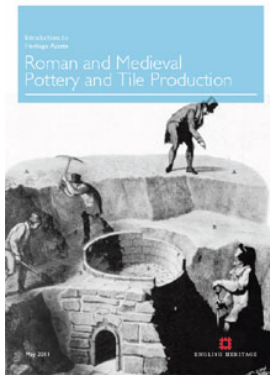




Historic England

Roman and Medieval Pottery and Tile Production



On 1st April 2015 the Historic Buildings and Monuments Commission for England changed its common name from English Heritage to Historic England. We are now re-branding all our documents.

Although this document refers to English Heritage, it is still the Commission's current advice and guidance and will in due course be re-branded as Historic England.

[Please see our website](#) for up to date contact information, and further advice.

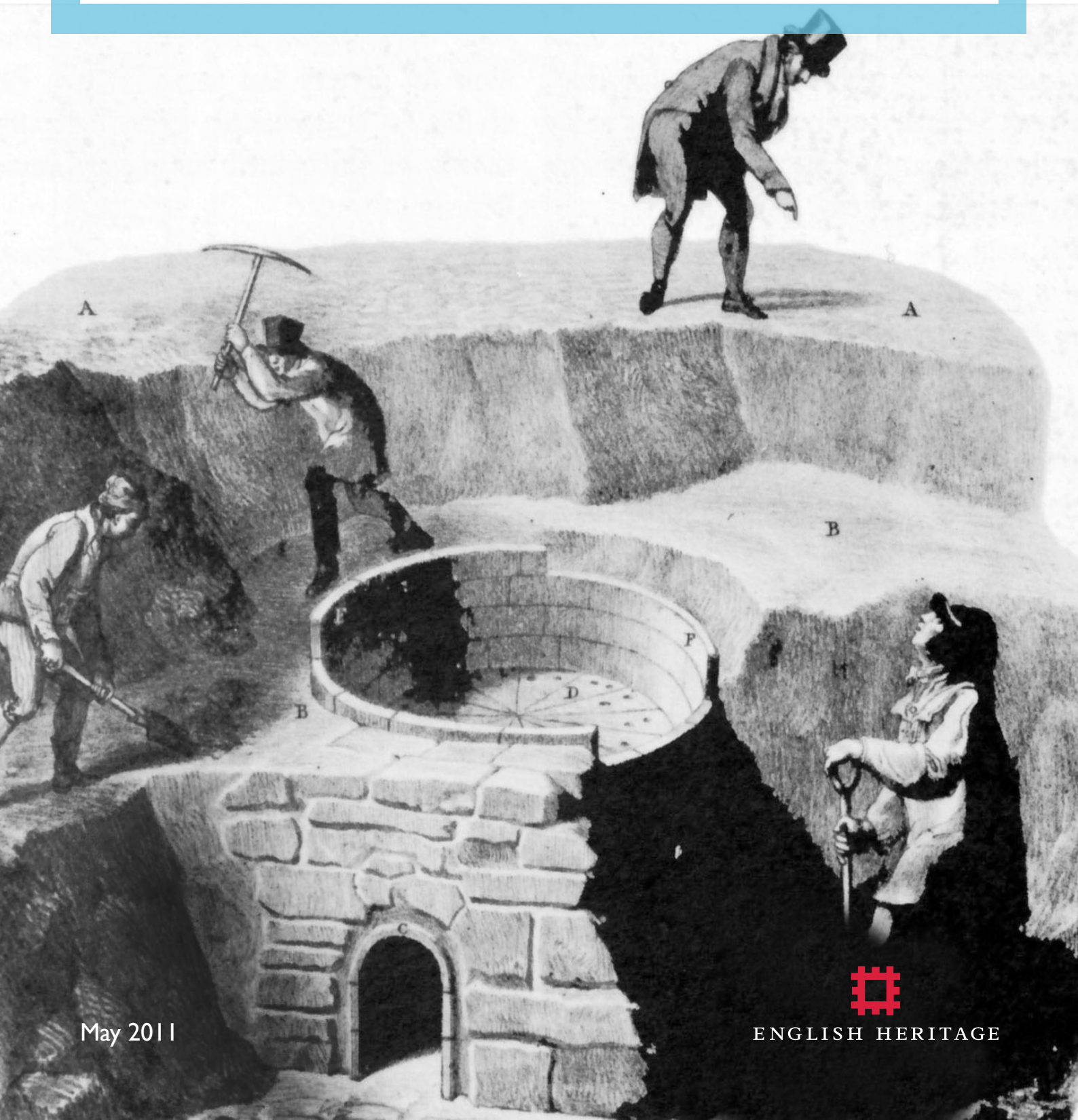
We welcome feedback to help improve this document, which will be periodically revised. Please email comments to guidance@HistoricEngland.org.uk

