabrics groups in the 14 slot sample. * denotes slots through the terminals. Inner ditch: Slots 1-7. Outer ditch: Slots 8-14.

With the exception of MSW, there was little sense of overall patterning in the distribution of different variables from the 14 slot sample. Though there are marked differences in the overall character of the individual slots assemblages, there is little evidence to suggest that particular traits are linked to specific areas of the rings. For example, fineware burnished sherds are not restricted to a particular zone, but are found through the rings, albeit in varying quantities. The same is true of decorated sherds/vessels (although there are clear distinctions in their frequency between the inner and outer ring sub-assemblages). The lack of a 'fine-grained' spatial patterning is possibly a product of the sample size, which may be too small to register localised variations. However, it is more likely that ceramic refuse was never categorized or deposited in this manner. That there is so little spatial patterning implies that most *types* of pottery were not marked for deposition in particular places. The only real distinction is that different *quantities* of pottery were deposited in different areas, notably the eight points of 'concentration' around the inner ring, and more specifically, the four high density zones in the north ditch-arc of the inner circuit (Figure 11 and 12).

Distributions within the South Rings

Pottery from 248 interior features was recorded during the EH/BM phase of post excavation (5163 sherds, 48421g). In this analysis, 19 of the features could not be located on the plan, and are therefore excluded from the following discussions (168 sherds, 1850g).

Most pottery was recovered from pits and postholes within the inner ring (Figure 14). The distribution of these features is largely a product of preservation; most surviving in a c.15m wide northeast-southwest 'corridor' which skirts the inner eastern edge of the RB1 enclosure. The features containing the largest assemblages of pottery were distributed in and around the southern half of roundhouse 5, and to a lesser extent, the area to the northeast of this structure. The ring-gully/wall-trench of roundhouse 5

yielded the largest quantity of pottery, totalling 687 sherds (3987g). Within the outer ring, there was a low density but widespread scatter of features yielding pottery. Most were locate in the eastern half of the ring where preservation was generally better. Some of the features in the western half of the enclosure are probably Middle Iron Age in date, particular those around the terminals of the inner ring's western entrance, where several Middle Iron Age roundhouses are located. Overall, very few features in the outer ring contained over 250g of pottery. Most of the features yielding high quantities were located in a small area in the the southeast quadrant of the ring.

INSERT FIGURE 14: **Figure 14**: Distribution of pottery in interior features (by weight)

The gross distribution of pottery broadly parallels that from the ditch circuits, with deposition centring on the inner ring. Another pattern connecting the distributions is the lack of evidence that specific types of sherds/vessels were repeatedly deposited in specific parts of the interior. Undeniably, most burnished fineware sherds are found in features within the inner ring - in large quantities in the pits and postholes south of Roundhouse 5 (Figure 15). However, as these features contain the most pottery *overall*, it is hardly surprising that they yielded the most burnished sherds (in most cases their number increased proportionally to the size of the assemblage). The same argument can be used to explain the distribution of decorated sherds (Figure 16). Once again, these were mainly confined to features with the largest assemblages.

INSERT FIGURE 15: **Figure 15**: Distribution of burnished sherds in interior features (by weight)
INSERT FIGURE 16: **Figure 16**: Distribution of decorated sherds in interior features (by weight)

Despite issues of preservation, the broader patterns of pottery distribution in the interior features compliment those in the ditch circuits. Taken together, the evidence indicates that the inner ring and its internal features were the main focus for acts of pottery deposition. These acts often involved vast quantities of ceramic refuse, creating the dense concentrations observable in the distribution plots. As with the pottery in the ditches, there is little evidence that different types of sherds/vessels were selected for deposited in particular places, as has been argued for other ringwork sites (Parker Pearson 1996).This is not to deny that there is patterning in the spatial distribution of material, but to stress that this patterning relates specifically to the *quantity* of pottery deposited. More often than not, individual feature-based assemblages contained a generalised matrix of ceramic refuse, with varying proportions of finewares and coarseware, decorated and un-decorated sherds, and sherd from different fabric groups. Even in the largest assemblages there is often little in the charcter or composition of the material to distinguished them from other small groups. What sets these apart is the size of assemblages, and the fact that such deposits were repeatedly made in particular locations in the interior.

Ceramic change and the stratigraphic sequence

The 14 sample slots were all excavated in six inch spits, labelled one from the surface, down to 9 or 10 at the base, depending on the depth of the ditch. The pottery from each slot was bagged by co-ordinate and spit number, allowing specialists to crudely reconstruction the vertical stratification of material. During the EH/BM phase of post-excavation, an attempt was made to overhaul the spit-system and re-contextualise the

pottery by linking it back to the sequence of ditch fills recorded on the sections and notes books. Examination of the sections revealed a basic sequence of fills, each of which was assigned a context number. The position of the spits, however, had to be reconstructed in relation to these fills. This was achieved by drawing out the position of each spits over the top of the available sections, thus defining which context or range of context was excavated in each six inch spit.

The notes in the paper archive testify to the problems which were encountered in this process. Firstly, the sections were of variable quality and were not equally distributed around the circuit of the rings. This meant that sections not directly linked to the sample slots had to be used to correlate spits and contexts. Problems with this approach were recognised, and in most cases, various sections were used in collaboration, so as to check consistency and even out differences. The second problem was more difficult to overcome, as most spits cross-cut several fills in the ditch simultaneously. In other words, there was no straightforward correlation between spits and context, meaning that a range of alternative contexts were given to each individual spit.

The new system was complex and is cumbersome to work with. Each spit previously denoted by a single number from 1-10, was now replaced by between one and five different context numbers. For example, spit 1 in Slot 7 cross-cut parts of all major fills, so was given the context numbers [300/3519/3520/301/302]. In reality, most of this fill dug in this slot belonged to the 'late fill' of the ditch (encompassing contexts [300/3519/2520]). However, because there was the possibility that some material was from the primary or secondary fills, it was necessary to add the other two context numbers. Ultimately this scheme could not adequately quantify the *probability* that pottery from a given spit derived from one particular fill/context. The 'compromise' of providing alternative context numbers has made it extremely difficult to compare the data, or quantify how much pottery there was in each context. For these reasons the following discussion are based around the original spit system, through broad correlations between spit and fill are suggested.

The spits have been divided into three groups: Group 1, spits 1-3; Group 2, spits 4-6; and Group 3 spits 7-10. These broadly correspond to upper, middle and lower fills of the ditch (Table 7). A re-examination of the sections suggests that the bulk of fills dug in the Group 1 spits belonged to the capping of the ditches, commonly referred to as 'late fill'. This encompassed the charcoals layer [3220]/[3401], the late secondary fills [3519]/[3400], and the tertiary fill [300]/[307]. It is therefore assumed that *most* pottery from the Group 1 spits derived from this finial episode of infilling; a supposition supported by the note book entries. In order to clarify this relationship seven sections from the inner ring were examined in more detail (section numbers 4, 6, 7, 363, 364, 446a, 446b). The area occupied by each context/fill in each spit was calculated, and expressed as a percentage. This provided a means of estimating the probability that pottery from an individual spit came from a particular fill. For example, the 'late fill' occupied between 79-100% of the area in spits 1 in each section, with a mean average of 93%. There is therefore a very high probability that the pottery from spits 1 derived from the 'late fill'. As expected, the probability fell with each spit, as the fills were concave in profile (over spits 1-3, the average fell from 93%, to 85% to 75%). However, the overall average for the Group 1 spits was

84%, and we can therefore be confident that the vast majority of potter from the Group 1 spits derived from the ‘late fill’.

