

Kilns and sub-kilns

Introduction

In 1973, details of six of the kilns found at Mucking were published (Jones and Rodwell 1973) in an – inevitably – rather summary fashion. Excavation was still continuing, but it seemed important to draw to wider attention the potential of the Romano-British evidence of the site. By the end of the excavation, the total number of certain and probable kilns, not including rebuilds, had reached 23. Summary details of some of these were published by Vivian Swan in her (1984) *corpus* of production sites in the Roman Province as a whole. While this number comprises all the likely structures and kilns, it is probably an under-estimate of the total number of kilns which originally existed on the site. At least some are likely to have been removed by over-scraping. It is probable that some of the areas of fired clay including firebar fragments, if they are not dumps of material, denote the positions of other kilns. These possible concentrations of material have been itemised by Barford and will be included in his study of the fired clay from the site.

There were six large updraught kilns (Nos 1-6) and seventeen smaller kilns (7-23). The latter seem to have produced mainly shell-tempered jars (e.g. Jones 1972), while the larger kilns (except Kiln 1) produced a variety of products in more highly fired sand-tempered fabrics. The smaller kilns seem to be 1st century AD in date (but whether pre or post-Conquest is not yet clear); the larger kilns date from the 1st to 4th centuries AD.

Large kilns

These were all in the southern part of the site. They were single-flued oval fired clay structures with central pedestals; most were sunk into the ground and thus survived relatively well. All of the collapsed fired clay debris within these features was collected during excavation, and samples taken from the kiln walls. Most of this material was hard-fired, reduced fabric B tempered with vegetable matter, including in some cases cereal processing waste. The actual structure of these kilns is further described below, but it is suffice to note here that some of them (Kilns 2b, 3 and 4) had wattles incorporated into the structure, although it is not clear how far the kiln structure projected above the ground. They were probably not permanently domed, as some fragments of collapsed wall occasionally had finished rim-like edges (Jones and Rodwell 1973, 17). Evidence of patching and repair was noted in Kilns 4, 5 and 6, while Kiln 2b replaced (and was built in the stokehole of) the demolished Kiln 2a.

Rodwell (1982, 32-3, 69) has suggested that these kilns may be divided into two groups: those with firebars, and those with no evidence of a suspended kiln floor. No firebars were found in situ, and nor did any complete examples survive. Many fragments were found in Kilns 1 and 4, but also a few possible fragments in Kilns 2 and 5. Kilns 2, 3, 4, and 6 all had internal ledges around parts of the edges (although only in Kiln 6 did it continue right the way around); in most cases, these ledges were higher than the pedestal. Rodwell (1982, 32-3) has suggested that these ledges supported part of the weight of the kiln load, or alternatively (*ibid.*, 69) were constructional features, but that they were

unlikely to have supported firebars. In passing, it must be noted that the absence of firebar fragments in debris thrown back into a disused kiln does not necessarily imply that firebars had not been used in that kiln (pace Rodwell 1982).

The fabric of the kiln structures (see details below), while to some extent variable, was nevertheless fairly consistent in content, if not degree and conditions of firing. It is clear that the potters tended to temper their pots with sand, but the clay used for the kilns with vegetable matter. A point worthy of particular note is the use of cereal processing waste in the kiln structure, which also appears to some extent in the fabric of the smaller kilns, and also in the kiln furniture discussed below.

The smaller kilns

Seventeen of these structures, previously termed 'Belgo-Roman' or 'Proto-kilns' (Jones and Rodwell 1973, 13, 18) have been recognised at Mucking; all were smaller and shallower than the six structures discussed above. These kilns seem to divide into three main groups: those in the southern part of the Roman field system; those along the eastern edge of the site; and a third group in the 'Banjo' area. The first group tended to be elongated and flue-like; the eastern group were generally smaller and deeper oval structures, while a mixture of the two types occurred in the 'Banjo' area. Firebar fragments appear to be common in the fills of two of the groups, but less frequent in those on the eastern edge of the site.

The kiln furniture can be seen to differ between the three groups. Kilns 7-10 contained mainly pieces of type A1 firebars, while the oval kilns contain a greater variety of types of firebar, clay briquettes and plates (this including Kilns 14 and 16 in the eastern group, and most of those in the Banjo area). None of this kiln furniture was found in situ, but only as fragments discarded into disused kilns.

These types of kiln furniture are discussed below. It is of note that no pedestals were found in the smaller kilns. Either the firebars had spanned the walls from side to side (although there were few complete examples to prove if this could be so), or a temporary pedestal such as an inverted pot (*cf.* Swan 1984 fig. III.1) could have been used.

The kilns as structures

Kiln 1 (Site location: 290N x 118E. ATLAS Sq X00]
(Published references: Jones and Rodwell 1973, fig 2, I; Rodwell 1982, 68, fig 5.4; table 1, p29; Swan 1984, MF 298 R)

The kiln had been constructed in the interior of the large late pre Roman Iron Age enclosure (known as RBI; cat 000), close to its entrance. The kiln was not well preserved and presents a number of problems with its interpretation, and the surrounding area was not fully investigated. The site records do not make it clear whether the site was built into, or alongside, a gravel spread which has been interpreted in some site notes as the upper fill of the enclosure ditch, but which is postulated here as the remains of an internal

bank, although a possible earlier stoke pit appears to cut into a gulley said to be a recut of RBI.

The chamber was built into the south-west end of the construction pit. The wall of the chamber was fired hard grey to a depth of 20mm, and then merged, through a hard, reduced clay, to an oxidised zone at least 60mm in thickness. Beyond this zone it was noted that the clay was yellow and plastic. One sherd of grey, reduced pottery was recovered from the wall of the kiln. This does not necessarily indicate a rebuild of the chamber, but could have been incorporated during the repair of the wall. It is possible that the kiln was totally relined on at least one occasion. The flue was comparatively short, but the preservation conditions do not rule out the possibility that it may have been longer. There are possible traces of an earlier stoke pit.

Kiln furniture:

13 firebar fragments were recorded. Their position in the kiln did not suggest any clear pattern during excavation. The most likely arrangement would seem to be spanning the firing chamber from the wall to the central pedestal. However, this may be too simplistic and interpretation. The large wedge-shaped firebars, D-shaped in section, would seem to be too heavy to span the chamber, and may have been used on the floor of the chamber in association with the elongated firebars. The central pedestal had collapsed, but it is unclear whether this occurred at the time of abandonment or subsequently.

The pottery:

The pottery which was kept is unqualifiable and unquantifiable. Indeed, because of the stratigraphic problems outlined above in relation to the RB I ditch it is possible that some of the material here is not kiln waste, but from the ditch fill.

Fragmentary remains of oak charcoal were recovered.

