

Storage jar ovens

By Ed Biddulph

Storage jars are ubiquitous at Heybridge, as elsewhere. These large, heavy vessels were manufactured locally in both grog- and sand-tempered fabrics, although examples made in north Kent and Surrey were occasionally recovered (ref. [Fabrics](#)). Not easily moved even when empty, storage jars must have remained immobile when full. Within domestic settings the vessels served as containers, storing dry goods and liquids. The jars might also have been found within industrial environments, storing raw materials or items of trade and manufacture. No storage jar was found *in situ* within these settings, although a grey ware jar may have been set upright within pit 16108 (ref. [strat. rep](#)). Storage jars were additionally used as seats of fire for food preparation. Over thirty so-called ‘storage jar ovens’ have been excavated at Elms Farm. The majority were located in the central zone, particularly Areas H and I. A few were found in northern Areas D and F, and Area K in the southern settlement zone.

The dating of storage jar ovens is problematic. Storage jar fabric – the ware in which these vessels were usually produced – is not intrinsically datable, and, by itself, a body sherd in this fabric could conceivably be placed anywhere within the Roman period. Dating very largely depends on stratigraphy and presence of associated artefacts. The latter alone cannot indicate the period of use of storage jar ovens. In most cases, material found within and perhaps immediately around the oven must have been deposited when the oven fell out of use. However, the earliest dated material can still provide useful chronological pointers. The majority of ovens lie within a late 1st to early 2nd century AD date range, though all were not necessarily in use at the same time. There is none for which a mid 1st century AD date is certain, although oven 6939 utilized a grog-tempered jar (*Cam* 271) and would appear to be among the earliest of these features, with the fabric being manufactured no later than *c.*AD70 (ref. [Supply](#)). It is conceivable, however, that the use of the jar as an oven may have been significantly later than its date of manufacture. Two ovens, 6958 and 5948, contained bead-rimmed dishes dated no earlier than *c.* AD125. The former oven also yielded Colchester colour-coated ware, a fabric that did not reach Heybridge in any great quantity until the mid 2nd century AD. The actual use of these ovens need not be dated so late and could still be contemporary with the others. However, the predominance of Phase 6 pottery gives them a distinctly later slant.

Most, and potentially all, ovens fall within Ceramic Phase 5 (AD80-125), and so use of the feature type is restricted chronologically. Storage jar ovens have not only been located at Heybridge; those found elsewhere tend to show a limited distribution and short-lived practice. One example, dating to the 2nd century, has been recently found at Witham (A. Robertson, pers. comm.). Three such features were excavated at Chelmsford (Wickenden 1992, 32), and dated there to the mid 2nd century. However, the associated pottery recovered from Hearth 733 at Chelmsford is undiagnostic greyware, which could in fact date to before this time. The storage jar itself is a Going G44 type – the most commonly-represented form of the Heybridge storage jar ovens. While there may be stratigraphical grounds for assigning to it a mid 2nd century date, Hearth 733 reflects the earlier-dated practice at Heybridge.

All but two ovens incorporated sand-tempered storage jars. Apart from the grog-tempered jar noted above, the exception was a shell-tempered jar (*Cam* 258, Monaghan class 3D4) manufactured in north Kent. That grog-tempered vessels are virtually absent is due to production of the fabric terminating before the main period of oven use. The lack of shell-tempered jars is less easily explained, but a reason may lie in the peculiarities of supply from the north Kent industry. Jars of this type appeared relatively infrequently at Elms Farm. That early shell-tempered ware is utilized even once must in itself be unusual, and may reflect the convenient presence of the shell-tempered vessel and a temporary unavailability of otherwise ubiquitous sand-tempered vessels. The commonest jar form utilized is the thick bead-rimmed G44 type – the earliest typologically of the range of storage jars made in the sand-tempered fabric found at Elms Farm. The hook-rimmed G45 type was also used, though less frequently. This form did not become current until the 2nd century AD (Going 1987, 27).