<table>
<tr><th colspan="2">Spit Group</th><th>Fill</th><th colspan="2">Context</th><th>Inner Ring</th><th>Outer Ring</th></tr>
<tr><td rowspan="2">Group 3
(Spits 7-10)</td><td>-</td><td rowspan="2">Lower</td><td colspan="2" rowspan="2">Primary</td><td rowspan="2">[302]</td><td rowspan="2">[309]</td></tr>
<tr><td rowspan="3">Group 2
(Spits 4-6)</td></tr>
<tr><td>-</td><td>Middle</td><td colspan="2">Secondary</td><td>[301]</td><td>[308]</td></tr>
<tr><td rowspan="3">Group 1
(Spits 1-3)</td><td rowspan="3">-</td><td rowspan="3">Upper</td><td rowspan="3">‘Late Fill’</td><td>Charcoal</td><td>[3520]</td><td>[3401]</td></tr>
<tr><td>Late Secondary</td><td>[3519]</td><td>[3400]</td></tr>
<tr><td>Tertiary</td><td>[300]</td><td>[307]</td></tr>
</table>

Table 7: Relationship between spit groups, fills and contexts in the South Rings.

As the ‘late fill’ did not penetrate into any of the Group 3 spits, we can be confident that all this pottery belongs to the primary or secondary fills. Using the methods above, an average of 90% of the area in spits 8 belonged to the primary fill, with 100% in spits 9 and 10 (only 34% in spit 7). The overall average was 70%, meaning there is a strong probability that pottery from the Group 3 spits derives from the primary fill. The patterning for the Group 2 spits is more complex. The base of the ‘late fill’ is caught within upper spits of the group (spits 4-5); whilst the secondary fills dominate the lower spits (spits 5-6). Contexting is problematic, and the probability results are too varied to be considered reliable. In this sense the division is arbitrary, and Group 2 spits are best defined as a convenient ‘middle group’.

A vast quantity of pottery was recovered from the upper fills of the South Rings ditches. The assemblage from the Group 1 spits comprised 3944 sherds weighing 54071g (EVE 26.31). Most pottery derived from the inner circuit, which contained over seven times the quantity found in the outer ditch. Overall, 77% of the pottery from the sample slots was recovered from the Group 1 spits, broadly equivalent to the ‘late fill’ contexts. These spits yielded over three quarters of the pottery from nine of 14 individual sample slot assemblages, and in Slots 11 and 12, all the pottery was found in this horizon (Table 8).

Changes in distribution

The pottery was more or less evenly distributed around the circumference of the outer ring. This was not, however, the case for the inner rings, where deposition concentrated around the western entrance and the central area of the southern ditch-arc. In the latter zone, Slots 2 and 3 yielded 40% of all the pottery from inner ring Group 1 spits (30% and 10% respectively). This compares to just 9% in Slots 5 and 6 on the opposite side, in the northern ditch-arc (5% and 4% respectively). The western entrance yielded 32% of the pottery (Slot 4), whilst that Slots 1 and 7 though the eastern terminals totalled 20% (6% and 14% respectively). In general, the slots through the eastern entrances yielded lower frequencies of pottery in their upper fills,

as did the slots through the centre of the northern inner ditch-ach (Table 8). The exception was terminal Slots 7. However, here the pottery from the Group 1 spits had a MSW that was considerably higher than elsewhere, suggesting that a different *kind* of deposition occurred, involving a smaller number of larger, 'freshly' broken sherds.

Slot	Upper fill: Group 1 (spits 1-3)			Middle fill: Group 2 (spits 4-6)			Lower fill: Group 3 (spits 7-10)		
	no./wt (g) of sherds	% of slot assemblage (by wt.)	MSW	No./wt (g) of sherds	% of slot assemblage (by wt.)	MSW	No./wt (g) of sherds	% of slot assemblage (by wt.)	MSW
1*	178/2714	43.8	15.2	77/1532	24.7	19.9	50/1944	31.4	38.9
2	888/13867	98.8	15.6	18/168	1.2	9.3	-	-	-
3	431/4953	97.6	11.5	22/123	2.4	5.6	-	-	-
4*	1293/15310	93.4	11.8	67/1035	6.3	15.4	6/41	0.3	6.8
5	233/2405	38.8	10.3	206/3790	61.2	18.4	-	-	-
6	142/1904	47	13.4	121/1760	43.5	14.5	37/386	9.5	10.4
7*	251/6437	77.2	25.6	44/772	9.3	17.5	75/1124	13.5	14.9
8*	51/596	26.9	11.7	31/494	22.3	15.9	35/1123	50.7	32.1
9	126/1218	88.1	9.7	19/128	9.3	6.7	9/37	2.7	4.1
10	34/225	41.7	6.6	39/289	53.6	7.4	3/25	4.6	8.3
11*	98/1680	100	17.1	-	-	-	-	-	-
12	71/850	100	12	-	-	-	-	-	-
13	92/958	97.7	10.4	2/23	2.3	11.5	-	-	-
14*	56/954	47.1	17	31/618	30.5	19.9	31/454	22.4	14.6
Inner Total	*3416/47590*	*79*	*13.9*	*555/9180*	*15.2*	*16.5*	*168/3495*	*5.8*	*20.8*
Outer total	*528/6481*	*67*	*12.3*	*122/1552*	*16*	*12.7*	*78/1639*	*16.9*	*21*
Total	3944/54071	77.3	13.7	677/10732	15.3	15.9	246/5134	7.3	20.9

Table 8: Quantification of pottery by sample slots and spit groups. * denotes slots through the terminals

The Group 2 spits from the middle fills yielded 677 sherds, weighing 10732g (EVE 9.30). The distribution of pottery was the mirror image of that in the upper fills. In the inner ring, deposition was clearly focused on the centre of the northern ditch-arch, where 60% of the pottery derived from Slots 6 and 7 (41% and 19% respectively). On the opposite side of the circuit, in the southern ditch-arc, Slots 2 and 3 contained just 3% of inner ring's Group 2 assemblage (2% and 1% respectively). The eastern entrance was also a focus for deposition, in both the inner and outer circuit. In the inner ring, 25% of the Group 2 pottery was recovered from Slots 1 and 8 (17% and 8% respectively). The patterns in the outer ring were even more extreme. 99% of the pottery was found in the southeast half of the ring, with 71% deriving from the Slots 8 and 14 at the eastern entrances (31% and 41% respectively). Neither assemblage was especially large, but the MSW were much higher than in other outer ring slots. The same was true from Slot 1 and 8 in the inner ring, suggesting that there was a preference for depositing large 'freshly' broken sherds around the eastern entrance.

The smallest assemblage of pottery was recovered from the primary fills of the South Rings ditches. In total, the Group 3 spits contained 246 sherds, weighing 5134g (EVE 4.40). The pottery was recovered from just eight of the 14 sample slots, though 90% came from the four slots through the eastern entrance. The rest of slots yielded just

489g of pottery between them. In the inner ditch assemblage, 88% of the pottery came from the eastern entrance (56% from Slot 1, 32% from Slot 7), whilst in the outer ring the figure reached 96% (68% in Slot 8, 28% from Slot 14). As with middle fills of the ditch, MSWs were notably higher in the eastern terminals than elsewhere, particularly in Slots 1 and 8 where average sherd weights exceeded 30g. The fact that this *type* of deposit (consisting of a small numbers of large sherds with high average weights) was specific to the terminals of the eastern entrances, both in the lower, middle, and to some extent the upper fills, suggests that the acts responsible for their inclusion were markedly different to those which formed accumulations elsewhere in the rings.

Changes in composition

The stratigraphic sequence of ditch fills provides a means of analysing ceramic change at the South Rings. Changes to form, fabric, vessel size, surface treatment and decoration are examined across the lower, middle and upper fills of the rings (using the pottery from the three spits groups defined above). For this exercise, pottery from both the inner and outer ditch has been grouped together, mainly because the assemblages from the lower fills are too small to be considered independently. This is a justified approach, given a) the proven similarities in the overall character and composition of the inner and outer ditch assemblages (see above); a) there is no evidence to suggest the stratigraphic sequences are markedly different; c) there is nothing to suggest the pottery is of different date.