Dimensions:	Max length	Max width	Max depth	Max diameter
Construction pit	4.57m (15ft)	-	-	-
Stoke pit	2.44m (8'0")	-	-	-
Flue	0.38m (1'3")	-	-	-
Chamber	-	-	-	1.37m (4'6")
Central pedestal	Max width: 0.31m (1'7"); Max height: 0.22m (9")			

Kiln 2

Kiln II was partly destroyed by mechanical digger, but was later found to be two separate kilns located near the corner of a field system, whose ditches contain much large and unabraded waste from the kilns.

Kiln 2a [Site location: 324N x 610E. ATLAS Sq X00]

(Published references: Jones and Rodwell 1973, fig 00.00, Plate I A right; Rodwell 1982, 68, fig 5.14 and table 1, p29; Swan 1984, MF 299 Left under Kiln 2B)

The earlier kiln 2a was constructed in a pit, and had been partly destroyed by the construction of Kiln 2b (see section). The flue faced south east, the chamber was pear-shaped, and *c.* 1.2m across. An 'island' of gravel in the centre of the furnace revealed the position of a single pedestal *c.* 270mm square; raking out of the furnace around this pedestal had caused a hollow to develop. The pedestal itself was not found and the kiln had been thoroughly demolished before the construction of a second kiln (2b) at the other end of the pit.

Fuel: All identified charcoal was of elm.

Kiln 2B [Site location: 320N x 617E. ATLAS Sq X00]

(Published references: JRS 1969 (Vol LIX), P1 XIII (L), Jones and Rodwell 1973, fig 2.II, plate IA left; 000-000; Rodwell 1982, 68, fig 5.15, and table 1, p29; Swan 1984, MF 299 Left)

Kiln 2b was well preserved, it was constructed in the stoke pit of kiln 2a, the earlier kiln being demolished and turned into the stoke pit for the present kiln. This faced north and had a furnace diameter of 1.2m. The structure stood to a height of 0.7m. The short, narrow flue, mainly of raw clay, survived intact and had a removable roof in the form of a complete *tegula*. A pair of rectangular-sectioned pedestals, formed in situ from raw clay, stood in the centre of the furnace. They were 28cms high and relined a fragment of a bridging piece of fired clay. There was no ledge or scar around the kiln wall corresponding with the top of the pedestals, nor was there anything found to suggest the presence of a raised floor, and made of clay reinforced with wattles.

Fuel: All identified charcoal was of elm.

Kiln 3 [Site location: 306N x 639E. ATLAS Sq X00]

(Published references: Jones and Rodwell 1973, fig 2.III; 000-000; Rodwell 1982, 68, fig 5.35, and table 1, p29; Swan 1984, MF 299 Centre)

Kiln three was constructed in a ditch to the south of the kiln 2 complex, it was aligned east-west [check]. The chamber was pear-shaped, with a tapering flue. There was a central pedestal comprising two pedestals.

Fuel: Identified charcoal comprised oak, elm and broom/gorse.

Kiln 4 [Site location: 745N x 370E. ATLAS Sq X00]

(Published references: Jones and Rodwell 1973, fig 2.IV, Plate I.B; 000-000; Rodwell 1982, 69, fig 5.34 and table 1, p29; Swan 1984, F 299 Right)

Kiln 4 was aligned east-west and was built near the corner of ditch F27 and ditch 00000. To the south and east of the kiln were two further ditches (F8 and F7) which together

formed a small enclosure *c.* 00 x 00m for the kiln complex. The stoke pit of the kiln had been disturbed later by the construction of GH80, and a pit cut into the packing to the NNE of the chamber appears to be contemporary with the Saxon occupation.

The kiln was excavated between June and November 1969. Both the stoke pit and the chamber were dug in quadrants using 6" levels. At a depth of 2'6" two quarters of the chamber excavation were combined and the lower part of the chamber was dug in two halves. At the end of the excavation of this structure half of the kiln was cut away for photography – the results can be seen in Jones and Rodwell 1973, Plate I.B.

The shelter. On the south side of the kiln construction pit were five post holes (00 000, 00000 00000), with three more on the north side (00000, 00000, 00000), and two on the west side (00000, 00000). Their arrangement strongly suggests that the kiln was itself set under the over of a roofed shelter of some kind – the only one of the kilns found at Mucking to be so protected.

The structure. Kiln 4 underwent at least two phases of reconstruction. It would seem likely that the chamber on at least the NNE side was completely reconstructed.

A large storage jar sherd, a kiln product, was found in the packing pit behind the chamber wall. This sherd cross joins with other sherds discovered in the kiln and could only have been introduced into the packing pit at a time of rebuild. There is no evidence for the dimension of Phase I, but from the position of the pedestals it would seem to have been of the same size as the Phase II kiln.

The surviving kiln chamber was roughly oval in shape and had been built against the loose fill of kiln waste that had fallen into the construction pit. It would seem unlikely that the kiln was originally built as a free-standing structure. The NNE back of the chamber wall was partly fired clay, oxidised and still plastic to a depth of 21". The lower part at the back was fired hard to a depth of approximately 4 inches. Beyond this the clay was still plastic to a thickness of over 7".

As with kiln 3, there was an internal ledge around the chamber *c.* 1'3" above the chamber floor. Above the ledge the chamber walls sloped in. Beneath the ledge the chamber walls were concave. There was a single pedestal placed centrally in the chamber. This survived to a height of 6". The walls of this item were hard fired but the top was plastic, implying it had been broken off, and probably was once constructed level with the internal ledge, *c.* 1'3" in height. The floor of the chamber beneath the pedestal was hard fired. Traces of the phase I pedestal were observable here.

Unlike kiln 3, the floor of the chamber slopes down to the west – i.e., from the rear of the chamber towards the flue mouth.

The flue was not recorded as being excavated. It would appear to have been preserved to its full height, and the flue arch appears to have been preserved intact. Unlike kiln 3, the flue was very short with no evidence to suggest it was ever any larger. In the front of the

chamber and the flue a facade of raw clay was noted, and the clay seemed to extend on either side of the stoke pit, which was rectangular in plan, and cut into natural gravel. On the south side of the pit three possible steps were recorded, the uppermost being truncated by the construction of the later Grubenhau. Neither the stoke pit depth nor the rise of the steps is recorded. The fact that post hole 00000 cuts one of the steps suggests it may be fortuitous.

Dimensions:	Max length	Max width	Max depth
Construction pit	18'6"	11'3"	-
Stokepit	10'	11'3"	-
Flue	1'6"-2'	>1'	1'6"
Chamber	4'	3'	3'6"
Pedestal	1'9"	2'	6"

Dating evidence: external: Vessel 1604 is probably a 4th century BB1 jar, resembling Gillam 1976.12-13.

Fuel: Identified charcoal (in large quantities) was of elm, poplar, field maple, oak, hazel and broom/gorse.

