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Christian Wall Paintings from Lullingstone Roman Villa

The Chi-Rho, a well known symbol of Christianity, is based on the monogram of XP, the first letters of the Greek *Christos* (Christ). The painting shown on the cover of this magazine, is from the south wall of the main room of the late fourth-century house-church situated at the north end of the villa at Lullingstone. It is fortunate that Lt-Col Meates realised the significance of the plaster pieces found in the excavation and oversaw its removal and preservation. Unfortunately, work has stopped on restoring the material because of lack of funds. The plaster is now in store at the British Museum.

The Kent Archaeological Field School will be visiting Lullingstone Roman Villa on October 20th.

Front cover photo reproduced with the kind permission of the Trustees of the British Museum

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FIRST WORDS

Well, it is the height of the summer and we are half way through our programme of courses for the year. As many of you know, it has been an exciting year and so we have added some information about recent events to let all of you know what has been happening. In fact, we have added another 16 pages to the magazine to fit in all the information so that it is now twice the usual length. We hope that some of you will contribute to the magazine by writing in with comments about the courses or any items of archaeological interest — do see the box on the facing page.

The content of these first two pages has also changed for this issue as we wish to address a critical item as fully as possible. The impact on archaeology of the British government's recent signing of the Valetta Convention of the Council Of Europe is extremely serious. Article 3 of the convention will introduce a system of licensing for archaeological excavations. This could mean that many of the activities you now enjoy at the field school could be under threat, as we will need official sanction for excavation and some related activities. Fortunately, as a Member of the Institute of Field Archaeologists, I have the highest qualification in the discipline and will be deemed a suitable supervisor by the powers in charge. But what of other local societies and groups scattered across the country who have restricted to those who have been deemed 'worthy'? How will interested people and students of archaeology gain experience outside the major institutions and without joining accredited courses? It may be that the current mix of amateur and professional archaeology in this country will be changed for ever.

Andrew Selkirk, Chairman of the Council for Independent Archaeology, recently sent an open letter to interested parties about Article 3 of the Valetta Convention and I think it is so important that I have included it in First Words.

'British Archaeology is at a turning point. The British government has just signed up to the "Valetta convention" of the Council of Europe, Article 3 of which mandates a system of licensing for archaeological excavations.

'This will destroy British archaeology as we know it. One of the glories of British archaeology has been its community archaeology, a wide spread of local archaeological societies — sometimes indeed local individuals — who have looked after the archaeology of their area, both to

FIRST WORDS

destroyed if a licence has to be sought for every move, with the implication that the government "owns" the past.

'It will also destroy innovation, the abilities of the young and outsiders to challenge establishment thinking, which has given British archaeology a liveliness that is unrivalled anywhere in the world.

Will this soon be a picture from the past? Many hundreds of people from all walks of life take advantage of our courses and participate in 'hands on' archaeology at the Kent Archaeological Field School.

Unlike many archaeological groups and societies, the Kent Archaeological Field School is run by staff who are already professionally qualified to teach archaeology to the general public.

'Article 3 is extremely comprehensive; it mandates licensing both of individuals and of excavations in the most uncompromising terms. Indeed it covers not only excavation, but also prospecting in any form including all forms of geophysical prospecting. In many countries (such as Italy) the ban on prospecting even extends to aerial photography; it will certainly be extended to all forms of field walking.

'Article 3 will not just affect local societies and "amateur" archaeologists but will spread much wider to university archaeologists, museums, research institutes — even (particularly) the Time Team will be affected by the need to seek permission in advance every time they need to open a new trench or carry out "geophizz" on a new area.

'It would appear that English Heritage, Historic Scotland and Cadw are taking the line that this can be dealt with by introducing a "Code of Practice"; however this is not what Article 3 states or intends. The government agencies are clearly unhappy with the licensing proposals, which they do not wish to have to put into action....This is the defining moment facing archaeology in this country: is it to become a "closed system", dominated by an establishment bureaucracy? Or will it remain what it has always been, an open system, open to innovation, new ideas, and new people, seeking widespread participation and a sense of belonging among all those who cherish the past? Please, please, please join us in keeping British archaeology open.'

The CIA have an open letter for those who wish to stop Article 3. To sign, contact: Kevan Fadden, Council for Independent Archaeology, 7 Lea Road, Ampthill, Bedford, MK45 2PR, website: www.SOSarchaeology.com. The text of the Valetta Convention is available on: http://www.archaeology.co.uk/valetta.
The Council for British Archaeology is preparing a report on the way forward regarding the implementation of the Convention. Information is on the CBA website: www.britarch.ac.uk.

LETTERS

If you have any thoughts on any historical or archaeological subject or have enjoyed our courses why not write to us at the Field School? Some of our letters to date have become famous (or infamous!) Our first letter ever published called 'Barbie' has now been imortilised on the web and read out by John Peel on Radio Four. So if you have have something interesting to say we would like to hear from you!
Write to: The Editor, School Farm Oast, Graveney Road, Faversham, ME13 8UP.