Differences in form representation between the ditch fills indicates a broadening of repertoire across the stratigraphic sequence, with the addition of more complex vessel forms, included at first, the addition of bi-partite and tripartite angular fineware bowls, and finally, angular tripartite jars. The changes appear to be real, though the data are skewed by the small size of the assemblages from the lower and middle fills.

In total, the lower fills contained only five identifiable vessels forms (12 sherds, 1208g, rim EVE of 0.85). The repertoire was restricted to round shouldered jars and bowls, and included three Class I jars, a Class III bowl and a Class IV bowl (Figure X). The middle fills also yielded a limited number of vessels, with only eight identifiable forms (15 sherds, 243g, rim EVE of 1.15). The repertoire was, however, slightly broader than in the lower fills, incorporating vessels with both rounded and angular shoulders, including bi-partite and tripartite finewares. All the identified forms were bowls and cups (two Class III bowls, five Class IV bowls and a single Class V cups). Unsurprisingly, the widest repertoire was found in the upper fills of the ditch, where 21 forms were identified (33 sherds, 1436g, rim EVE of 2.00). With the exception of Forms E, L, M and Q, vessels of every type were represented, included the angular tripartite jars and finewares jars, which were not represented in the lower horizons (seven Class I jars, three Class II jars, five Class III bowl, five Class IV bowls and I Class V cup).

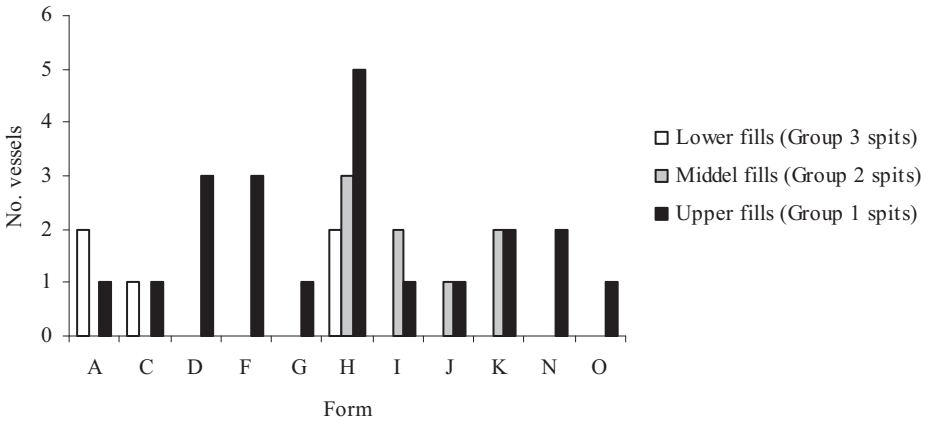

Figure 17: Comparison of forms representation across the stratigraphic sequence

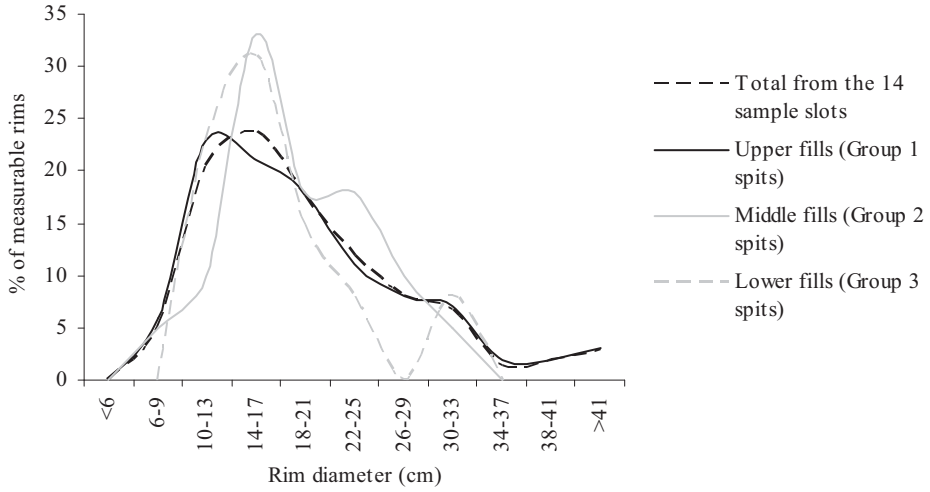

Figure 18: Comparison of rim diameters across the stratigraphic sequence. 17 different rims were recovered from the lower fills (26 sherds, 1408g), 13 of which could be measured (21 sherds, 1312g, rim EVE 1.30). 53 different rims were recovered from the middle fill (64 sherds, 772g), 39 of which were measurable (49 sherds, 650g, rim EVE 3.15). 266 different rims were recovered from the upper fills (314 sherds, 5155g), 158 of which could be measured (190 sherds, 3997g, rim EVE 10.86)

There were also changes to sizes of vessels deposited at in the rings. The changes were subtle, but can be mapped by plotting the frequency of rim diameters. The graph in Figure 18 shows a gradual change in proportion of different sizes vessels. In the lower fills, there are two clear peaks, giving a distribution bimodal shape to the graph, with a min a subsidiary mode. The evidence from elsewhere in this report suggests that this assemblage was dominated by bowls and small jars around 14-17cm in diameter (mainly Class IV), with a small but significant number of large jars, represented by the peak at 30-33cm (mainly Class I). In the middle fills of the ditch, the there were a much higher percentage of medium sized vessels, as represented by

the second peak around 22-25cm. The frequency of small vessels remained broadly similar, showing that it was the proportion of larger vessels which declined.

The shape of the graph for the upper fill was very similar to that from the 14 slot sample as a whole. The peaks in this horizon are far less distinct, indicating that a broader and diverse range of different sized vessels were being deposited. Small vessels around 14-17cm continued to dominate, but the peak was less accentuated, and the graph displayed a much longer 'tail' or 'fall off', with only slight secondary rises at 30-33cm and 41cm+. Overall, the shape of the graph shifted from one with bimodal distribution with well defined peaks, to one with a smoother profile and long tail. The breakdown of the bi-modal distribution suggests that a wider range of medium sized vessel was deposited, as well as a small number of very large storage jars. Taken together, the evidence shows that that the assemblages became increasingly diverse, with more varied forms and sizes of vessel being added to repertoire as time progresses.

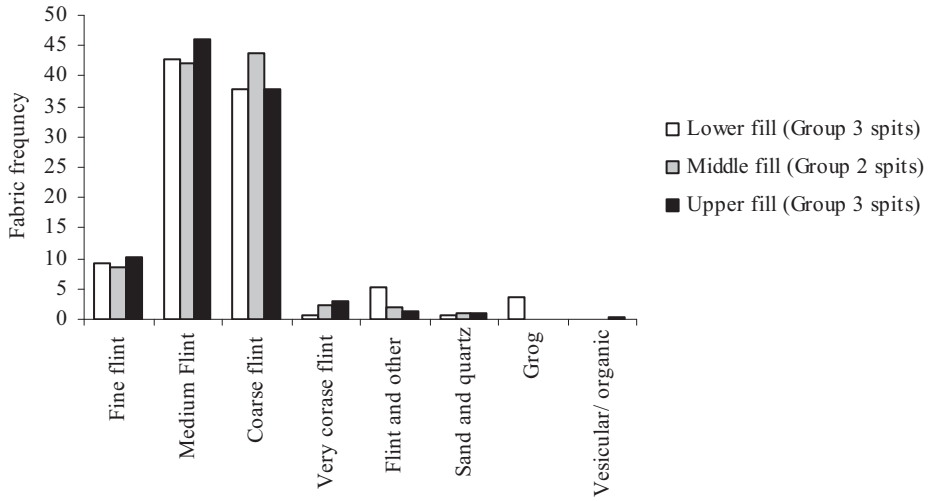

Figure 19: Comparison of fabric frequencies across the stratigraphic sequence.