Kiln 5 [Site location: 000.00N x 000E. ATLAS Sq X00]

(Published references: Jones and Rodwell 1973, fig 2.V; 000-000; Rodwell 1982, 69, fig 5.33, and table 1, p29; Swan 1984, F 300 left)

This was first found by mechanical scraper in Easter 1969. It was noted that the eastern area was badly damaged by the machine, which dug deep into the kiln fill. The machine damage to the area makes interpretation difficult, particularly the relationship of the kiln to the surrounding ditches. The stoke pit has also been damaged by tree roots.

A ditch running east-west is shown on the plan butting kiln 5, but it is unclear from the records whether this was an earlier ditch. A notebook sketch plan certainly shows a butt end within the stoke pit, yet (00 plan) describes the ditch as modern. Like kiln 2 and 4, kiln 5 was constructed in the angle of two ditches. The kiln was orientated north-south with the stoke pit at the north end of the construction pit. Unlike the other kilns it was stated that kiln 5 was constructed in brick earth but most likely at the junction of the brick earth and gravel.

Although the kiln was first found in Easter 1969, it was not excavated until September that year, and then only in parts. The excavation was abandoned for the winter and not resumed until March 1970. This exacerbates the problem of interpretation and overall assessment.

At least one phase can be distinguished from the plan of kiln 5, although a photograph of the kiln section shows an area of oxidised clay and reduced clay above and to the north of the flue arch. This may indicate a later kiln built into the earlier chamber and across the

top of the earlier flue arch. A parallel for building kilns on top of earlier structures can be found in the Alice Holt dump.

A phase I pedestal can be identified in the chamber as a hump of reduced fired clay which has subsequently been covered by phase II pedestal re-construction. The single pedestal belonging to phase I was placed centrally in the chamber, leaving a space of approximately one foot around the chamber.

The flue was rectangular in section and narrowed to the north of the stoke pit from the north of the chamber. From photographic records it would appear that the flue retained a height of 2 feet throughout its length; however, it dipped steeply from the base of the pedestal to the stoke pit. This may properly belong to phase II only.

The flue belonging to phase I may have had a less pronounced slope originally and content raking of ash may have lowered the front flow of the flue.

Phase II

This seems to have been a total re-construction within the chamber and flue of phase I, and should perhaps be seen as a total re-lining rather than a reconstruction.

Phase II of kiln 5 consisted of a complete re-construction within the chamber and flue of the phase I kiln. The chamber walls were fired/reduced to a depth of five inches. The walls behind them were of soft plastic clay to a depth of five to six inches.

The floor of the chamber did not appear to have been lined with clay, although a thin skin of clay could easily disintegrate and leave no trace. The area of the chamber floor is recorded as of fired sand, which is at variance with the notebook entry, which records kiln 5 as being cut into brick earth.

The phase II pedestal was constructed over the stump of the phase I pedestal. A clear demarcation line of hard fired grey clay can be seen on a slide. The phase II pedestal was reduced, hard clay on the exterior, but orange-brown oxidised clay on the interior. The pedestal had slumped forward down the sharp dip of the flue. This may indicate a degree of instability under the floor of the flue at this point.

The flue is described as consisting of raw clay with slight firing on the inside of the flue. The phase II flue lining has been placed in front of the phase I lining, which appears as a skin of fired clay behind phase II raw clay. Immediately above the flue was a hard layer of black earth. The centre section of the flue floor was concave, and the thin skin of reduced fired clay which occurs on either side of the flue was absent. This damage to the floor was probably caused by continuous raking over of the flue chimney.

The chamber of the kiln was approximately four foot seven inches at the level of the floor. There was an approx. two inches wide ledge around the interior of the chamber, at a height of nineteen inches. At this point the walls had sloped in to three foot nine inches.

The walls gradually sloped in further and at their maximum height of three foot, the chamber was only three foot two inches wide.

The stoke pit sloped gently in from the side. A post hole was recorded at the north end of the stoke pit. However, it is unclear whether this is contemporary with the kiln or later. After the kiln was abandoned, the chamber was used as a rubbish pit, for it contained many fragments of bone, including the jaw of a horse.

Phase I Structure

Dimensions:	Max length	Max width	Max height/depth
Construction pit	Approx. 22'	12'	-
Stokepit	14'	12'	-
Flue	3'	1"-1'6"	>2'
Chamber	4'8"	3'8"	>3'
Pedestal (single)	1'	2'	3"

Phase II Structure

Dimensions:	Max length	Max width	Max depth
Construction pit	Approx. 22'	12'	3'3"
Stokepit	14'	12'	3'3"
Flue	3'	a) chamber 1'3" b) pit 10"	1'7"
Chamber	4'6"	3'4"	3'
Pedestal	2'	2'	1'1"

Fuel: Identified charcoal was mainly of elm, with some broom/gorse and ash also represented.

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Kiln 6

Kiln 6 was built across ditch B27. The stoke pit was cut into the fill of the ditch, and the chamber was constructed to the west. The kiln was oriented east-west, with the flue facing east.

From the records it is unclear when the kiln was first identified, but it was fully excavated in August 1972. Although the records state that the chamber had to be dug in haste, it is not stated why this was necessary. The records do not give clear measurements.

The kiln chamber was quite well preserved, as was the flue arch. There is no clear evidence to suggest that kiln 6 was reconstructed at any time, although it would seem likely that it was of two phases from the quantity of waste material behind the wall. However, it would appear that Phase I was completely destroyed by Phase II.

Structure. Although the kiln was relatively well preserved, the plans, sections, and notebook entries are not particularly informative, especially about the dimensions of the kiln. The measurements given here are therefore best regarded as an approximation.

The chamber of kiln 6 appears to have been very similar to those of kilns 2-5. The floor of the chamber was comprised of reddened sand; however, since the floor was over scraped, it is possible that a thin skin of fired clay had existed on the pit floor. Two pedestals, placed slightly off centre towards the middle of the chamber, *c.* 3-4" apart. They had been broken off at the top and their original height is not known.

The chamber wall was composed of reduced, hard-fired clay. As with kilns 2b, 4 and 5, there was a 2-3" thick internal ledge to the chamber walls. It is not certain how high this was above the chamber floor, but it was probably in excess of 19". Above this ledge, the kiln chamber sloped inwards to a height of approximately 3'9". In general its profile was less bell-shaped than kilns 2b, 4 or 5.

The kiln flue was quite well preserved, and unlike those of the other kilns. During excavation it was postulated that the chamber walls and flue were of two builds, and that the flue had been constructed in components, first the walls and then the roof. There seems little doubt, however, that both are of one build, but that the roof of the flue, which is one of the weakest components of the kiln, has been damaged, removed and replaced, being clearly rebated into the structure.