NEWS

Another Elizabethan Theatre Found Under London Car Park

The famous Hope Theatre has been discovered by archaeologists under the concrete of a car park on the south bank of the Thames. The theatre, built in 1613 just after the Globe Theatre was destroyed by fire, is one of the best documented theatres of the period. The contract for building the Hope Theatre still exists and specifies that its size should be the same as the nearby Swan Theatre with woodwork of oak, not 'fur' trees, and upholstered boxes for gentlefolk. *Bartholomew Fair* by Ben Johnson was the first play staged at the Hope but the theatre was also used as a bear-baiting arena. As well as bear-baiting, Elizabethan audiences watched the spectacle of dogs wrestling with apes strapped to the backs of horses.

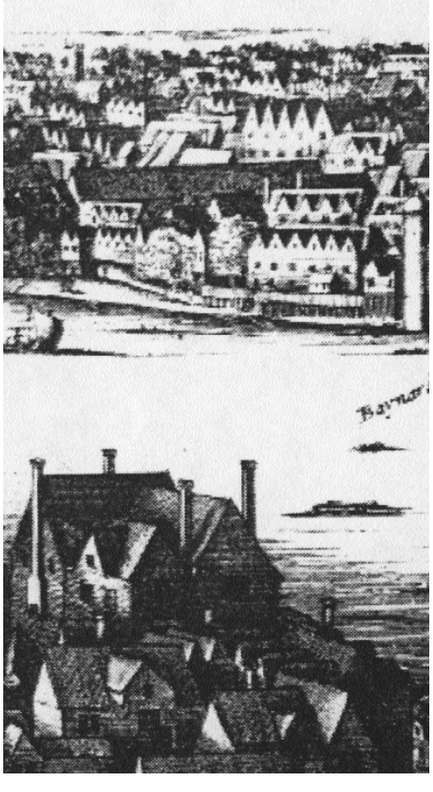
Unfortunately, all that can be seen by archaeologists of the three-tier theatre are some brick foundations; the rest of the building is still underneath four adjoining properties. The area that was uncovered was doomed to be re-covered by the concrete car park, so archaeologists could do little more than record the area they revealed in their excavations. Hopes that the area would be fully excavated and that the theatre may even have been reconstructed, like the Globe Theatre, only 200 yards away, were dashed when concrete was poured over the site. Dr Simon Thurley, Director of the Museum of London, which organised the investigation, said the finds were astonishing. 'Elizabethan theatres form part of England's unique contribution to Western civilisation and to find any part of them — no matter how small — is wonderful.'

The outcry from scholars and actors has been less sanguine, with Dr Jonathan Miller, the well-known theatre director saying: 'It is a great shame. It is typical of modern England that a car park should cover up a unique theatre.' These sentiments were echoed by Robert Smallwood from the Shakespeare Centre in Stratford-on-Avon, who said: 'I cannot believe that concrete is more important than our heritage. It is a very exciting and interesting discovery and I do feel terribly strongly that archaeologists should be given time to investigate these things.'

NEWS

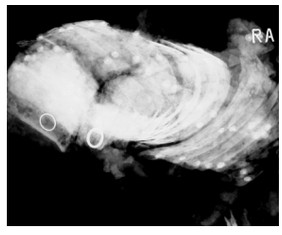
But Sarah Gibson, an Archaeology Officer at Southwark Council, insisted the site was still intact under the concrete and that re-covering what was visible was the only feasible option. 'We have a small portion of the theatre — but the rest extends way beyond that and we felt we couldn't display it meaningfully,' she said. However, when the remains of the Rose Theatre, Shakespeare's original theatre, were discovered there was such a public outcry when it was going to be re-buried under concrete that it was preserved under glass and opened to the public. Time has run out for the excavation of the entire Hope Theatre site during this period. The question remains, if the theatre is preserved beneath the concrete, will future generations treasure the past more than their cars and search the area for the whole story?

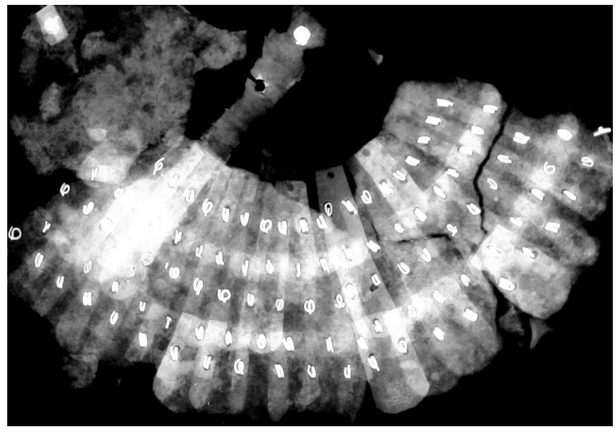
The seventeenth-century image of London (below) shows the Globe Theatre and, to the left, the bear-baiting site, rebuilt as the Hope Theatre.