Despite the changes to forms and vessel sizes, there was no significant alteration to fabric frequencies. Figure 19 shows the consistency across the stratigraphic sequence. This pattern is unusual as other contemporary sites in Essex show a trend away from coarse flint tempered ceramics to ones with a higher frequency of sand and flint during the Late Bronze Age/Earliest Iron Age transition (Brown 1998a, 269; forthcoming; Needham 2007, 28). This was clearly not the case at Mucking, and suggests that certain aspects of pottery production, such as fabric selection and clay preparation were sometimes deeply rooted in localised pottery traditions, and were less 'open' to negotiation and change than others aspects, such as vessel form, size and decoration.

There were more marked differences in the incidence of burnishing, which increased between the lower and middle fills. 17.5% of the sherds in the lower fills were

burnished (43 sherds, 890g) as opposed to 27.1% in the middle fill (184 sherds, 1861g) and 23.9% in the upper horizon (942 sherd, 9269g). The rise in burnishing implies that a greater number of Class II jars and Class IV/V bowls and cups were deposited in the later ditch silts, which itself may reflect fundamental changes to the ways people where choosing to eat and drink. Such vessels are normally associated with the serving and presentation of foodstuffs, and are functionally distinguished by their ability to hold liquids. The increased frequency of burnishing may therefore reflect a growing emphasis on the consumption of beverages; and in particular, consumption via small personalised bowls and cups, which could be held and used by individuals.

The most dramatic changes were seen in type, position and frequency of decoration. The lower fills of the ditch contained only 14 decorated sherds (304g), representing a maximum of eight decorated vessels (Table 9). The decoration was restricted to coarsewares, and can be characterised as 'un-patterned' or 'unfocused', as no one zone was repeatedly embellished. Although decoration was found on the rim, neck, shoulder, body and base of individual vessels, there was single location or technique of decoration was favoured. In addition, the decorative repertoire was extremely limited, with simple techniques such as scoring, pinching, finger-tipping, ridging or light burnishing/fluting being used. Different techniques were never used on the same pot, and decoration was always restricted to one zone per vessel.

The middle fills of the ditch contained 36 decorated sherds (711g) from a maximum of 30 vessels. The frequency of decoration was similar to that in the lower fills, though the range of techniques were broader, with new forms including stabling, horizontal combing and incising. More importantly, decoration was now used on finewares for the first time. The motifs were simple, but included combing, incising and the use of grooved/burnished lines on the outer-rim edge, neck and shoulder. The zoning of decoration was also more focused, with a clear emphasis on the rim and shoulder. Finger-tipping was the most common form of embellishment, with 46% of decorated vessels bearing this treatment.

The widest range of decorative techniques was found on pottery from the upper fills of the ditch, where 212 sherds (4106g) were treated from a maximum of 177 vessels. 19 different forms of decoration were identified; doubling the figure from the middle fills. Cordons were added to the coarsewares for the first time, including plain cordons, and varieties with cabling and finger-tip and nail impressions. Their 'late' addition is somewhat surprising, since they are often seen as a link between Deverel-Rimbury and Post Deverel-Rimbury decorative schemes. Other new forms of decoration included stamping and the use of finger-nail impressions (some of which are more akin to tooling or slashing). The finewares continued to display combed and incised motifs, though some displayed simple geometric patterns including incised triangles, or bands of diagonal lines. A single fineware vessel also displayed a shallow tooled curvilinear motif; though this could be residual. There were also changes to the zoning of decoration, with multiple zones being treated on the same vessel. In addition there was a slight an increasing emphasis on shoulder embellishment, whilst that on the neck declined (Table 10). Finger-tipping, either on its own, on cordons, or in combination with other techniques, remained the dominating form of decorative treatment, with 40% of vessels displaying this techniques (70 out of 177)

Fill	Dec/ zone	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	TOTAL
Lower fill (Group 3 spits)	Rim-top	**1**:1/54																			**1**:1/54
	Rim out. edge								**1**:1/12												**1**:1/12
	Neck				**1**:1/8																**1**:1/8
	Shoulder	**1**:1/19																			**1**:1/19
	Body	**1**:1/2	**1**:1/8																		**2**:2/10
	Base	**1**:7/194																			**1**:7/194
	Unknown					**1**:1/7															**1**:1/7
	Total	***4**:10/269*	***1**:1/8*		***1**:1/8*	***1**:1/7*			***1**:1/12*												***8**:14/304*
Middle fill (Group 2 spits)	Rim-top					**7**:8/132															**7**:8/132
	Rim in. edge				**1**:1/39																**1**:1/39
	Rim out. edge					**2**:2/20		**1**:3/53	**1**:1/16		**2**:3/39										**6**:9/128
	Neck	**3**:4/43											**1**:1/42								**4**:5/85
	Shoulder					**3**:4/122		**2**:2/53			**1**:1/17										**6**:7/192
	Body				**1**:1/28	**1**:1/16															**2**:2/44
	Unknown					**1**:1/10					**2**:2/56	**1**:1/25									**4**:4/91
	Total	***3**:4/43*			***2**:2/67*	***14**:16/300*		***3**:5/106*	***1**:1/16*		***5**:6/112*	***1**:1/25*	***1**:1/42*								***30**:36/711*
Upper fill (Group 3 spits)	Rim-top	**2**:2/11			**5**:6/92	**23**:23/427					**1**:1/9					**1**:1/4					**32**:33/543
	Rim in.edge					**3**:3/28			**1**:1/40												**4**:4/68
	Rim out. edge	**2**:2/18				**6**:9/131					**6**:7/64			**2**:2/20	**2**:2/29	**1**:1/40					**19**:23/302
	Rim + neck				**1**:2/8		**1**:1/36											**1**:1/107			**3**:4/151
	Neck	**1**:1/148	**1**:1/20		**1**:1/14	**5**:5/94			**1**:1/42		**1**:3/4					**1**:1/100	**1**:1/16			**1**:1/2	**13**:15/440
	Shoulder	**4**:5/34			**3**:3/57	**7**:7/131		**4**:7/106	**2**:2/19		**1**:1/34		**2**:2/368	**2**:2/39		**8**:8/189	**1**:1/6		**1**:1/7		**35**:39/990
	Body	**2**:2/19	**1**:1/34		**2**:2/19	**4**:5/181		**1**:1/8	**1**:1/51		**9**:11/98										**20**:23/410
	Base				**3**:5/240	**2**:2/98			**4**:4/32		**1**:1/5										**10**: 12/375
	Unknown	**1**:7/161	**3**:4/18	**1**:1/4	**2**:3/30	**5**:6/79		**2**:2/7	**9**:13/122	**1**:1/8	**7**:8/118	**1**:1/22	**1**:1/6		**2**:5/114	**2**:2/63	**1**:1/8		**3**:4/67		**41**:59/827
	Total	***12**:19/391*	***5**:6/72*	***1**:1/4*	***17**:22/460*	***55**:60:1169*	***1**:1/36*	*7:10/121*	***18**:22/306*	***1**:1/8*	***26**:32/332*	***1**:1/22*	***3**:3/374*	***4**:4/59*	***2**:7/143*	***13**:13/396*	***3**:3/30*	***1**:1/107*	***4**:4/74*	***1**:1/2*	***177**:212/4106*

Table 4: Quantification of decorated sherds by spit Group. Figures are arranged by vessel count (bold), number of sherds, and weight (g)

Key:
1. Grooved/ burnished lines
2. Scoring
3. Scoring and pinching
4. Pinching
5. Finger-tip impressions
6. Finger-tip & grooved/ lines
7. Combed
8. Ridging
9. Ridging and scoring
10. Shallow tooled linear line/s
11. Raised bosses
12. Stabbing
13. Finger-nail impressions
14. Cordon
15. Cordon with finger-tipping
16. Cordon with finger-nail
17. Cabled cordon & finger tipping
18. Stamped
19. Shallow curvilinear lines

Fill/zone	Rim-top	Rim inner edge	Rim outer -edge	Rim & neck	Neck	Shoulder	Body	Base
Lower	14.3%	-	14.3%	-	14.3%	14.3%	28.6%	14.3%
Middle	26.9%	3.8%	23.1%	-	15.4%	23.1%	7.7%	-
Upper	23.5%	2.9%	14.0%	2.2%	9.6%	25.7%	14.7%	7.4%

Table 10: Changing frequency of decoration on different vessel zones

When calculated by sherd count, the overall frequency of decoration changed very little across fill sequence (5.7% decorated for the lower fills, 5.3% for the middle fill and 5.4% for the upper fills). However, this has method of calculation has provided to be unreliable, and frequency is better judged by the incidence of rim decoration. In the lower fill only 12% of rims were decorated (2 out of 17), whilst in the middle and upper fills the figures reached 26% and 22% respectively (14 out of 53 rims decorated in the middle fills, 58 out of 2666 in the upper fill). The slight fall in the upper fill frequency probably results form the greater emphasis on zones other than the rim.