We are the government's expert advisory service for England's historic environment. We give constructive advice to local authorities, owners and the public. We champion historic places helping people to understand, value and care for them, now and for the future.

HistoricEngland.org.uk/advice

Introductions to
Heritage Assets

Roman and Medieval Pottery and Tile Production



May 2011



ENGLISH HERITAGE



Fig. 1. Excavation of a Roman pottery kiln in progress at Castor in Cambridgeshire in 1822.

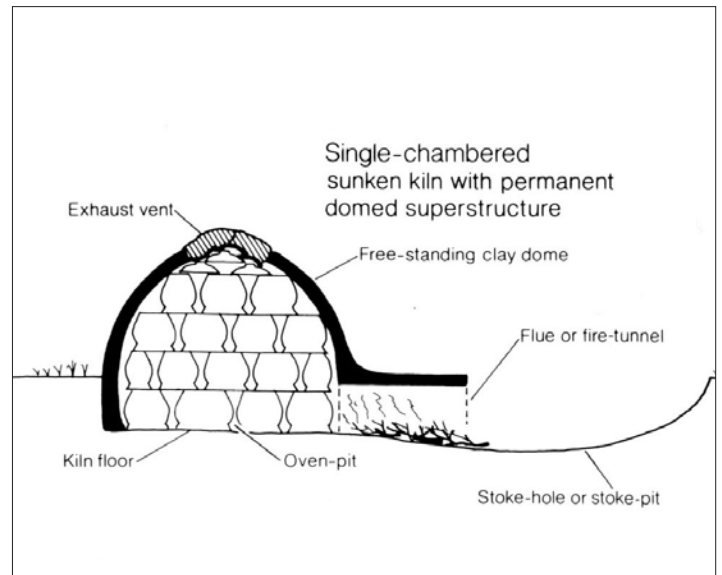


Fig. 2. A cross-section through a single-chamber kiln of the Roman period from *The Pottery Kilns of Roman Britain* (1984).

INTRODUCTION

The manufacture of pottery is first recorded in this country in the early Neolithic period starting around 4000 BC. At this period and for several thousand years later pottery manufacture was undertaken at a domestic level using very limited technology. Most pottery in the prehistoric period was manufactured using a coil method of construction which involved the potter wrapping and moulding a long coil of clay by hand to the shape of the vessel. Although this required great skill, it was a laborious, time consuming task only able to supply immediate needs. Mass production of wheel-thrown pottery at specialised centres did not take place until the Iron Age starting around the 2nd century BC. The production of pottery on what can be termed an industrial scale began in this country in the immediate aftermath of the Roman invasion of 43AD. The Romans also introduced the production of tile for use in building projects.

Because it is so durable, pottery is the most common type of artefact found on archaeological excavations from Neolithic times onwards and is one of the main ways archaeologists can establish the date of a site. In recent years the study of pottery has broadened from using it simply as a dating tool to examine the social and economic aspects of pottery manufacture, distribution and use. All these avenues of research emphasise the importance of understanding as much as possible about the production processes through identifying and studying the kiln sites.