Unique Roman Armour Found in Carlisle

Hundreds of items of Roman armour thought to date from around the time of the Emperor Hadrian's visit to Britain in June AD122 have been uncovered on the site of a Roman fort in Carlisle. The material retrieved includes many items of Roman military interest, the most spectacular being a scale neck-guard believed to be a unique example of its type anywhere in the world. It consists of dozens of iron scales held together with bronze wire. Such pieces have only been seen up to now on Roman statues; this piece may at last solve the puzzle of how such armour worked. Other items found include complete laminated limb defences, worn by legionnaires on their sword arms and copied from the equipment of gladiators. Mike McCarthy, Managing Director of Carlisle Archaeology Ltd, said, 'This wonderful discovery ranks among the most important ever made in Britain dating from the Roman period.' The items were found in a building that may have been an armourer's workshop next to the Principia or headquarters building. Archaeologist John Zant said, 'I am sure the material is Hadrianic in date and the only other material of this type is known from Dacia'. The Roman fort at Carlisle was first built in timber but replaced with a stone-built fort in the third century AD. Archaeologists believe from other evidence found there that the fort continued as a military post well into the fifth century and Bede recounts that St Cuthbert was shown the Roman walls and working fountains of Carlisle in AD680. It is believed the walls of the Roman fort were still standing in the Norman period.





X-ray images (above) of the Roman armour found at Carlisle. The top image shows laminated link armour, possibly for shoulder defence. The lower image is of a neck-guard made from iron scales held together with copper alloy wire. Both photographs are courtesy of the Royal Armouries, Leeds.

NEWS

A black basalt statue, possibly of Cleopatra, made during her life.

What a Carry On Cleo

This summer's exhibition on Cleopatra at the British Museum claimed to reveal the face of the Egyptian queen as it has never been seen before. Although much is known of Cleopatra's political astuteness and sexual adventures, there was only one universally accepted image of the que the Vatican that copy of the gilde of her erected in Venus by Julius experts at the Br have revealed at other possible lil Vatican head sh woman with wic a long face, high narrow chin; it a long slender nos of the nose is broken off the head. Si some of the other images in the exhil a large, hooked nose.

Instead of the slender seductress d cinematic fantasies, the exhibition al the physical reality of an upper-class woman of the Ptolemic family. With inclination to plumpness, many of th Cleopatra depict her with what art h to as 'Venus rings', rolls of fat aroun Also, she would not have been statu only about 5 foot tall, the average he woman of the period. Beneath the la teeth would have ruined any beguili they were likely to be worn down by grit-filled Egyptian bread.

But why this obsession with the looks of a queen who ruled Egypt at a time when it was threatened by the expanding Roman Empire? In part, our modern culture craves images to give form to events. But the story of Cleopatra is so much more than that of a mere royal vamp, and it is her achievements that will fascinate people who search for her character and appearance.

Cleopatra VII was born in 69BC and, became queen in 51BC when, in the divine ruler tradition of ancient Egypt, she married Ptolemy III, her brother. Egypt was courted for political and

An unflattering impression of Cleopatra, which may reflect the physical realities of women in ancient Egypt, but does her appearance diminish our view of her political ability?

NEWS

by the warring factions in Rome at the time; first Pompey, via his son, then Julius Caesar approached Egypt and its queen. There is no record of an affair between Cleopatra and Gnaeus Pompey, but rumours meant that Cleopatra was exiled from the capital by her husband. When Caesar pursued his war with Pompey in Egypt, he found the exiled queen keen to ally herself and Egypt with him. Indeed, the story that she had herself smuggled into his quarters in a rug may be true. After Caesar defeated Pompey and Ptolemy died, the couple became one of the most powerful in the ancient world. Cleopatra bore Caesar a son and was feted in the celebrations in Rome following Caesar's military triumphs. But in 44BC Ceasar was assassinated and Cleopatra returned to rule Egypt with Caesar's son as pharoah.

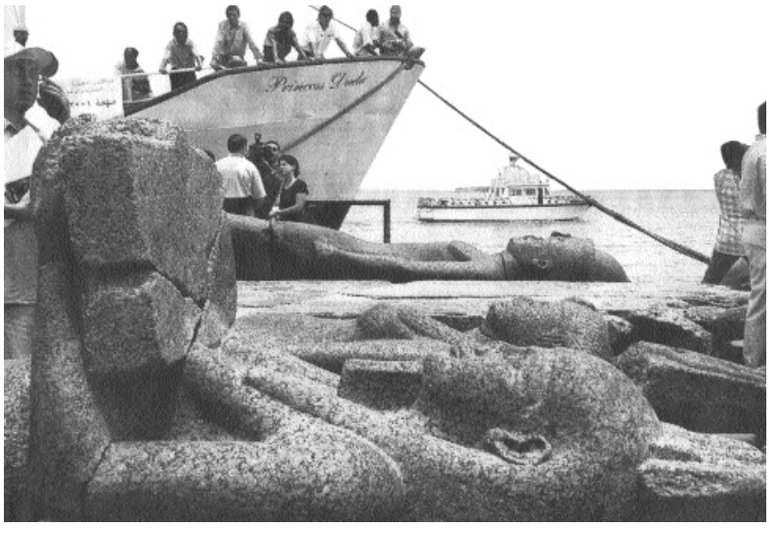
Rome was soon torn apart in a power struggle, resulting in a division of the empire between Octavian in the west and Mark Anthony in the east. Cleopatra staged a dramatic meeting with Mark Anthony: dressed as Aphrodite, she sailed to meet him in an ornately decorated barge. They became lovers and Cleopatra bore his twins in 40BC, but Mark Anthony returned to Rome to marry Octavian's sister. This political alliance did not last and when Mark Anthony returned to Cleopatra, he enraged Octavian, who eventually declared war. Finally, Octavian's victory at the Battle of Actium in 30BC drove Mark Anthony to suicide.