Section 3: Discussion

When dealing with such a large and varied assemblage of Late Bronze Age pottery, it is difficult to decide what the appropriate scale of analysis should be. This report has attempted to characterise the pottery at a number of nested scales, moving from broad discussion of the overall assemblage, though to comparisons of the sub-groups from the inner and outer rings; the internal features and extra-mural settlement, and finally, the pottery in the stratigraphic sequence of ditch fills. Each scale of analysis has revealed new patterns and points for discussion, not all of which have been taken to their logical conclusion. The aim of this summary is to consider the dating of the assemblage, and to outline how we might understand some of the changes to the Late Bronze Age repertoire in the context of the South Rings.

Date and affinities

For over two decades, pottery specialists working Eastern England have looked to Essex for an understanding of developments in Late Bronze Age ceramics. It is the sites with stratified deposits from Essex which have provided the clearest evidence for changes to the Late Bronze Age ceramic repertoire (Needham 1996, 255; Brown, 1996, 29; Brown 2001, 95). These changes are no well documented, and the trend from 'Plainware' to 'Decorated' Post-Deverel-Rimbury pottery has been aptly demonstrated at a number of sites including Springfield Lyons (Brown 1987 and forthcoming), Mucking North Ring (Barrett and Bond 1988), Lofts Farm (Brown 1988a), and to a lesser extent at site such as South Hornchurch (Harrison 2000) and Great Baddow (Brown 1994). The evidence from Mucking South Rings confirms these well established patterns, and adds further detail to our understanding of how the pottery changes; not only in terms of decoration and decorative frequencies, but also to forms, vessel sizes and the character and location of deposition.

The pottery from the lower fills of the ditch (Group 3 spits) belongs to the 'Plainware' phase of the Post-Deverel Rimbury ceramic tradition (Barrett 1980). The material is characterised by a narrow range of round-shouldered jars and bowls with a low incidence of decoration; executed by finger-working rather than tooling. It is suggested, however, that this assemblage is 'late' within the Plainware tradition, as there no straight sided or convex walled, hooked-rim jars (Form B). These types of Class I jar are common in Plainware assemblages, and are present in the lower primary/lower fills of Springfield Lyons ditches (Brown forthcoming) and the Phase 1-2 deposits of the Period I ditch at Mucking North Ring (Barrett & Bond 1998, 29, fig. 20, nos 3 & 8). They are also found in other plainware groups from Essex, with good examples from the lower ditch fills at Lofts Farm (Brown 1998, 265, fig.14, no.14), South Hornchurch (Harriosn 2000, 342, fig. 17, nos 16, 23, 47 & 57- 58), Broads Green (Brown 1998, 12, fig.5. nos 4 & 5); Stansted (Brown 2004, 44, fig. 40, nos 5 & 11); Grange Lane (Timby *et al.* 2007, 42, fig. 2.17, no 6). The absence of these Plainware forms in the South Rings ditches implies that deposition occurred no earlier than the 9th century BC. This raises the possibility that the ringwork was construction after that at Springfield Lyons and Mucking North.

It has always been assumed that occupation of the South Rings preceded that of the North Ring, owing to the radiocarbon dates (Barrret & Bond 1988, 37). However, the samples were taken from very different parts of the stratigraphic sequence, and are not directly comparable. The two dates for Mucking North Ring derive from unspecified charcoal of questionable age (Needham 2007, 48). The samples were taken from the Phase 5 upper ditch silts, belonging to the re-cut Period II ditch (Bond 1988, 55; HAR-2911: 2700 ± 80 BP; HAR-2893: 2630 ± 110 BP). The calibrated dates (at 94.4% confidence using OxCal V.4.0) are broad, but falling within the LBA and/or LBA/Earliest Iron Age timeframe. Two of the three dated samples from the South Rings derive from charcoal in the primary fills of the outer ring's eastern entrance (Clark 1993, 35); one from Sample Slot 8, Spit 9 (HAR-1708: 2810 ± 70 BP, coordinate 140x440.9, equivalent to Context [309]), the other from Sample Slot 14, Spit 9 (HAR-1634: 2770 ± 110 BP, coordinate 165x345, equivalent to context [309]). The calibrated dates are also inexact, but accord well with a Late Bronze Age bracket, and are broadly comparable to the earlier date from the North Ring (HAR-2911). It is possible, therefore, then that the South Rings were constructed slightly later than the

North Rings. Unfortunately, the current radiocarbon dates are too vague to give a refined sense of sequence, and so the chronological relation between the two enclosures remains debatable.

The early chronology of the Springfield enclosure is more secure, even through the radiocarbon date from the lower silts are unhelpfully imprecise (BW-2313R: 3090 ± 150 BP) The Plainware pottery from the primary/lower fills was found in association with clay moulds for Ewart type swords. Based on the back dating of Ewart metalwork (Newham et al. 1997) and a chronological review recently published by Stewart Needham (2007, 48), we can be confident that that enclosure construction occurred at a time when Ewart swords were still in production, presumably before the end of the 9th century BC.

In the South Rings, some of the pottery from the middle fills (Group 2 spits) of the ditch can be matched in Decorated assemblages of the Late Bronze Age/Earliest Iron Age transition. The pottery from these layers is the most difficult to interpret because the spits cross-cut both the lower and upper fills of the ditch. It is therefore impossible to judge whether this is a distinct horizon of ceramic deposition, or whether the assemblage is simply a combination of pottery form lower and upper ditch fills caught in an arbitrary division. It is unwise, therefore, to try and find direct comparisons for pottery with other sites as the 'integrity' of this group may have been compromised. Whatever the origins of this pottery, there are marked changes to it's character – the incised frequency of decorated vessels, changes to the type and location of decoration, the appearance of incised linear motifs on the finewares, and the expansion of the ceramic repertoire to include angular bipartite bowl and jars and tripartite bowls. These traits are all associated with Decorated assemblages which emerge toward the end of the 9th century BC, (Needham 1991, 377) and continue in use across Late Bronze Age/Earliest Iron Age transition. A single radiocarbon date was obtained from charcoal in the 'secondary' fills of the ditch (Clarke 1993, 35), though there is some ambiguity about which spit it was taken. Other than site co-ordinate, locating the charcoal in Sample Slot 1 through the inner ditch of eastern entrance (HAR-1630; 2790 ± 90 BP, coordinate 144x293), there is no reference in the archive (which could be found) to indicate what spit or context the sample was taken. The only hints were on the sections, which imply derivation from spit 4, in this instance, equivalent to the 'charcoal layer' or context [3520]. In other words, it may have been taken immediately above the true 'secondary fill'. The date itself falls within the Late Bronze Age spectrum, and is not significantly different to those from the primary fills.