DESCRIPTION

The simplest way of firing pottery is to place the vessels in a bonfire referred to as a clamp kiln. The pots were placed on the ground surface or in a pit and covered with fuel, typically bark, grass or wood which was then set alight. A clamp kiln is a simple structure and was used in prehistoric times, but it is very difficult to control the firing conditions and therefore the range and numbers of vessels that can be manufactured using a clamp kiln is limited. Mass production of pottery and tile to a consistent style and form needed a more sophisticated approach which came with the introduction of 'updraft' kilns around the beginning of the Roman period. The end of the Roman period saw a return to simpler methods of pottery manufacture akin to the prehistoric period but by late Saxon times the use of updraft kilns resumed and they continued in use for both pottery and tile manufacture right through the medieval period.

The main elements of a Roman or medieval period updraft kiln are (a) a stoking area or pit at the front of the kiln from where the fuel (most commonly wood or peat) was fed to the furnace chamber (b) a flue containing the fire and which linked the stoking area to the furnace chamber. Some types of Roman and medieval kilns had two or more flues (c) the furnace-chamber where the hot gases collected and percolated upwards and (d) the oven where the stacked vessels were fired on a raised floor above the furnace-chamber. A vent at the top allowed excess heat to escape; this vent could be sealed to exclude oxygen when a grey-coloured 'reduced' fabric was required. The superstructure of the oven was usually dome-shaped and constructed of stone with a clay lining or made entirely of clay.

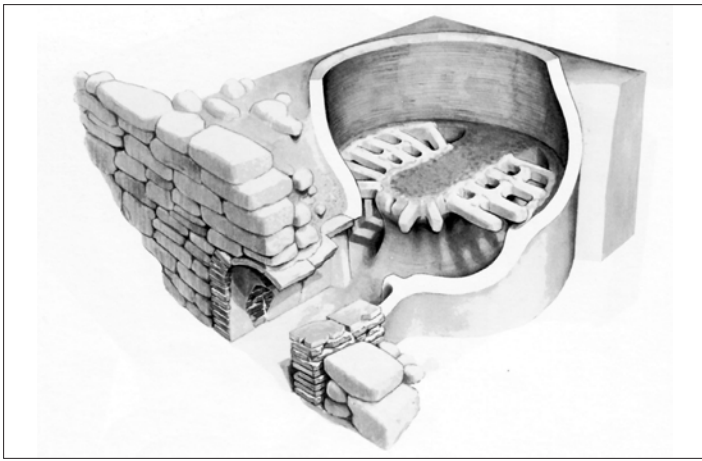


Fig. 3. Reconstruction drawing of a Roman pottery kiln from the Nene Valley in Northamptonshire, showing how the over floor is constructed of prefabricated bars. From *The Pottery Kilns of Roman Britain* (1984).

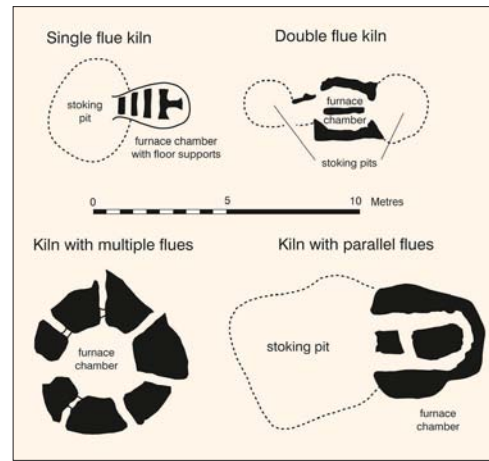


Fig. 4. Basic typology of medieval pottery kilns after John Musty.

However the form of the superstructure is usually difficult to ascertain with certainty because it often had to be partially dismantled to remove the pots after firing and any remaining structure would be levelled with the passage of time. An updraft kiln is usually oval or circular in plan though in the Roman period kilns specifically designed for the manufacture of tiles by the military were commonly rectangular. They are also distinguishable from pottery kilns by the stronger internal supports needed to carry the weight of the tiles stacked on the raised floor of the oven.

Evidence of pottery and tile manufacture on a site is not restricted to the kilns themselves. It can also be recognised from concentrations of broken or misfired pots called wasters and from distinctive clay objects used to separate the pots or tiles in the kiln known as 'spacers' or 'stackers.' Sometimes fragments of potter's wheel or tools used to shape and decorate the pots are found. Clay was also usually quarried close to the kiln site and so the remains of large pits and hollows cut into a clay subsoil can indicate the location of a production site.