Cleopatra, then tried to win over yet another ruler, but when Octavian declined, she secured her place in history with one of the most famous suicides ever. Cleopatra had managed to maintain some independence for Egypt during her rule, chiefly by her astute alliances, so perhaps it is little wonder that we are still intrigued to discover the face that so many great men found irresistible.

There is an accompanying book to Cleopatra of Egypt: From History to Myth *available from the British Museum.*

Statues of Sunken Egyptian City Salvaged

One of the largest Egyptian inscribed monuments ever found has been lifted from the Mediterranean seabed just off the coast of Egypt. Known as a stele, the monument is just one of many treasures from the site. 'The site is amazing', said Eric Smith, a diver from Key West, Florida. 'In a couple of dives we discovered so many objects.' Egyptologists say they have only scratched the seabed over the lost sunken Egyptian city of Herakleion. It was a flourishing port until 331BC, when it went into decline following the founding of Alexandria, and was probably destroyed by an earthquake in the seventh or eighth century. Other pieces found include giant statues of a pharaoh, a queen and a river god. The recovered monuments were lifted from the sea onto a barge and will be transferred to Alexandria.



Egyptian statues (above) recovered from the sea at the lost city of Herakleion. It is now possible for tourists to dive this site in Egypt (left) with an operator, Regaldive. Over 4,000 artefacts can be seen, ranging from sphinxes to the underwater remains of the lighthouse of Pharos.

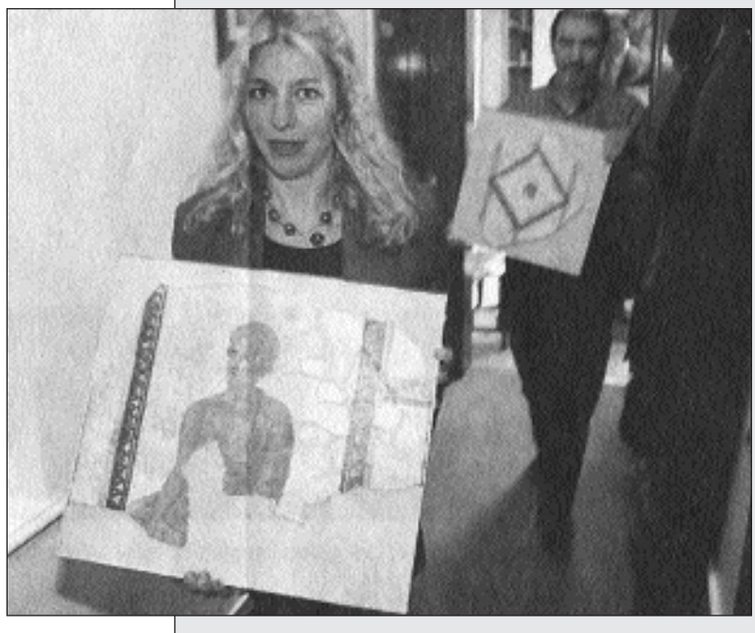
NEWS

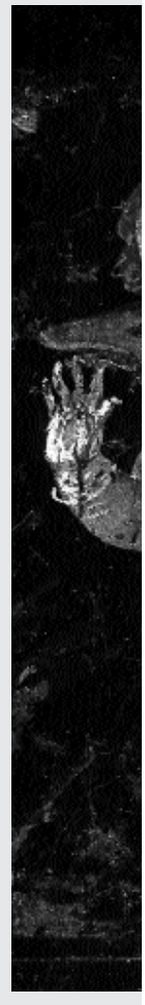
Pompeii Frescos Returned

Early this year a Mayfair antiquities dealer, James Ede, was surprised to find six Roman frescoes worth about £100,000 delivered to his office. The treasures had been stolen 16 years before, when thieves chiselled them from the walls of a villa that was being excavated near Pompeii. Ede had received a telephone call two days before the delivery from a man who had the frescoes and said that he wished to return them because he believed they were stolen. Ede took the frescoes to the Art Loss Register, an international organisation which seeks to find stolen artefacts. From there they were stored at the Italian embassy, before being flown to Italy.