Typologically, the pottery from the upper fills (Group 1 spits) was similar to that in the middle horizon, though the succeeding repertoires displayed a more expanded and elaborate range of vessel forms and decorative treatments. A site by site comparison of these would be a lengthy task, and is beyond the scope of this report, given the array of subtle distinctions both within and between regions. However, it is important to stress that character and composition of this late pottery is entirely consistent with other major Decorated assemblages from Essex, including those from middle and upper fills at Springfield Lyons (Brown forthcoming); the Phases 5-6 deposits of the Period II ditch at Mucking North Ring (Barrett & Bond 1988, 30-31, figs 21-22, nos 26-64), and the pottery from the upper fills of Lofts Farm enclosure ditch and lower fills of an external well (Brown 1988, 265-266, figs 14-15, nos 27-45, 45-54). These

horizons are all associated radiocarbon dates, though few have the precision we need to chart development across the Late Bronze Age/Earliest Iron Age transition, now dated at c.800 BC.

The dates from Mucking North Rings have already been discussed, and as Needham (2007, 48) notes, the date from HAR-2893 would in no way conflict with an 8th century BC origin for the Decorated Phase 5-6 assemblage. The same could be argued for the assemblage from the middle fills of the Springfield enclosure, associated with date of 2570 ± 140 BP (BM-2314R) from a charcoal sample (although the large standard deviation reduces its usefulness; Brown forthcoming). More telling is the charcoal date from the upper ditch fills of at Lofts Farm (HAR-8515; 2460 ± 70), which when calibrated, falls within the Earliest/Early Iron Age bracket. The same cannot be said for the date from the oak stake from well 840 (Brown 1888, 293; HAR-8521: 2800 ± 70 BP), which gives an earlier, more conventional, Late Bronze Age date. Clearly, more high-precision dating is needed to refine our chronologies. However, when we pull this evidence together, we may conclude the Decorated assemblages from the upper fills of the South Rings were probably deposited sometime after the late 9th century BC, and has a currency spanning the 8th, and possibly the early-mid 7th century BC.

Overall, we may summarise that the ceramic sequence at South Rings began with the deposition of a 'late' Plainware assemblage in the basal fills, sometime in the 9th century BC. Pottery in the middle and later fills was probably accumulating by the end of this century, and continued to be deposited in the 8th century BC, if not later. Much of the pottery from the internal features may also be contemporary with the late ditch deposits, though it is impossible to adequately untangle the groups without more detailed analytic work and further dating. Certainly some of these features must pre-date enclosure construction, as they were found within the area of the proposed banks. The absence of Darmsden-Linton style finewares, both within the upper ditch silts and internal features, suggest that there was no Early Iron Age occupation at ringwork. This style of pottery was probably in circulation by the mid 7th century BC, meaning that the ringwork was abandoned sometime during the Late Bronze Age/Earliest Iron Age transition.

Dating of pottery from the extra-mural settlement is more problematic, though the frequency of vessel decoration suggested it belongs to the transition, and is thus contemporary with the end of the South Rings sequence. However, further dating and analysis of this pottery is vital if we are to understand the true relationship between the open settlement and the ringwork.

The pottery sequence and enclosure history

The sequence of pottery deposits from the South Rings does more than just document ceramic change, but informs us about the social context in which these changes took place. The aim of this discussion is to show how transformation in the ceramic repertoire occurred alongside changes in the in the nature, scale and location of deposition, as well as to the types of activities occurring within this space.

In the early history of the South Rings, only a small collection of pottery was deposited in the South Rings, though the manner of its deposition was quite specific. Almost all of the pottery was deposited around the terminals of the eastern entrances, with twice as much material being recovered from the inner ring. The pottery in these terminal deposits derived from range of different coarsewares and fineware vessels. Nothing was particular unique about these compositions, though the very high MSWs imply that the pottery was relatively 'fresh' when it entered the ditch. This suggests that sherds derived from recently broken vessels, or belonged to parts of vessels removed from the process of further fragmentation (curation). Given its context and condition, this pottery is likely to formed part of 'formal' dumping events which were embedded with meanings and associations quite different to those bound up with of 'everyday' refuse maintenance. Such deposits of pottery and other artefacts are commonly encountered in the entrances of Essex enclosures, with examples at Springfield Lyons (Buckley and Hedges 1987), Lofts Farm (Brown 1988a), Broomfield (Atkinson 1995) and South Hornchruch (Guttmann and Last 2000).

Overall, the range of forms deposited in the lower fills was restricted to round-bodied bowls and round-shouldered jars. Decoration was sporadic, and was confined to the coarsewares. What is more, a minimal range of decorative techniques were used, and there was no evidence for a preferred zone of treatment.

The scale of deposition increased in the middle fills of the ditch. The Group 2 spits are the most difficult to link to back to specific contexts, but are broadly equivalent to the secondary fills, and the base of the 'late fill'. This means that these ceramics were deposited during the period when the ditch and bank were no longer maintained. Much of the secondary fill is described as slumped bank material, and there is the suggestion that the bank was deliberately levelled. Dumps of 'fresh' pottery continued to be made around the eastern entrance in a similar manner to the lower fills. Much of pottery from the outer ring was found in this zone. In the inner ring, however, most pottery was recovered from the northern ditch arc. The nature of ceramic deposition in this zone was qualitatively different to that which occurred in the eastern entrances. Not only was there a larger quantities of pottery involved, but the sherds were more fragmented (as indicated by the lower MSWs). Furthermore, the material was more varied in character, containing sherds of different sizes, from different vessels (coarsewares finewares, decorated and undecorated etc.), with varying degrees of abrasion. Most of this pottery had *not* been deposited immediately after breakage; its condition suggesting that sherds had more protracted post-breakage histories than those deposited in the eastern entrances. The contrasts between these types of pottery deposits need not imply that the one was more made with more consideration or formality than the other. There may in fact be qualities about the mixed matrix of fragmented and abraded sherds which made them appropriate for 'considered' depositional events.

The practices leading to the accumulation of these mixed ceramic assemblages are more difficult to reconstruct. Elsewhere it has been argued that similar assortments of material were both created on, and derive from pre-depositional contexts such as surface rubbish heaps (Brudenell 2007, 244-5; Brudenell & Copper 2008, 23). If this is the case, then such piles probably accumulated within the ring itself, as deposition was centred on the inner ditch (concealed from the outside by the bank between the inner and outer ditch circuit). Whilst ceramic refuse may have brought into the

enclosure, it is more likely that the refuse was generated from activities occurring within the inner ring.

Whatever the precise details behind this 'type' of deposition, it is interesting that its appearance goes hand in hand with marked changes to the ceramic repertoire. The pottery from the middle fills displayed a broader range of vessel forms and vessel sizes, including pottery with more elaborate profiles and angular shoulders. The evidence suggests a growing number of fine tablewares were being used and deposited, as the frequency of burnishing increased by a third. Moreover, the incidence of decoration doubled, and for the first time, finewares now began to be embellished with incised and combed motifs. The range of decorative techniques applied to the coarsewares also increased, with the rim and shoulder forming the focus for treatment. In other words, there were now a new set of complex visual distinctions being drawn between vessels. This combination of changes indicates that pottery was becoming an important medium for display, and reflects the increasing elaboration of consumption practices at the site.

Variation in the ceramic repertoire peaked in the in the closing stages of Bronze Age of activity at the South Rings. The most dramatic change was in the scale of ceramic deposition, which increased five-fold from the middle fills. An enormous quantity of pottery was dumped in the capping fills of the ditch, representing 77% of all the ceramics analysed from the sample slots. By weight, 88% of this pottery was recovered from the inner ring. The pottery was concentrated in specific zones, and the plots in Figures 11 and 12 probably reflect the broader distribution in the layer, with localised dumps of ceramic-rich refuse around the western entrance and the central areas of the two ditch-arcs. The analysis of the Group 1 spits suggested that most pottery was deposited in the inner southern ditch-arc. However, this is probably because Slots 2 and 3 were positioned through areas of concentration, whilst Slot 5 and 6 in the north ditch-arc fell between them.