In order to be utilized as ovens, storage jars were laid on their sides within shallow scoops that ensured stability. Although sections from ceramic vessels are known to have formed hearth or furnace bases, *e.g.* an amphora at Causeway Lane, Leicester (Clark 1994, 11), most jars at Heybridge were likely to have been placed whole in the ground. This can be attested in some examples. More than half of the early shell-tempered jar in oven 10501 was present and both the rim and base of storage jar 6398 in oven 6399 were complete. Once the jar was in place, it was probably fixed *in situ* by soil, which might have also aided insulation.

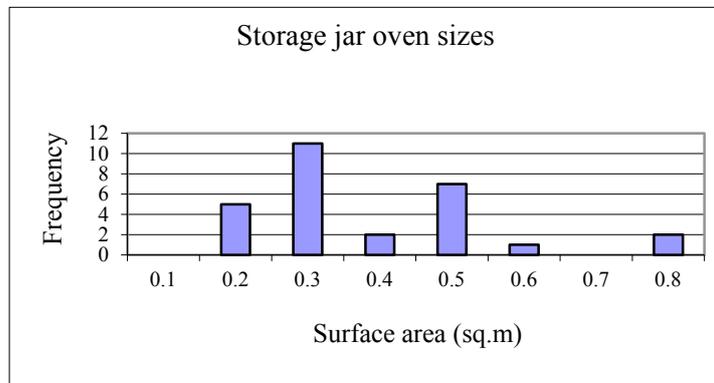


Fig.00. Surface area of storage jar ovens

Storage jars varied in height, ranging from 0.38 to 0.97m, and averaging 0.62m. Since all vessels were incomplete, volume cannot be accurately measured. However, where the lengths and breadths of jar sections were recorded (measurements being the widest distances) some idea of surface area can be gained by simply multiplying these measurements (Fig.00).

Figure 00 shows that the jars tend to fall into two size ranges clustering on 0.3sq.m and 0.5sq.m. The relatively few occurrences at 0.4sq.m may well suggest deliberate selection of specifically-sized jars. It seems unlikely that relatively few jars were made that would fall into the 0.4sq.m bracket while jars immediately smaller or larger were common, and normally jars of this size should be expected. A more even spread

of values can reasonably be expected if the distribution reflected usual sizes of manufacture. But what purpose this size differentiation may have had remains unknown. An obvious suggestion is that different sizes suited certain foodstuffs. This cannot be substantiated, of course, without the evidence of residues within the hearths.

	<i>Area D and F</i>	<i>Area H</i>	<i>Area I</i>	<i>Area K</i>
Mean surface area (sq.m)	0.28	0.38	0.28	0.37

Fig.00. Mean surface area, calculated by multiplying length and breadth of *in situ* storage jars

With around thirty ovens altogether, the dataset divided into respective Areas is perhaps too small to be meaningful. Even amalgamated, Areas D and F in the northern settlement zone comprise just four entries. Area K stands alone in the southern zone and contains three ovens, although it should be noted that these ovens were positioned alongside the road adjacent to the central zone. Areas H and I, in the central zone, contain fourteen and seven respectively.