The frescoes had been preserved in ash following the eruption of Mount Vesuvius in AD79. The well-preserved artefacts and buildings in Pompeii have made the city a target for robbers since it was rediscovered in the sixteenth century. So the return of the treasures is a triumph for those tracking down art thieves. The director of investigations with the artistic heritage protection squad in Rome, Major Ferdinando Musella, said, 'Two years ago we discovered that an Irish businessman in London was discreetly offering for sale six frescoes, which from their description were almost certainly from Pompeii. We have been exerting what we call "investigative pressure" on this person, and we believe it was this pressure that persuaded him to abandon the frescoes.' Now that the frescoes have been returned, the task of finding exactly which building in Pompeii they were taken from is a problem for the archaeologist in charge of this 100-acre site. Professor Piergiovanni Guzzo said, 'We are going through our records of stolen material. But if, as seems probable, the frescoes come from clandestine digs, then we probably will not be able to discover exactly which buildings they came from. There are thousands of buildings in Pompeii.'

Pompeii — archaeology at risk



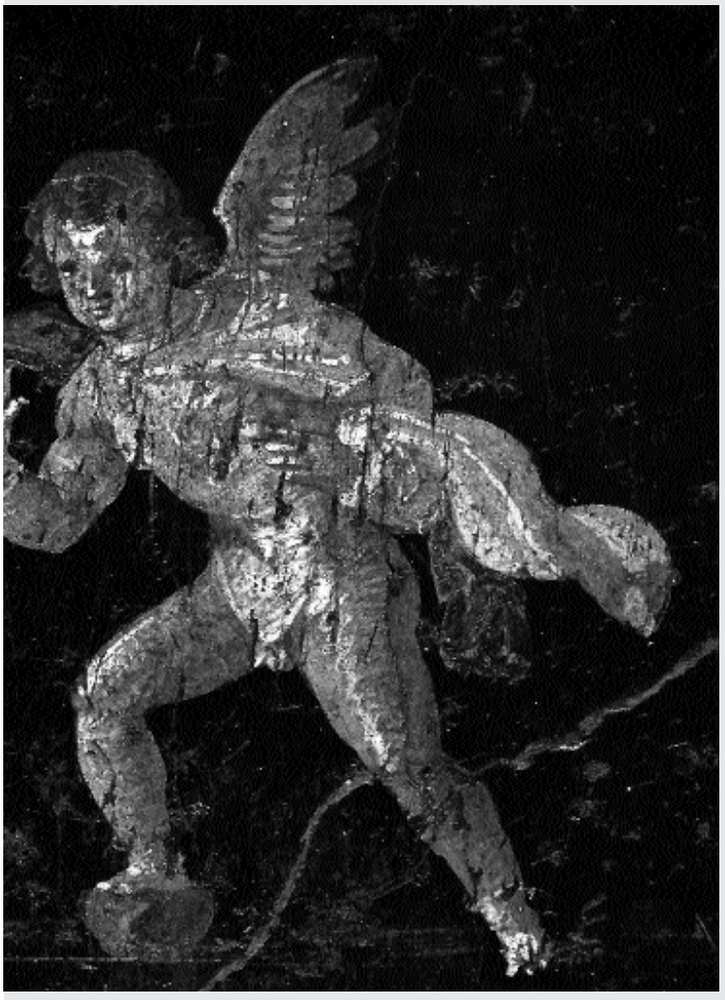


Staff at the Italian Embassy show the stolen frescoes (above). Varying from the size of a table mat to a large tray, the depictions included the god Dionysus, a figure wearing a toga and a snail on a branch. The preservation of the pieces was good, for the fresco technique of painting on wet plaster means that the paint penetrates the wall and can last well. But the stolen frescoes had been damaged when removed from Pompeii. The cherub from the House of the Vettii (right) is typical of paintings at risk from thieves.

Pompeii Frescoes Discovered

The widening of an Italian motorway has given archaeologists a second chance to take a glimpse into the luxurious lifestyles of some ancient Romans who lived near Pompeii at the time of the eruption of Vesuvius in AD79. When the Naples to Salerno road was built in 1959, some ancient structures were found, but not fully excavated. Now that the road is being widened, archaeologists have had the opportunity to investigate further and have found buildings with beautifully painted walls. Delicate figures (right) stare out from a red background: mythological

NEWS



characters, gods and goddesses, the muses, a personification of the River Sarno (Pompeii's link to the sea) and a poet. The paintings are remarkable for their quality and good state of preservation.

The red background to the paintings was made in the traditional fresco manner of painting on wet plaster, but the figures that decorate the walls were painted on drying or completely dry plaster. This technique gave the artists longer to work, but it meant that the paintings were more likely to flake, making this find even more rare. One of the archaeologists at the site, Dr Salvatore Nappo said, 'Painting *a secco* (dry) gave the artists more time to consider what they were doing. It also makes it possible to produce more subtle combinations of colour, and to create the translucent, diaphanous quality which is so evident in these paintings' depiction of drapery'. Another archaeologist, Dr Marisa Mastroroberto, explained how the paintings were preserved.