A more enigmatic character is the hole in the flue roof which leads into the kiln chamber. The excavator interpreted this as a damper which would draw off heat from the chamber, *i.e.* as a control against overheating. There are, however, no known parallels for this in Roman kilns. The feature could have been used as an inspection hole to examine the state of the load, but it would certainly have had to be plugged between each inspection. That this is so is supported by the fact that the hole is only lightly fired on the outside, only being hard fired on the interior.

If the hole had been left open for any length of time it would certainly have had a deleterious effect on the kiln loads – a sudden inrush of cold air could easily have led to the destruction of at least part of the pottery charge. One other explanation is that the hole was caused by a large object such as a stone or even a sherd which blew out during firing. Its precise purpose, if any, is a mystery, but it is worth noting that pot sherds were recovered from the flue roof.

Fronting the flue was a 'lintel' of raw clay, rebated onto the roof of the flue. This may be the remains of a seal used to close off the end of the flue (and probably the roof of the dome) once the firing temperature had been reached in order to allow the load to cool gradually.

The stoke pit appears to have two phases. Stoke pit 1 appears to have been shorter than its successor, which appears to have been enlarged by cutting back the eastern side of the

stoke pit. It is likely that at this stage, waste material from the kiln was being shot into the hollow of ditch 27.

Dimensions:	Max length	Max width	Max height/depth
Construction pit	Approx. 11'6"	Approx. 6'	-
Stoke pit	-	Approx. 6'	-
Flue	-	>14"	12"
Chamber	-	3'	2'8"
Pedestals: A. NNE	9"	6"	Approx. 11"
B. SSW	11"	7"	Approx. 11"

Kiln 7 [Site location: 171N x 555E. ATLAS Sq X00]

(Published references: Jones and Rodwell 1973, 000-000; Rodwell 1982, 000 and table 000.00; Swan 1984, MF 00-00)

Archive data: Feature plan: 2 670; Notebook: 240.24-6,120-1)

This structure was built at the junction of the brick earth and gravel subsoil. It is not entirely clear from the records whether this kiln was built into ditch 00 000, context 00 000, or between the two ditches. It would seem most likely that it was constructed in the bottom of the ditch. The area of the kiln had been badly damaged before the excavation by the construction of the quarry road, and was destroyed before excavation had been completed. Sufficient remained for observation, and it is probable that the general structure of the kiln was that repeated by Kilns 8 and 9, with a fan, or perhaps T-shaped stoke pit. The kiln wall was fired hard to a depth of 0.46m. The records suggest it was freestanding, however this would seem improbable. It was more likely built into the fill of the ditch, or at least some form of packing within this fill. The fill of the structure (00000) contained large stones, but no charcoal, nor waste pottery.

Dimensions:	Max length	Max width	Max depth
Construction pit	2.13m (7'0")	c.1.52m (5'0")	0.46m (1'6")
Chamber	1.98m (6'6")	1.22m (4'0")	0.46m (1'6")

Kiln furniture:

Although the feature plan shows three cigar-shaped objects which are probably firebars, none have so far been located. There may have been others in the ditch fill.

No pottery is recorded as having come from the kiln, but ditch 00 000 contained shell tempered pottery resembling the waste from the morphologically similar kilns 8-9, and this material is quite likely to have been waste derived from kiln 7.

Kiln 8 [Site location: 263N x 531E. ATLAS Sq X00]

(Published references: Swan 1984, 'oven 2', MF 296 R)

Archive: Plan Diamond 1011; section: diamond 1011.

This kiln was constructed in the loam spread which sealed kiln 9 (below). The elongated firing chamber was lined with clay, approximately 2cms thick. Part of the wall on the south side of the chamber had collapsed inwards. On this side the clay was still plastic behind the wall. This may represent a part repair to the kiln. On the north and west sides of the chamber there was a packing of loam and pebbles behind the kiln wall.

It is unclear whether the floor of the chamber was lined with clay, but the fact that the sand beneath the floor was fired red would suggest that the lining was very thin or non-existent. The maximum depth of the chamber was approximately 90mm.

At the junction of the chamber and the stoke pit there was a slight return of the chamber wall, but this did not form a flue. The stoke pit was semi circular, and c. 0.30m deep.

Kiln furniture: There were 4 firebar fragments, none of which were end pieces; as such no estimate of the minimum number of firebars can be made. The firebars are too fragmentary to give any indication of their possible use in the kiln.

Dimensions:	Max length	Max width	Max depth
Construction pit	3.35m (11’)	0.66m (2’0’)	-
Stoke pit	1.37m (4’6’)	1.68m (5’6’)	-
Chamber	1.52m (5’0’)	0.46m (1’6’)	-

Kiln 9 [Site location: 269N x 528E. ATLAS Sq X00]
(Published references: Swan 1984, ‘oven 1’, MF 296 R)

This kiln is earlier than kiln 8. It is unclear from the existing records whether it was sealed immediately beneath or to one side of kiln 8. The construction was the same as kiln 8; a long narrow chamber, no flue and a fan-shaped stoke pit.

Kiln furniture: by R S Jeffries

There were 10 firebar fragments and 3 end pieces found.

Dimensions:	Max length	Max width	Max depth
Construction pit	2.59m (8’6’)	1.07m (3’6’)	0.46m (1’6’)
Stoke pit	0.61m (2’0’)	1.43m (3’9’)	0.30m (1’0’)
Chamber	1.83m (6’0’)	0.46m (1’6’)	0.15m (6’)

Kiln 10 [Site location: 320N x 518E. ATLAS Sq X00]
(Published references: Jones and Rodwell 1973, 000-000; Rodwell 1982, 000 and table 000.00; Swan 1984, MF 00-00)

Archive data: Feature plans: 510; section 1243;

This structure was excavated in August 1967. The notebook entry is very brief, and the feature plan appears to be unfinished.

The kiln appears to have been aligned NNW/SSW, with the chamber mouth at the southern end. It was constructed approximately parallel to the east of the inner ditch of RB1 (cat 00000), some 3' from the edge of the feature. Like kiln 1, it may have been constructed alongside an inner bank.

The chamber was a pear shape, just over a metre long, with a maximum width of a little under a metre. Its maximum depth was *c.* 1'3". Neither a flue nor a stoke pit was recorded. On the eastern side of the chamber, some clay walling was noted in situ.

Pottery. Very little material recorded from the structure (54 sherds, 0.36 Eves). Forms noted included a platter fragment. Ledge rimmed jars (G5), with graffiti (sic), also Cam 258 and a pedestal base.

Dimensions:	Max length	Max width	Max depth
Construction pit	3'6"	2'6"	-
Chamber	3'4"	2'6"	1'3"

Kiln furniture. None recorded.