In the Roman period pottery and tile producing sites are mostly found in the lowland areas across the south and east of England with major industries in the Lower Nene Valley, around St Alban's in Hertfordshire and in the New Forest in Hampshire. Further north, in Yorkshire, extensive evidence of pottery production has been found around Doncaster and near Malton, both of which were important Roman forts and civilian settlements. Large-scale manufacturing resumed in the late-Saxon period with an important industry centred on Stamford, in Lincolnshire. From the 12th century onwards pottery and tile producing centres are found right across the country, mostly in rural locations serving local markets. Tile production was particularly associated with the supply of floor tiles, sometimes highly decorated, to monasteries, churches and cathedrals. A medieval kiln site producing both floor tiles and roof tiles has been excavated less than a mile from the Cistercian Abbey of Meaux, in east Yorkshire.

CHRONOLOGY

There is a small amount of evidence that simple updraft kilns were in use in this country a decade or two before the Roman invasion of 43AD, introduced possibly by itinerant potters or by the passing on of knowledge. After the invasion the presence of numerous troops garrisoned across the country created a sudden and sustained upsurge in the demand for pottery and tile and numerous kiln sites have been identified from the first and early second centuries AD associated with military establishments. Likewise the growth of urban centres from the late 1st century AD onwards stimulated the market for pottery and tile. New manufacturing centres continued to develop right up until the end of the Roman period such as the Crambeck industry in Yorkshire which began production around 330-340 AD, but none continued in operation for very long into the 5th century after the end of the Roman period. The following centuries saw a reduction in the use of pottery and tile as manufacturing shrank to a localised craft activity as it had been in prehistoric times. The use of updraft kilns returned in the east of England in the 9th century AD, perhaps signifying the influence of Scandinavian settlers. Single flue updraft kilns from this period have been excavated at Stamford in Lincolnshire and Grimston in Norfolk but the technology spread to other parts of the country before the Norman Conquest. By the 13th and 14th century pottery and tile manufacture was widespread and was predominantly a rural and seasonal activity carried out by the peasantry to supplement their income. The apparently low status of the potter compared to other types of crafts such as metalworking may explain why there were no significant technological advances or innovations in the manufacture of pottery in the Middle Ages. After the Middle Ages imported pottery became more widely available including, from the 17th century, pots from the Far East. These external influences stimulated the development of new pottery industries in England of which the firm of Josiah Wedgwood in Staffordshire in the middle of the 18th century is credited with being the first to manufacture pots on an industrial scale while at the end of the century Josiah Spode developed bone china at his pottery in Staffordshire in imitation of the finest white porcelain vessels imported into Europe from China.



Fig. 5. Photograph of the clay quarries at Brill in Buckinghamshire. This gives a good impression of the scarred landscape left after clay has been extracted for pottery manufacture.

DEVELOPMENT OF THE ASSET TYPE AS REVEALED BY INVESTIGATION

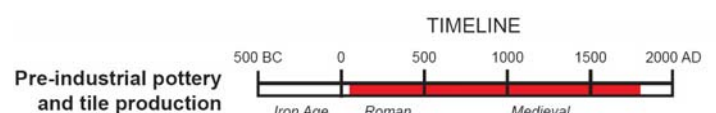
Concerted study of pottery and tile manufacturing sites began in the 1960s with the upsurge of discoveries brought about by the boom in rescue archaeology. These new kiln sites enabled John Musty to publish a classification of the types of medieval pottery kilns in 1974. He identified four basic types: a single flue kiln; a kiln with two opposing flues; a kiln with three or more flues and a kiln with parallel flues. This last type was mainly associated with the manufacture of bricks and tiles. Musty's study of medieval pottery kilns was followed ten years later by a much more detailed study of Roman pottery kilns by Vivien Swan. Her study identified differences between kilns based on variations in the internal structure of the furnace chamber and oven.