'By chance the site was just far enough from Vesuvius to be covered in ash, rather than rocks or stones, when the volcano exploded. The ash and water combined to form a sort of skin which covered the paintings and preserved them against the ravages of people and pollutants which usually combine to destroy 2,000-year-old paintings.' The archaeologists have just wiped off the detritus, Dr Nappo stated. 'There has been no re-touching. We have simply cleaned it.'

The paintings were produced by teams of artists, some specialising in figures, others in foliage and so on. According to Dr Nappo, the works would have decorated three banqueting rooms, each seating up to nine people. The rooms were luxurious, containing fountains and couches. They were probably used to entertain the merchants and businessmen who came to the area around Pompeii, famed for its olives, fruit, wool and good-quality wine. It is thought that the banqueting rooms were part of a large complex owned by the Sulpicii family at the time of the eruption of Mount Vesuvius. Their name was marked on piles of marble panels that the Sulpicii may have intended to use to line the walls of baths they were building when the volcano erupted.

Despite these magnificent finds, we still only know part of the story of this Roman complex. The archaeologists were not able to excavate everything in time, but they know there are more rooms and a possible villa owned by the Sulpicii family. If these also contain frescoes, then they will remain hidden for many more years.

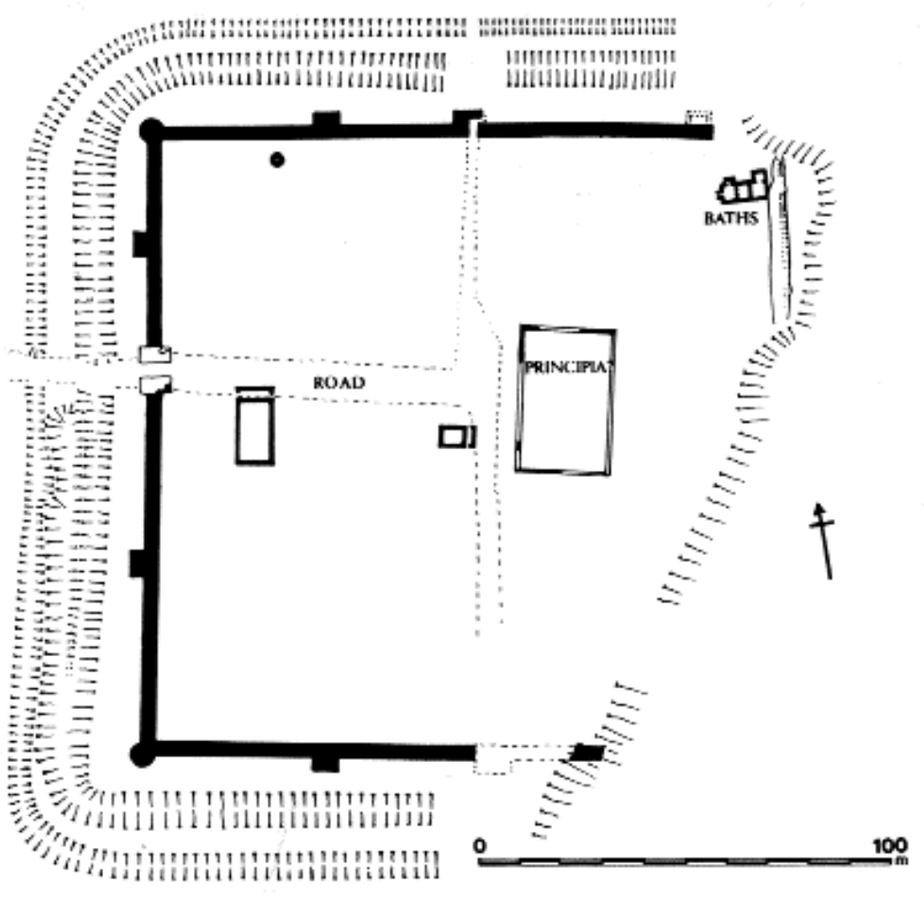
NEWS

Martin Millett to Head up a New Survey of Richborough in Kent

A new research design has been planned by Professor Martin Millett to look at Richborough and its environs. Prof. Millett, probably best known for his geophysical surveys around Ostia in Italy, told a recent seminar held in Canterbury, 'We want to involve all archaeological groups and organisations in the fieldwork which will take place over the next five years'. Although avoiding audience queries on the subject of funding, Tony Wilmott from English Heritage did reveal that fieldwork had started, providing some startling results from the geophysical survey on the site of the Roman amphitheatre. The results of this fieldwork will be published in the *Antiquity* journal.