Kiln 11 [Site location: 520N x 518E. ATLAT Sq X00]

(Published references: Jones and Rodwell 1973, 000-000; Rodwell 1982, 000 and table 000.00; Swan 1984, MF 00-00)

This structure was excavated in very dry conditions in May 1969. It was not associated with any other feature. A construction pit oriented NW/SE had been dug into sand. At its NW end the pit was 2' deep, and sloped up to a maximum depth of 18" at the SE end. The kiln chamber was pear-shaped, *c.* 3'7" along the main NW/SE axis, and was built into the SE part of the construction pit. Both the chamber wall and the clay floor were clay lined. In the south west section of the chamber the clay was *c.* 3" in thickness, and hard fired and oxidised. Behind this layer the clay lining of the construction pit was still in a plastic state.

It is unclear whether there was a kiln flue. At the north west end the kiln narrowed, and fired clay remained in situ on the east side. Very little fired clay was observed on the west side. On the floor of the kiln itself there was a charcoal spread, which could indicate the presence of a flue (why?). The construction pit wall rose steeply at this point. Beyond the end of the kiln structure the construction pit floor rose upwards from a depth of 7 to 1" over a distance of *c.* 20". It is probable that this was a stoke pit, or more properly a fire pit, as with kiln 17, from which the kiln was stoked from ground level.

Dimensions:	Max length	Max width	Max depth
Construction pit	6'2"	3'6"	1'6"
Stoke pit	1'8"	2'1"	8"
Flue	1'6"	inner c.1'2" outer 10"	-
Chamber	1'10"	2'1"	1'4"

Kiln furniture: by R S Jefferies

1 fragment of a rectangular sectioned fire bar was recorded.

Dating. If the coordinates are correct, the products of this kiln are all consonant with a date in the latter half of the first century AD, and probably almost wholly within the Flavian period.

Kiln 12 [Site location: 580N x 580E. ATLAS Sq X00]

(Published references: Jones and Rodwell 1973, 000-000; Rodwell 1982, 000 and table 000.00; Swan 1984, MF 297 L)

Kiln 12 was excavated in 1969, and was recorded as being rather fragmentary. It was orientated NE/SW. The chamber was oval in plan, three foot nine inches long, two foot wide and approximately four inches deep. Clay lining remained in situ; this graded through from oxidised surface to plastic clay. The chamber floor was not lined. There was no evidence for either a flue or stoke pit.

Structure: oval, hollow cut into natural orange sand (*Cut 4 718*) (no trace of floor lining), 3'3" long by 0.00m wide, lined with clay (*4716*). The structure is aligned NE/SW. The lower fill comprised charcoally pebbly loam, the upper fill comprised brown loam with much tumbled fired clay (from the dome?) and also fire bar fragments together with pottery.

Stoke hole, flue. No direct traces of either were noted. A possible flue opening could have been where a break in the lining of the oven was noted. The clay wall at the NE end of the chamber was in a plastic state, possibly indicating that this was the far end of the kiln.

Kiln furniture. Fragments of a fire bar of square section noted.

Kiln 12. Pottery. Quantified pottery data available in the archive for 146 sherds, 0.33 EVES.

Drawn material: SS film sheet CJG; 737-741.

Dimensions:	Max length	Max width	Max depth
Construction pit	3'11"	2'-2'3"	4"

Chamber	3'9"	2'	4"
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Kiln 13 [Site location: 615N x 450E; Atlas Sheet 8]

This structure was originally identified as an oven. Oval in shape, oriented E-W, with sloping sides and rounded base, it possessed both a fired clay lining, and a large area of fired clay, which probably derived from the walls. In addition were found some patches of unfired light yellow clay, a cluster of large stones and some charcoal and pottery (this including vesicular sherds and one with a rebated rim, dating the feature to the 1st century AD). That a large area of fired clay was found, in a position suggesting that it was structural in origin, and that it derived from a roof, led to this feature originally being interpreted as an oven, rather than a kiln. Its shape, on the other hand, and the presence of raw clay (used in Kiln 22 for sealing the flue), may argue for it, in fact, having been a kiln.

Dimensions:	Max length	Max width	Max depth
Pit	1.07m	0.56m	0.18m

Kiln 14 [Site location Area 633N x 568E; Atlas Sheet 8]

The structure (7239) was poorly preserved, and aligned SW/NE with the stokehole on the NE side (7239) and both were sited within a large, irregularly-shaped hollow (7211/7242) which was cut into the southern end of a large, irregularly-shaped Roman gully (7244). Entering the hollow 7242 on the S side is a gully (7215). The kiln hollow is set some 15' SE of the edge of the small Roman enclosure 9110/7234, about 95' to the north of kiln 5 (see above).

Kiln 15 [Site location: 150N x 215E. ATLAS 3, area 15.21 150.210]

(Published references: Jones and Rodwell 1973, 000-000; Rodwell 1982, 000 and table 000.00; Swan 1984, MF 00-00). Archive data: Feature Plan diamond 270; Section Plan is Diamond 7.

This structure was excavated in July 1966 by W T Jones, who interpreted it as an oven. It was partly destroyed by a later ditch (489) aligned SW/NE, which was not traced beyond this point. The kiln was cut into ditch 159 – the inner? Ditch of RB1 enclosure, on the W side, which runs NW/SE, but neither the feature plan nor the notebooks mention this, and the section drawing (Ref) does not show the kiln cutting the ditch fill.

While it was originally described as an oven, the feature, which is of an oval plan, belongs morphologically to the groups of early kilns from the site. It is aligned east-west, with the entrance to the east. The chamber wall was clay lined, and varied in thickness from 3" to 1'+. The interior was reddish, shading off to plastic yellow clay backing. The floor of the structure was 'level, paved with largish pebbles' (2-3" diameter). Onto this was smeared c. 1" of clay, the surface of which was blackened, that beneath was oxidised.

While no flue was recorded, the presence of *tegula* pieces on either side of the chamber entrance suggests that an attempt had been made to repair a damaged flue with tile, as in the case of kiln IIB. The entrance was 9" wide. The area beyond the mouth of the structure was not excavated and it is therefore impossible to note whether or not there was a stoke pit. From the general kiln design it would seem likely that there was. The structure appeared to have been 'dismantled' (NB 19.76), and there were few pottery sherds in the structure.

Dimensions:	Max length	Max width	Max depth
Construction pit	>3'11" >3'8"	-	-
Stoke pit	-	-	-
Flue	>3"	0'9"	-
Chamber	2'10"	2'7"	>2"

Kiln 16 [Site location: 730N x 399E. ATLAS Sq X00]

(Published references: Jones and Rodwell 1973, 000-000; Rodwell 1982, 000 and table 000.00; Swan 1984, MF 00-00).

Archive data: Plan diamond 786; Section Diamond 786.