While these studies placed an understandable emphasis on the kilns themselves, it is important to consider the wider manufacturing site since pottery and tile production involved a sequence of processes of which the actual firing of the pots and tiles is just one phase. The process starts with the extraction of clay. Infilled quarries have been found at both Roman and medieval kiln sites and it has been suggested survive as earthworks in some locations, such as at Brill in Buckinghamshire where there was certainly a considerable medieval pottery industry. Next the clay would have been transported to the site for storage and to let it weather for a while before being taken to pits for puddling to remove impurities. All these stages can leave archaeological traces in the form of shelters, pits and the remains of leats and channels conveying the water needed for puddling the clay. An excavation at the medieval kiln site at Olney in Buckinghamshire revealed the remains of a paved pit where the clay was stored and puddled. Traces might also survive of the workshop used by the potters and storage areas where the fired vessels and tiles could be stacked prior to being sent to market. Such a complex was revealed in great detail in the excavation of a medieval kiln site at Lyveden in Northamptonshire. The excavation in the late 1960s and early 70s found evidence for both pottery and tile manufacture in the 13th and 14th centuries at several locations scattered among the house plots of a small village.

ASSOCIATIONS

Roman pottery and tile kilns were commonly sited near to towns where the urban population provided a ready market. Kilns were usually sited on the outskirts away from the main residential area because of the risk of fire posed by the kilns and to avoid the smoke pollution generated during the firing process. In the countryside Roman kilns have been found on the edges of fields and on the periphery of farming settlements and also associated with the civil settlements attached to forts where they could supply both the military and civilian markets. Pottery manufacture and iron-smithing often occurred together presumably because co-location enabled the two industries to share fuel and the transportation of finished goods to market, either by road or river.

The association between kiln sites and towns is not so strong in the medieval period when pottery and tile manufacture was predominantly a rural industry, situated among the fields or on the periphery of settlements. The site at Lyveden, mentioned above, is a good example of a medieval pottery industry and here evidence was found of iron-smithing in close association with pottery manufacture. Lyveden lay within Rockingham Forest, and Glenn Foard has demonstrated how industrial activity in the forest like potting, iron working and charcoal making had differing local distributions relating not only to the availability of raw materials but also to administrative areas. However, in broad terms the co-location of these two types of industry, potting and iron-working, allowed the sharing of fuel and transportation costs and as has been noted at many Roman kiln sites. Both roads and rivers were used to move pottery and tiles to market and in some instances pots must have been moved by sea as this is the only way to account for the widespread distribution of finds of some varieties of medieval pottery.



FURTHER READING

As pottery is the commonest find on excavations, the literature on it is vast. But when production is considered the reading is more manageable. The most detailed account of Roman pottery kilns is V Swan, *The Pottery Kilns of Roman Britain* (1984), while the best detailed introduction to the medieval pottery industry is M McCarthy and C Brooks, *Medieval Pottery in Britain AD 900-1600* (1988). The typology of medieval pottery kilns is set out in J Musty, 'Medieval Pottery Kilns' in V Evison, H Hodges and J G Hurst (eds), *Medieval Pottery from Excavations: Studies Presented to Gerald Clough Dunning* (1974).

Other useful published books and articles are: J Cherry, 'Pottery and Tile' in J Blair and N Ramsey (eds), *English Medieval Industries* (1991); S Eames, *Medieval Tiles: A Handbook* (1968); G Foard, 'The Medieval Pottery Industry of Rockingham Forest, Northamptonshire', *Medieval Ceramics* 15 (1991), 13-20; J Haslam, *Medieval Pottery in Britain* (1984); and J Stopford, 'Modes of Production among Medieval Tilers', *Medieval Archaeology* 37 (1993), 93-108. Two journals specialise in this subject area: *Journal of Roman Pottery Studies*, published by the Study Group for Roman Pottery (1986 – present); and *Medieval Ceramics*, published by the Medieval Pottery Research Group (1977 – present).

CREDITS

Author: Trevor Pearson
Cover: As Figure 1
All Figures: © English Heritage

If you would like this document in a different format, please contact our Customer Services department:

Telephone: 0870 333 1181

Fax: 01793 414926

Textphone: 01793 414878

E-mail: customers@english-heritage.org.uk