Prof. Millett explained that the new project aims to look at the Roman site of Richborough in its broader historical, landscape and environmental context. New fieldwork is designed to address a number of research objectives, which will include enhancing our knowledge of the Roman settlement surrounding Richborough fort, and of the Iron Age and early medieval settlement in the area. Work will also be undertaken on locating its commercial harbour facilities, its Roman road network linking it with the rest of Britannia and the maritime connections with Gaul. It is envisaged that the work will be a collaborative venture and will result in the publication of reports with all data made available on the SMR.

Prof. Millett said: 'We are seeking to interest a range of local organisations in involvement in the project, and until our plans are finalised our research strategy has to remain sketchy.' Tony Wilmott said: 'I would like to hear from all interested parties who would like to become involved in the project; all they have to do is get in touch with either myself or Martin Millett.'

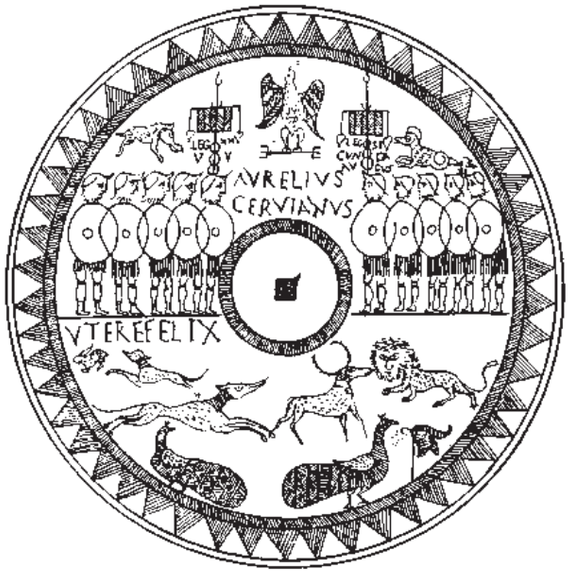


The plan of the fourth-century remains at Richborough show the final phase of development on this important site. Situated on a small hill overlooking the Wantsun Channel, Richborough was settled by the Romans from the time of Claudius. Initially developed as an army supply base, it was the main official entry point into Britain, with its own triumphal arch and the great road, now called Watling Street, leading inland to London and beyond. By the third century, the threat of invasion meant that the arch was fortified and turned into a lookout post. By the end of the third century, all this was cleared away and the stone walls of the Saxon shore fort built in its place. Large numbers of coins found within the fort suggest occupation well into the fifth century.

NEWS

Richborough's Last Legions?

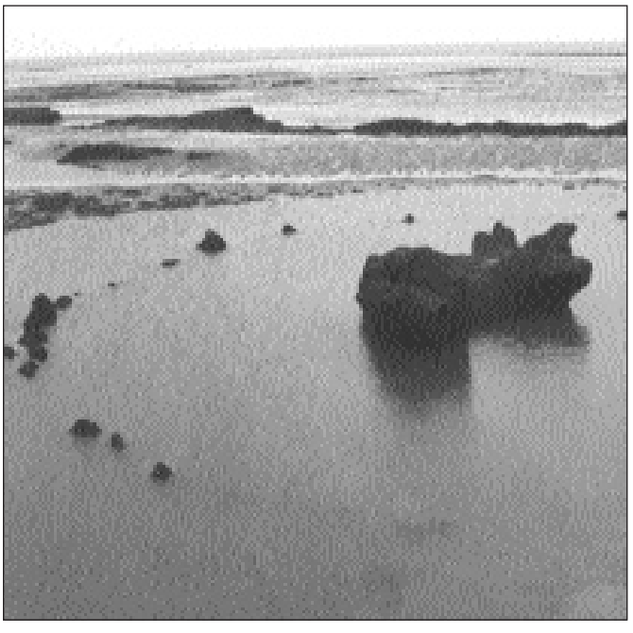
Recent research on a piece of presentation plate found in a muddy French field in the seventeenth century may hold the key to the last Roman troop dispositions at the Saxon shore fort of Richborough. The circular bronze plate is engraved with an elaborate pictorial design which shows two lines of late-Roman legionnaires facing one another and labelled left to right, LEG. XX VV (20th Legion) and LEG. SECUNDA AVGUS. Centred between them is an eagle and on each side are the legionary standards and their respective badges, a boar and a hippocamp, together with the name AVRELIVS CERVIANVS. Below the soldiers of the 20th Legion is the injunction VTERE FELIX ('Make happy use of this'). This shows that the object was a formal piece of presentation plate, presumably given to Aurelius Cervianus by the combined officers' messes of the two legions.



The circular bronze plate, first published in 1698, and now in the Treasury of the Bibliothèque Nationale in Paris. It shows two lines of Roman soldiers facing one another. On the left is the label Leg XX V(aleria) V(ictrix), which had its base at Chester until the late fourth century. The Leg. Secunda Augusta (right) was at Caerleon until it was moved to Richborough some time before the fifth century. There is no evidence that the two legions were ever quartered together, except possibly in the circumstances surrounding the final evacuation from Richborough.