This kiln was excavated and recorded 'in haste' over two days during November gales in 1969. It lay some 25' to the south east of Kiln 4, and was orientated north-west to south-east, the flue being sited on the north-west side. It is not altogether clear whether there was a stoke pit. One sketch plan shows a gap between the flue and ditch F8 (CAT 00000), and the excavator (MUJ) described this as being 'alongside' the ditch. However, feature plan 786 shows the kiln flue cut from the ditch, which was probably itself used as the stoke pit. Ceramic evidence from the ditch, however, has been seen as later, and it is possible that the ditch was cut across the kiln stoke pit.

The kiln consists of an oval clay lined chamber, once relined, both linings fired to a bright red colour. The clay backing to the linings was described as 'raw', i.e. unfired. The chamber floor was reddened gravel.

Phase I

The phase I chamber wall varied in thickness from 2-3" to 10" at the flue mouth. In section the Phase I chamber walls were concave and shallow. It is not possible to estimate the original depth of the kiln. The flue was elongated and tapered from the chamber to the mouth, and appears to have remained in use during Phase II.

Phase I

Dimensions:	Max length	Max width	Max depth
Construction pit	>5'4"	>2'3"	-
Stoke pit	-	-	-
Flue	>2'	Inner 1'8", outer <10"	-

Chamber >3'4" 2'3" >8"

Phase II

This phase consisted of a complete relining of the kiln chamber. The chamber wall slopes outwards from the floor. During the relining of the kiln the base of a pottery vessel was incorporated into the wall lining. The flue was retained from Phase I.

Phase II

Dimensions:	Max length	Max width	Max depth
Construction pit	>5'4"	2'3"	-
Stoke pit	-	-	-
Flue	>2'	Inner 1'8", outer <10"	-
Chamber	3'2"	1'10"	>6"

Kiln 17 [Site location 739N x 142E. Atlas Sheet 6]

(Published references: Jones and Rodwell 1973, 000-000; Rodwell 1982, 000 and table 000.00; Swan 1984, MF 00-00)

Archive Refs: NBs 41.118-20; 63.10

This kiln was excavated in August 1968 in advance of the conveyor belt being moved. Excavation was carried out under salvage conditions and the record is not good.

The kiln appears to have been dug partly into the sandy clay fill of an east-west trending iron-age ditch (CAT 00000), cut into the sand and gravel subsoil. The kiln was oriented north-south, with the flue on the south side.

The chamber was clay lined, directly against the ditch fill. The kiln chamber appears to have been rectangular rather than oval in shape. The walls were hard fired and oxidised to a depth of *c.* 2". Beyond this the raw clay varied in depth from 2" at the north end to 10" at the other side of the flue. There was no fired clay in situ on the chamber floor. Low down in the chamber, intense heat had reddened the chamber close to the floor, and it is possible that the heat had destroyed the chamber floor if it had been thinly lined with clay. In section the chamber walls were near vertical sided, and the chamber was approximately 18" deep.

The flue was at the south end of the kiln, and although little of it was left sufficient survived to see that it was quite short, *c.* 5" in length, and only three inches wide at the junction with the chamber, broadening to *c.* 5" in width at the mouth. [THIS CANNOT BE CORRECT? – tallies with RSJ version]

At the junction of the flue and the chamber a vertical pillar had been placed half way across the chamber entrance, and a horizontal strip of clay had been placed across the chamber, thus forming two arches at the junction of the kiln chamber. The strip had been pierced through above each arch. The arch was approximately 14" in height. This feature

is hard to interpret and no close parallels are known. It is postulated that such an arrangement could help to deflect heat and assist with air circulation within the chamber.

The site plan shows a roughly oval area *c.* 15" x 14" at the mouth of the flue, described as containing a dark clay fill and some loam. It is too small to permit someone to stand in it (and for it therefore to be a stoke pit), and it is thus interpreted more properly as a fire pit in which a fire could be constructed and fed from ground level.

Dimensions:	Max length	Max width	Max depth
Construction pit	4'4"	3'1"	>0'9"
Stoke pit	15"	1'2"	0'9"
Flue	<0'5"	0'3"; 0'5"	?1'2"
Chamber	2'5" (int)	1'7"	1'6"

Kiln furniture:

"1 firebar was recorded and a possible perforated oven floor" [sic].

Pottery from Kiln 17. Very little material was recovered either from the kiln or from the nearby ditch. Possible kiln products include a number of base sherds with spalling on the interior. Several sherds from a closed form found, including two badly oxidised (possibly over-fired) sherds. The fabric is sandy, and softish.

Kiln 18 [Site location: 000.00N x 000E. ATLAS Sq X00]

(Published references: Jones and Rodwell 1973, 000-000; Rodwell 1982, 000 and table 000.00; Swan 1984, MF 00-00)

This was excavated, like kiln 17, in haste in advance of the quarry belt being moved. The complex is interpreted as having two phases; phase 1, context 5782, which was orientated approximately NW/SE, and phase II (Cat 5778), which was oriented east-west, and partly destroyed the phase 1 structure. The pit (Cat 5784) was considered to be an extra large stoke pit for the phase II kiln. However, there would appear to be a further two phases, phase III (Cat 5788), a pit on the same axis as Phase II, and Phase IV.

Phase I (Cat 5782)

This kiln was oriented north-west-south-east, with the stoke pit to the north-west. However, much of the kiln was destroyed by the construction of the Phase II kiln. The south-east section of the chamber remained, with fired clay grading through to raw clay (Cat 5781), in situ. The chamber appears to have been of oval plan. A small section of the stoke pit remained to the north west of the chamber. This had also been cut through by the phase II kiln.

Dimensions:	Max length	Max width	Max depth
Construction pit	Approx. 5'6"	6'6"	>1'
Stoke pit	>1'	1'7"	-

Flue	-	-	-
Chamber	>2'	1'6"	>1"

Phase II

The construction pit for the phase II kiln (Cat 5778), was oriented approximately east-west, across the flue (Cat 5779), stoke pit (5784), and part of the chamber (5781).

The chamber was oval, about half of the wall being preserved, with a fired clay lining at the back of the chamber. The lining was approximately 1.5" thick, of oxidised clay merging to raw clay. It was noted that the north-west chamber wall was constructed of clean raw clay laid directly against the natural gravel, and that there was no indication of reddening. There are two possible interpretations: i) that this was the raw clay backing the oxidised kiln wall, which had itself shelled off leaving only the raw clay backing, or ii) the chamber wall had been part repaired here, but the kiln was abandoned before it was refired. It should be noted here that the fill of the kiln chamber, above a layer of firebar and pottery fragments, comprised raw clay. It is possible that this clay had been brought to the site for a relining or to repair it, but that the kiln was abandoned before the repair could take place. The walls of the chamber sloped outwards from *c.* 2'4" at the level of the chamber floor to a width of *c.* 3' at the maximum height of the chamber, some 1'6" above the floor.