The types of pottery deposits were similar to those in the middle fill. Parts of the eastern terminals continued to receive large 'freshly' broken vessel fragments, though the contrast between these and other 'types' of deposits was less distinct than in the lower horizons. Most pottery clearly derived from the large, localised dumps in the western half of the inner ring. The ceramics within these deposits were of mixed composition, similar in character and condition to those in the middle fills of the inner northern ditch-arc. Once again, was little to no evidence that different types of sherds received differential treatment in the manner or location of their deposition. The practices responsible for the generation, accumulation and deposition of these ceramic-rich refuse dumps may be similar to those which gave rise concentration in the northern ditch-arc of the middle fills, albeit on a much larger scale. If this is the case, we might envisage one or more large rubbish heaps forming within the ring interior, perhaps individual piles being located near to the point where the pottery was ultimately deposited. These piles may even have spilled into the ditches, now that the banks were denuded.

More fine-grained analysis would be needed before we could adequately reconstruct the practices of deposition. This is beyond the scope of this report, though future work with refitting and sherd-size analysis would give further insight into these processes. What is clear is that during the finial part of Bronze Age occupation, pottery was

being broken and deposited on a completely different scale or regularity. Given that the14 slots sample represents c.25% of the total pottery recovered from the South Rings, we can estimate that around 1064 vessels were deposited during the final phase of silting (estimate using the rim count). It is inconceivable that this quantity of refuse was generated through years of accidental breakage, accumulation and discard by a single resident household group. Assuming an average breakage rate of 2.7 vessels per annum, it would have taken 388 years for a household to generate this number of broken vessels; a period longer than the Late Bronze Age itself (see Hill 1995, 129-31 for calculations on the basis of ethno-archaeological and ethnographic evidence). Rather, this material must have been generated by practices involving multiple household groups congregating within the rings.

Communal gathering may have been at periodic events akin to feasts, which would have required numerous vessels for the large scale preparation and consumption of foodstuffs. Some of these vessels have been produced exclusively for these events, perhaps being deliberately broken as displays of conspicuous consumption. The resulting debris may even have been gathered into rubbish heaps, which themselves would have provided further visible evidence of excess. It is within the social context of communal gatherings and competitive consumption that we should try to understand the changes to the South Ring's ceramic repertoire. The pottery from this horizon displayed the widest range of forms and vessel sizes, and greatest the diversity of decorative schemes. The repertoire saw the addition or angular tripartite jars, and the new types of decoration including a variety of plain and finger-tip/nail impression cordons. More broadly, there was emphasis of table wares, as reflected by the proliferation of Class IV bowls in the assemblage, and the high incidence of burnishing. Together, there can be seen an increasing investment in the appearance of vessels. Surely it cannot be a coincidence that ceramic 'elaboration' peaked at the same time huge quantities of pottery were deposited, and that these only occurred after the earthworks had fallen into disrepair?

It is argued that these processes went hand in hand. The diversification and elaboration of vessel forms, sizes and decorative schemes, were central to these events through which new forms of social authority were created and maintained. Pottery was drawn into emerging arenas of social competition, and became a vehicle for establishing and reflecting a diverse set of social relationship, most importantly, the group and communal identities created in collective consumption. These acts occurred at a time when the earthwork ceased to be an imposing physical barrier. If the South Rings had started life as an exclusive, 'high status' fortified enclosure with a single household residence, its role within the social landscape had radically altered by the time the capping fills were deposited. That the defences were allowed to fall into disrepair suggests that the control of access was no longer essential to the formation and maintenance of political authority. Instead, status may have been established though new social strategies which were increasingly centred on the production and consumption of foodstuffs, ceramics and other artefact types during large scale social gatherings. The new 'openness' of the site may have been important as a symbol of inclusion and access, and may have been reinforced by the deliberate levelling the bank.

Catalogue of Illustrated vessels

1. South Ring outer ditch, slot 8, lower fill, spit 8. Base with grooved/burnished lines. Base form J, Fabric 9.
2. South Rings inner ditch, un-sampled slot, upper fill, spit 3. Jar decorated with shallow tooled linear lines on neck. Form E, Class I, Fabric 5.
3. South Ring outer ditch, slot 8, lower fill, spit 9. Bowl, Form H, Class III. Fabric 9.
4. South Ring inner ditch, slot 7, upper fill, spit 1. Bowl, Form H, Class III. Fabric 2.
5. South Ring inner ditch, slot 7, upper fill, spit 1. Burnished shoulder sherd decorated with finger-tip impressions. Fabric 2.
6. South Ring inner ditch, slot 7, upper fill, spit 3. Cup decorated with shallow tooled linear lines. Form H, Class V, Fabric 5.
7. South Rings inner ditch, slot 7, upper fill, spit 1. Polished bowl, Form H, Class IV, Fabric 5.
10. South Rings inner ditch, slot 1, lower fill, spit 9. Jar, Form A, Class I, Fabric 5.
11. South Rings inner ditch, slot 1, upper fill, spit 1. Rim sherd with neck cordon decorated with finger-nail impressions. Fabric 17.
12. South Rings inner ditch, slot 1, middle fill, spit 4. Bowl, Form I, Class III, Fabric 10.
13. South Rings inner ditch, slot 1, middle fill, spit 4. Burnished bowl decorated grooved/burnished lines along the neck. Form H, Class IV, Fabric 5.
14. South Rings inner ditch, slot 1, middle fill, spit 5. Burnished bowl, Form J, Class IV, Fabric 3.
15. South Rings inner ditch, slot 2, upper fill, spit 1-3. Burnished body sherd decorated with shallow tooled linear lines. Fabric 5.
17. South Rings outer ditch, slot 11, upper fill, spit 1. Jar decorated with stabbed impressions on the shoulder. Form D, Class I, Fabric 7.
18. South Rings inner ditch, slot 4, upper fill, spit 1. Base with finger-tip decoration. Base form D, Fabric 3.
19. South Rings inner ditch, slot 4, upper fill, spit 1. Rim sherd pinched along the rim-top. Fabric 9.
20. South Rings inner ditch, slot 4, upper fill, spit 1. Burnished jar, Form A, Class II. Base form C. Fabric 5.
21. South Rings inner ditch, slot 4, upper fill, spit 1. Shoulder sherd with finger-tipped cordon. Fabric 3.
22. South Rings inner ditch, slot 4, upper fill, spit 1. Polished sherd with horizontal combing on the shoulder. Fabric 4.
23. South Rings inner ditch, slot 4, upper fill, spit 1. Base form d, Fabric 9.
24. South Rings inner ditch, slot 4, upper fill, spit 1 Burnished base sherd? Fabric 2.
25. South Rings inner ditch, slot 4, upper fill, spit 1. Burnished jar, Form N, Class II, Fabric 6.
26. South Rings inner ditch, slot 4, upper fill, spit 1. Base sherd, Fabric 6 (no form recorded).
27. South Rings inner ditch, slot 4, upper fill, spit 1. Jar, Fabric 8.
28. South Rings inner ditch, slot 4, upper fill, spit 1. Rim sherd decorated with finger-tip impressions along the rim-top. Fabric 5.
29. South Rings inner ditch, slot 4, upper fill, spit 1. Shoulder sherd with finger-tipped cordon. Fabric 6.
30. South Rings inner ditch, slot 4, upper fill, spit 1. Polished rim sherd with finger-tip impressions along the outer rim-edge. Fabric 14
31. South Rings inner ditch, slot 4, upper fill, spit 1. Jar decorated with finger-tip impressions on the rim-top. Form D, Class I, Fabric 6.
32. South Rings inner ditch, slot 4, upper fill, spit 3. Jar decorated with finger-tip impressions on the rim-top. Form C, Class I, Fabric 9.
33. South Rings inner ditch, slot 4, upper fill, spit 2. Rim sherd with finger-tipped rim-top and shallow tooled linear lines on neck. Fabric 6.
34. South Rings inner ditch, slot 4, upper fill, spit 2. Polished sherd with horizontal combing on the shoulder. Fabric 5.
35. South Rings inner ditch, slot 6, upper fill, spit 2. Shoulder sherd with pinched decoration. Fabric 5.
36. South Rings inner ditch, slot 6, upper fill, spit 3. Polished body sherd with shallow tooled linear lines. Fabric 4.
37. South Rings inner ditch, slot 2, upper fill, spit 1. Jar with finger-tipped rim-top and cabled neck-cordon. Form F, Class I, Fabric 11.
38. South Rings inner ditch, slot 2, upper fill, spit 1. Jar with stabbed shoulder (neck cordon?). Form F, Class I, Fabric 8.