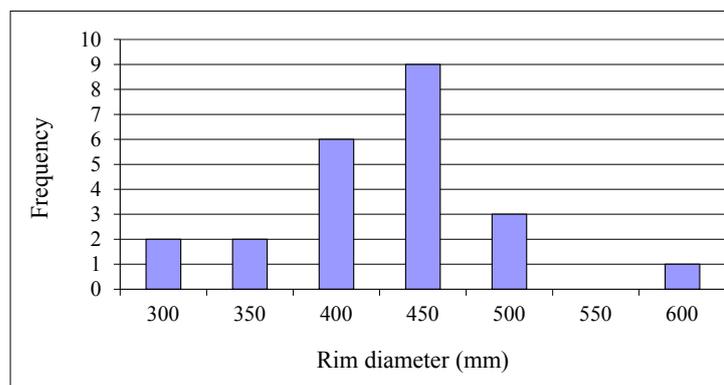


Fig.00. Storage jar oven rim diameters

Rim diameters of storage jars chosen for utilisation as ovens appear to have been reasonably standardized. The diameter of over half the number of measured storage jar rims lies between 350 and 450mm. There was otherwise a wide spread of values, with a difference of 260mm between the narrowest and widest jars. When we compare the mean diameter of storage jars used as ovens to the overall mean diameter of all storage jars in the assemblage, it would seem that larger than average storage jars were deliberately chosen for oven use. The mean for storage jar ovens is 416mm and the overall site average is 323mm. The reason for this is likely to be entirely practical; larger jar mouths were the ideal size through which to fit cooking equipment. However, it should be noted that the storage jar mean is based on just twenty-three examples, while the site average is calculated from a population of 155 examples.

Storage jar ovens were used to heat food. The inner surfaces of a number of vessels were burnt black, indicating the use of fires, or at least, hot embers. Pebbles were certainly used as pot-boilers (naturally-occurring stones used as a secondary heat-source), but were perhaps less likely to burn the sides of the vessel. The floors of ovens 4534 and 6441 were burnt in the centre from rim to base, showing that the heat

source was placed along the entire length of the vessels. More unusual is oven 6308, whose sides are burnt internally. A storage jar in oven 6958 is burnt across the width of the top half, with a smaller patch in the bottom corner. Direct heat, as supplied by charcoal or fire, can be assumed. A griddle may also have been used. It has been suggested that bread dough could have been stuck onto the underside of the roof of the storage jar. Once baked, the bread could have been gently prised from the roof, perhaps requiring the use of a paddle-like implement or peel. Oven 16345 comprised a jar that was burnt in the centre. It also yielded pot-boilers, as did two other ovens, 9506 and 13521. Notably, 9506 showed no signs of burning.

Internal discolouration of the storage jar is an immediate effect of the heating process. Over a longer period, or perhaps even after a single firing, the storage jar might begin to shatter as a result of the heating/cooling process. Storage jar halves 6192 and 6310 from ovens 6189 and 6323 respectively are fissured. Heat-induced shattering is less apparent in other jars, but pottery sherds are perhaps ample evidence of heat damage. Heat-shattering might well have been the root cause of most jars breaking up into sherds. Once use of the jar was no longer viable, the weakened roof of the oven was probably broken up and removed. In some cases, the floor of the jar appears to have remained *in situ* while the roof and other debris were cleared away. Oven 6462 provides a good example. It contained three individual vessels representing three successive phases of use, damage and replacement.

With little trace of soil and debris between the jar halves of oven 6462, care seems to have been taken upon destruction of one vessel to create a 'clean' surface on which to place a successive jar. It seems somewhat anomalous, then, that lower halves of previous vessels stayed in the ground. These seemingly redundant halves may have acted as ceramic 'plates' to aid insulation and ward off the effects of heating and cooling. But no such 'plates' were found underneath single-phase ovens, such as 5846, 6399 and 16345. If this were indeed their function, 'plates' were required only to insulate successive phases. Replacement jars would have raised the height of the oven, requiring further soil for packing. It is still possible that, in other instances, damaged vessels were removed in their entirety. Ovens with one apparent phase of use, evidenced by the remains of a single storage jar, may have had, in fact, multiple phases – the jar present representing the final phase of use. Thus, storage jar ovens may have been more numerous. Large amounts of storage jar fabric present in some rubbish deposits might be the cleared remnants from ovens. It is impossible to tell whether their use as ovens represented their primary or secondary function, though, given the damage that the jars would have sustained from repeated heating; it is unlikely that former ovens were put to any other use subsequently. Lastly, the concentration of these ovens in the central settlement zone perhaps indicates that they were not fulfilling a normal domestic function. Proximity to the temple might suggest**What though?**

Parallels:

Penn, W.S. 1964 'Springhead: the temple ditch site', *Archaeologia Cantiana* **LXXXIX**, 170-188.

LIA/Roman Pottery; Storage Jar Ovens
Archive report

p.173-5 = ovens with halved storage jar bases (i.e. Ovens 1, 4 and 6). Also have 'flues'. Bread making in association with the temple is surmised.