The flue of the kiln was fairly wide, 1'4" at the junction of the chamber, which tapered over its 1'6" length to *c.* 1' wide at the stoke pit. While the actual original height of the flue walls cannot be estimated, the base of the flue was at a higher level than the chamber floor. The flue fill contained a copper alloy brooch, and burnt bone. (Brooch report here).

The stoke pit was unusually large, measuring over 5 by 4 feet. Just outside the flue mouth was an intense spread of fired clay fragments and charcoal, presumably spent fuel ash (see fuel ash report?).

Dimensions:	Max length	Max width	Max depth
Construction pit	7'6"	4'6"	1'6"
Stoke pit	3'4"	4'6"	-
Flue	1'6"	1'3"	-
Chamber	2'6"	2'6"	1'6"

Phase IV (Chronologically the third phase?)

There is some evidence for this phase to the north of the flue where the gravel was reddened beneath the raw clay lining, and the clay also contained a rim sherd. In this area there was a pit behind the Phase II chamber which was aligned NNE. This feature appears to have been partly cut by the Phase III kiln and then by Phase II. It is not possible to tell whether phase IV was earlier or later than phase I (sic).

Phase III (Chronologically the fourth phase?)

This comprised an oval pit (Cat 5788), aligned approximately east-west, and lay to the west of the Phase II kiln. It contained an ashy fill in which was charcoal, pottery and raw and fired clay. If this was a kiln it is not possible to tell whether it was earlier or later than the phase I, as the area of the flue and the stoke pit had been destroyed by the Phase II kiln. It does, however, seem to cut an earlier Phase IV kiln, which clearly cuts phase I.

Kiln furniture

All the identifiable kiln furniture came from Context 5776 (the phase II chamber fill). This material comprised 1 complete fire bar, 2 end pieces, and 1 fragment. There was also a fragment of flat, perforated fired clay, which may have been part of a fired kiln floor. The complete bar (Nr 40) was 150mm long, had a maximum width of 65mm and weighed 1078g. If the length of the firebar is complete, it would have spanned less than a quarter of the chamber. It may have been used in conjunction with the perforated kiln floor.

Of some interest was a cylindrical fired clay fragment (Nr 29). This had a diameter of *c.* 305mm and weighed 2725g. It is possible that this object was a pedestal support, as its size and shape would have made it most unwieldy as a horizontal member. At one end of the bar there is a pre firing hole or perforation, which would have been of most use if the bar had been placed in a vertical position (*sic*). Two further fragments are worth noting – Nrs 41-2. These are end pieces of square/rectangular sectioned bars. They measure 70mm and 75mm square, respectively.

Kiln 19 [Site location 114N x 148E.ATLAS Sq X00]

(Published references: Jones and Rodwell 1973, 000-000; Rodwell 1982, 000 and table 000.00; Swan 1984, F 297 right).

Archive details: Section plans: Diamond 1732; 1736

This structure was excavated in December 1971, and was dug in archaeological layers rather than 3" levels. The kiln was constructed in the fill of the ditch 5098. Both kiln and ditch were oriented east-west. Both features were cut by the NNW/SSE trending post medieval ditch 5048, and the kiln had been badly damaged by this disturbance.

The kiln (5264) comprised an oval chamber *c.* 4' in length, nearly 2' wide and approximately 6" deep. The structure was first recorded at a depth of *c.* 18" in the fill of context 5048/5098. No trace was noted of either a flue or a stoke pit, but if these were at a higher level than the kiln chamber, as in the case of kiln 20, they would have been destroyed by the post mediaeval ditch. Tentative evidence of this may be seen in the section, which shows the gentle slope of the kiln wall at the NNW end of the chamber wall, such as in kiln 20.

Much collapsed clay walling was found in the chamber, with raw clay. The chamber wall was described as very friable, and crumbled when an attempt was made to lift it, but there is was no clear record of whether the chamber wall remained in situ.

Dimensions: Max length Max width Max depth

Construction pit	4'2"	>2'	>6"
Stoke pit	-	-	-
Flue	-	-	-
Chamber	4'2"	>2'	>6"

Kiln furniture:

Five firebar fragments were recorded from inside the chamber (5262). None were in situ, and they appear to have been discarded into the debris of the kiln when it was abandoned. All of the identifiable fragments were of square section, and three joined to make a complete bar 590mm in length, and with a maximum width of 56mm. Although the maximum width of the kiln chamber was 1'10" (600mm), this was without the clay lining, which was *c.* 25mm in thickness. The maximum width of the chamber would thus have been *c.* 500mm, narrow enough to allow the bar to span the chamber.

Firebar

000. Tapered/Cigar. Complete. 590mm in length; max width at mid point, 53mm; max width, 56mm; wt, 1833g.

Dating. On the evidence of the waste material from the kiln and its immediate environs, products include ledge rimmed jars of Mucking type F, and necked jars of Mucking type 00, which shares with the former a pre-Flavian, Flavian floruit both at Mucking and elsewhere. It is suggested that the production span of the kiln lies in the latter half of the first century, probably *c.* 50-90AD.

Kiln 20 [Site location : 1042N x 172E, ATLAS Sq X00]

(Published references: Jones and Rodwell 1973, 000-000; Rodwell 1982, 000 and table 000.00; Swan 1984, MF 00-00)

The kiln was excavated in August 1969. The whole area had been subjected to severe disturbance from burrowing rabbits, and the kiln itself had also been cut by a modern ditch with ran east-west.

When first uncovered the kiln was thought to be the butt end of a ditch, and a section was therefore cut across it at right angles. It was excavated in 3" spits, and the kiln was not recognised for what it was until spit 6, at 18".

The kiln was oval, orientated NNW/SSE, with a stoke pit, but no obvious flue. The chamber walls were oxidised, grading through various? shades to a yellow plastic clay backing. This was badly damaged by animal burrows. The floor was not clay lined, instead being marked by a level of charcoal, presumably fuel ash. In section the chamber walls sloped outwards from *c.* 2' in width at the floor level, to *c.* 2'8" at their maximum surviving height, *c.* 6", at the eastern end of the chamber. At the NNW end of the chamber, the surviving walling was *c.* 1'6" in depth.

There was an opening *c.* 6" in width giving onto the stoke pit at the SSE end of the chamber, but there was no kiln flue. The stoke pit floor was at a higher level than that of the kiln chamber.

Dimensions:	Max length	Max width	Max depth
Construction pit	3'	2'10"	Approx. 1'8"
Stoke pit	-	2'	11"
Flue	-	-	-
Chamber	4'10"	2'5"	1'6"

Kiln furniture:

Only one firebar fragment was recorded (Nr 43). This was 150mm in length and weighed 164gr.