39. South Rings internal feature, Roundhouse 25. Burnished neck sherd with shallow tooled linear lines. Fabric 2.
40. South Rings internal feature, Roundhouse 25. Polished body sherd with combed lines. Fabric 18.
41. South Rings internal feature, Posthole [3898]. Bowl, Form H, Class III. Fabric 4.
42. South Rings internal feature, Pit [481]. Rim sherd with finger-tipping on interior rim-edge. Fabric 4.
44. South Rings internal feature, Posthole [429]. Burnished shoulder sherd with finger-nail impressions. Fabric 5.
45. South Rings internal feature, Posthole [429]. Polished bowl, Form I, Class IV, Fabric 2.
46. South Rings inner ditch, slot 3, upper fill, spit 3. Handle, Fabric 5.
47. South Rings inner ditch, slot 3, upper fill, spit 2. Rim shred with finger-tipped neck cordon. Fabric 8.
48. South Rings outer ring, slot 12, upper fill, spit 3. Burnished body sherd with combed decoration. Fabric 21.
49. South Rings outer ring, slot 9, upper fill, spit 1. Rim sherd decorated with finger-tip impressions along the interior rim-edge. Fabric 5
50. South Rings outer ring, slot 9, upper fill, spit 2. Shoulder sherd with finger-tip decoration. Fabric 5.
52. South Rings outer ring, slot 14, middle fill, spit 4. Burnished bowl, Form K, Class IV, Fabric 3.
53. South Rings inner ring, slot 4, upper fill, spit 1. Burnished jar, Form N, Class II, Fabric 5.
54. South Rings inner ring, slot 4, upper fill, spit 1. Burnished shoulder sherd with finger-nail impressed cordon. Fabric 10.
55. South Rings, outer ditch, slot 14, lower fill, spit 8. Base form J, Fabric 6.
56. South Rings, inner ditch, slot 7, middle fill, spit 5. Burnished base. Base form C, Fabric 2.
58. South Rings, inner ditch, slot 5, middle fill, spit 4. Polished bowl with horizontal combining. Form I, Class IV, Fabric 6.
59. South Rings, inner ditch, slot 4, middle fill, spit 4. Polished cup, Form K, Class V, Fabric 4.
62. South Rings internal feature, Pit [391]. Shoulder sherd with finger-tipped cordon. Fabric 18.
63. South Rings internal feature, Pit [391]. Polished bowl with shallow tooled linear lines on the neck and shoulder. Form H, Class IV, Fabric 5.
67. South Rings internal feature, Pit [3726]. Polished bowl, Form I, Class IV, Fabric 3.
68. South Rings internal feature, Pit [3726]. Polished bowl, Form M, Class IV, Fabric 3.
70. South Rings internal feature, Pit [3726]. Polished bowl with horizontal homed lines. Form M, Class IV, Fabric 5.
71. South Rings internal feature, Posthole [431]. Jar, Form Q, Class I, Fabric 8.
72. South Rings internal feature, Pit [3726]. Polished bowl, Form M, Class IV, Fabric 3.
73. South Rings internal feature, Pit [3726]. Polished bowl, Form M, Class IV, Fabric 3.
74. South Rings internal feature, Pit [391]. Rim sherd with finger-tipping on the rim-top and neck. Fabric 9.
75. South Rings internal feature, Pit [391]. Rim sherd, Fabric 6.
76. South Rings internal feature, Posthole [431]. Handle, Fabric 11.
77. South Rings internal feature, Pit [391]. Sherd with finger-tipped cordon. Fabric 9.
78. South Rings internal feature, Pit [395]. Bowl, Form I, Class III, Fabric 6.
79. South Rings internal feature, Posthole [3755]. Rim, Fabric 6.
80. South Rings internal feature, Posthole [3755]. Jar, Form N, Class I, Fabric 8.
81. South Rings internal feature, Posthole [3755]. Burnished rim sherd, Fabric 5.
82. South Rings internal feature, Posthole [3755]. Burnished bowl, Form K, Class IV. Base form G. Fabric 5.
83. South Rings internal feature, Gully [433]. Burnished rim sherd, Fabric 8.
84. South Rings internal feature, Pit [461]. Burnished bowl with combing on the exterior rim-edge and shoulder. Form H, Class IV, Fabric 6.
85. South Rings internal feature, Posthole [475]. Rim sherd with finger-nail impression on the rim-top. Fabric 6.
86. South Rings internal feature, Posthole [435]. Polished bowl, Form M, Class IV, Fabric 5.
87. South Rings internal feature, Posthole [437]. Polished rim, Fabric 5.
88. South Rings internal feature, Posthole [437]. Burnished jar, Form C, Class II, Fabric 5.
89. South Rings internal feature, Posthole [495]. Jar, Form E, Class I, Fabric 12.
90. South Rings internal feature, Posthole [13371]. Neck sherd with finger-tip impressions. Fabric 19.
94. South Rings internal feature, Posthole [3807]. Jar with finger-tipped cordon. Form D, Class I, Fabric 12.

95. South Rings internal feature, Posthole [3837]. Rim sherd with finger-nail impressions on the exterior rim-edge.
96. South Rings, inner ditch, slot 2, upper fill, spit 1. Polished bowl, Form H, Class IV, Fabric 8.
97. South Rings internal feature, Posthole [3755]. Burnished bowl, Form H, Class IV, Fabric 9.
98. South Rings internal feature, Pit [387]. Burnished base. Base form J, Fabric 17.
99. South Rings internal feature, Pit [387].Rim sherd with finger-nail impressions on the exterior rim-edge. Fabric 11.
100. South Rings internal feature, Posthole [3796]. Rim sherd, Fabric 5.
101. South Rings internal feature, Gully [374]. Rim sherd with lid-seat. Fabric 12.
102. South Rings internal feature, Pit [399]. Burnished bowl, Form I, Class IV, Fabric 2.
103. South Rings internal feature, Posthole [13957]. Bowl, Form H, Class III, Fabric 9.
104. South Rings internal feature, Posthole [3444]. Body sherd with shallow tooled linear lines (in-filled chevron pattern?). Fabric 8.
105. South Rings internal feature, Posthole [3444]. Jar, Form A, Class I, Fabric 14.
106. South Rings internal feature, Posthole [2152]. Base with finger-tip impressions. Base form J, Fabric 8.
108. South Rings internal feature, Posthole [415]. Polished bowl, Form H, Class IV, Fabric 2.
109. South Rings internal feature, 'Spread' [13876]. Polished bowl, Form H, Class IV, Fabric 18.
111. South Rings inner ditch, slot 4, upper fill, spit 1. Sherd with finger-tipped cordon. Fabric 25.
113. Pit [25564]. Bowl with finger-tipped and finger-nail impressed rim-top. Form L, Class III, Fabric 5.
121. South Rings inner ditch, slot 4, upper fill, spit 2. Burnished bowl, Form G, Class IV, Fabric 5.
122. Posthole [12870]. Jar with finger-tipping on the exterior rim-edge. Form D, Class I, Fabric 7.
123. Posthole [26006]. Body sherd with finger-tip impressions. Fabric 5.
124. Posthole [26000]. Shoulder sherd with finger-tipping. Fabric 4.
125. Posthole [25756]. Burnished shoulder sherd with shallow tooled linear lines. Fabric 2.
126. South Rings inner ditch, slot 3, upper fill, spit 2. Rim sherd, Fabric 3.
134. South Rings internal feature, Pit [405]. Polished sher with combed horizontal lines and shallow tooled linear lines. Fabric 2.

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