The pottery from kiln 20 (1042 x 172)

The pottery waste from the kiln and its immediate environs is largely restricted to shell tempered jars of type G5, some of which are decorated with pre-firing graffiti (see the Catalogue, below, Section 00). The rim details of this type vary greatly in small detail. There was little sign of the typological predecessor to this form, the internally thickened rimmed jar type characteristic of the region until the Claudian period. Other possible products include a necked jar and, in a reduced fabric, a large storage jar with stabbed 'wheatear' decoration. It is suggested on the evidence of this material that the production waste is consonant with a later Neronian-Flavian date, *c.* AD 50-90.

Quantification data: See Archive folder Kiln 20.

Kiln 21 [1145N x 151E]

(Published references: Jones and Rodwell 1973, 000-000; Rodwell 1982, 000 and table 000.00; Swan 1984, MF 00-00)

Kiln 21 was dug in July 1971. It was in the recut context 5238 of the semi circular ditch 5154, which ran from SE to top NNE (how, if it is semi circular?).

Most of the ditch was excavated before it was noted. The records indicate that 'no visible structure' survived in situ, but indicate concentration of fired clay in an elongated oval measuring approximately 3'6" long by 1'6" wide. It appears to have been aligned approximately north-south.

The records indicate that both fired and raw clay was present. It is possible that the kiln was cut into the original ditch segment 5154, and destroyed when the feature was recut as 5238.

Kiln furniture: Triangular 'Belgic brick' fragment, also fragments of perforated clay which may be from an oven floor.

Kiln 21 pottery. There was only a small quantity of material in the vicinity of the suggested kiln. This comprised mostly reduced, shell tempered and possibly sand tempered COAR.

Kiln 22 [Site location: 1155N x 195E. ATLAS Sq X00]

(Published references: Jones and Rodwell 1973, fig 3, 18-19; Rodwell 1982, 000 and table 000.00; Swan 1984, MF 298 L – this reference cites two kilns, but there is only one at this location)

This was excavated in September 1972. It had been constructed partly over a beaker burial. The kiln, which was oriented east-west, consisted of an elongated clay floored oval chamber with a semi circular area at either end. The eastern end of these two areas is interpreted as a stoke pit, although no flue separated it from the chamber itself. Three firebars were arranged to form an arch at the junction of the chamber and the stoke pit. The semi circular area at the western end of the structure was clay lined, and had been incorporated into the main chamber itself.

There are two likely explanations for the form of the structure:

1) Kiln 22 had two phases, in the first of which there was a stoke pit at the western end of the kiln, which had an elongated chamber comparable in general terms to kilns 7-9. In its second phase, the kiln chamber was enlarged by lining the kiln stoke pit and incorporating it into the chamber. A new stoke pit was then constructed at the opposite end of the chamber.

2) In its first phase, the kiln had two opposing flues (possibly in a similar arrangement to kiln 15), but in its second phase is a scheme 1.

Either explanation could be correct, but the records lack sufficient detail to enable a definite interpretation. This kiln is very difficult to interpret, and has been published as a prototype kiln (Essex Arch. and Hist. 5, 1973), and described as having a clear division of the furnace, tiny flue and stoke-pit. However, considering the overall structure of the kiln, this appears to be an oversimplification.

Scheme I (Phase II)

Dimensions:	Max length	Max width	Max depth
Construction pit	7'	c. 1'10"	-
Stoke pit	2'6"	c. 1'10"	-
Flue	n/a	n/a	n/a
Chamber	4'6"	2'	-

Scheme II (Phase I)

Dimensions:	Max length	Max width	Max depth
Construction pit	7'	-	-
Stoke pit	w 1'4"; e 26"	-	-
Flue	-	-	-
Chamber	3'0"	-	-

Kiln furniture: by P M Barford

Kiln 22 contained one complete firebar 41cm long, six end pieces, and five fragments of firebars.

Kiln 23 [1225N x 165E]

(Published references: Jones and Rodwell 1973, 000-000; Rodwell 1982, 000 and table 000.00; Swan 1984, F 298 centre)

Kiln 23 was excavated in September 1971, in advance of quarrying. It had been built into the bottom of a field ditch (B15) which had been widened to accommodate the kiln. The kiln was roughly oval and aligned with the ditch. There was a concentration of charcoal at the SSE end of the kiln, which would appear to represent the stoke-pit. The chamber was 3ft 8ins long and 1ft 6ins wide. The chamber walls were preserved on either side, but there was no wall at either end of the kiln. In the SSE this is of course explained by the presence of a stoke-pit. However, the excavator suggested that there could have been two opposing stoke-pits, thus explaining the absence of a kiln wall at the NNW end of the chamber. The section drawing of the kiln supports this suggestion, although there insufficient evidence to be certain of this interpretation. The chamber walls had been fired hard and reduced, grading through to plastic clay. The chamber floor did not appear to have been clay lined. There was no evidence of a flue at either end of the chamber, although at the E end of the chamber 3 fire-bars formed an arch which would suggest some sort of flue which had been destroyed.

Dimensions:	Max length	Min length	Max width	Max depth
Construction pit	1.67m (5'6")	-	0.76m (2'6")	-
Stoke pit?	0.46m (1'6")	0.30m (1'0")	-	-
Flue?	-	-	0.46m (1'6")	-
Chamber?	1.07m (2'6")	-	0.46m (1'6")	0.30m (1'0")

Kiln furniture:

No tile was found. 15 firebar fragments were recovered from the chamber and 2 from the baulk. There were one complete firebar, which had what appeared to be animal paw prints along one side. This firebar was 47.5cm long, just long enough to span the kiln chamber. In total there were a minimum of 11 firebars present in the kiln. It would seem unlikely that any were in situ from the information available.

Belgic brick and a possible perforated oven floor were recorded from ditch ??? nearby, which may well have been associated with the kiln.

Jones and Rodwell 1973 Illustrations of Kiln pottery.

I

II

1, 4, 6, 9-13, 15, 21-23, 26-8, 30, 34-36, 38, 40, 41, 42-44, 47-49, 51-55, 56, 59, 61, 63, 65, 72, 74, 78, 80-1, 83, 86, 91, 92-3, 95, 96, 97-100, 103-109, 111, 112, 114, 115, 131 117-119, 120-122, 127, 129, 133

IIa

3, 17, 77, 102, 125-6

IIb

32, 124

III

7 (ditch upper fill); 18, 29 (ditch); 37, 46, 50, 57, 58, 60, 66, 67, 79, 94 (ditch, prob residual from II); 101, 110, 113 (ditch); 123 (ditch); 128, 130, 132 (Colchester Mort stamp)

V

Later Illustrations of Kiln pottery.

Sheet 252

Kiln 14.

1538 637 x 573:

1542 (638 x 567)

1543; 637 x 570 Pit group,

1544 633 x 566

2: 1548;

3

4: 1546; 1549; 1550; 1547;