Update on Seahenge

The fate of Seahenge has become one of the most controversial cases in recent years for all those interested in archaeology. While the future of the excavated oak ring found on a beach in Norfolk hangs in the balance, another ring was found in January. There is still no report on the first ring, apart from the date the trees were cut (early



summer 2049 and 2050 BC) and there has been no funding for long-term conservation and display; English Heritage paid only for the excavation.

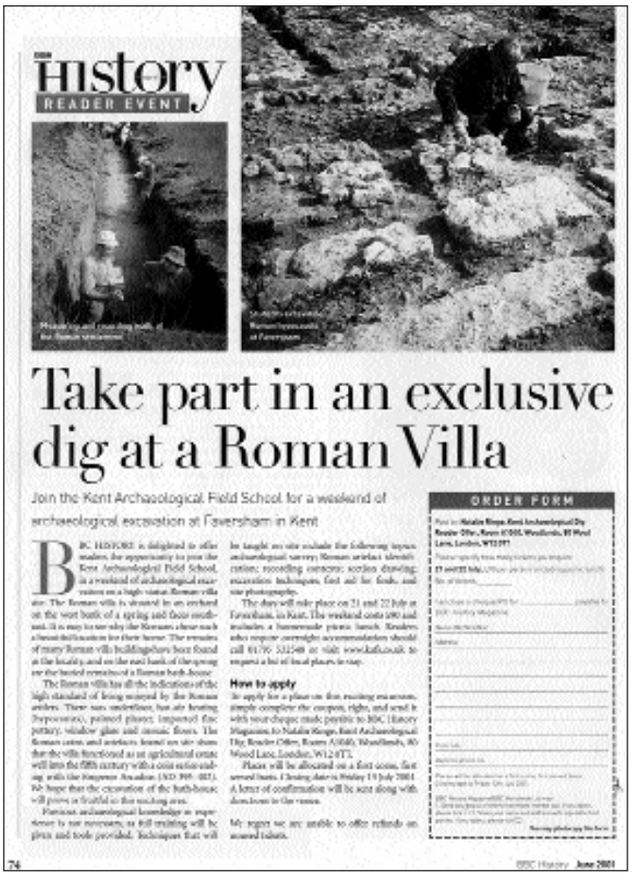
The sole solution proposed has been to re-bury the timbers after the wood has been studied. This suggestion has been criticised, not just because the public will be unable to see these unique posts, but because reburial may not conserve them. Is this a chance we are prepared to take, and what of the second ring? English Heritage have decided not to excavate, but to leave the timber to decay on the beach. Surely the possible destruction of all this evidence is not really an option.

As Mike Pitts, author of *Hengeworld*, has said in *Current Archaeology* '...the public need to be told that Seahenge — not just a ring of posts but part of an ancient landscape...is an extraordinarily important relic from our remote past....Burying it under the beach will not silence the controversy.'

Field School News

The courses at the Kent Archaeological Field School have been even more successful than usual this year. Building on the work of the previous three years, we have been making such exciting discoveries that we have decided to keep you informed of them in this new section. It should help regular visitors to keep abreast on what has happened on courses they have missed and update all readers on the latest work at the school. We will explain any further developments made after the end of the courses.

BBC History Magazine advertised a weekend of archaeology to their readers at the Kent Archaeological Field School. Over a hundred people applied and the Field School organised a busy weekend at Deerton Street. The event was a resounding success and will be repeated next year.


BBC History
READER EVENT

Take part in an exclusive dig at a Roman Villa

Join the Kent Archaeological Field School for a weekend of archaeological excavation at Faversham in Kent

ORDER FORM

Excavation of a Medieval Palace

Geophysical survey of the area around Teynham church located an important range of medieval buildings. During the Easter weekend we dug in the areas identified by geophysical survey and found a range of medieval buildings. These, added to those found last year, make a large complex. The report on the pottery found is on pp.16-19. Other finds include a rare and important Anglo-Scandinavian bronze pin dated by the British Museum to the fifth century. The geophysical survey is now almost complete and will enable the report to be completed on this important Roman and medieval complex.

The Study of Roman Roads

This bank holiday course enabled students to unravel the age-old problem of the route of Watling Street from Canterbury to Richborough, see pp.14-15. Not only was the route located and planned, but another Roman road was discovered

Field School News

The bath-house attached to the Roman villa at Deerton Street was excavated (left and below) for three weeks in July. Over 70 people from all walks of life attended the dig, many of them digging for the first time. The bath-house was found to be in excellent condition with brick hypocaust towers still standing and with the Roman soot still adhering to them. This was KAFS's third year of excavation at Deerton Street. Much of the villa site has now been examined, but plenty more lies beneath the orchard and surrounding fields. Some people found the experience of trowelling around a still-standing Roman building strangely moving and extended their holiday to stay with the dig to the last day.

leading from Littlebourne to Wickham (now called Wickhambreux). Wickham's name is of course derived from the Latin loan word *vicus* which means there was a Roman settlement there. The group then went on to find a hitherto unknown Roman building complex, possibly a temple or villa, in north Wingham. Needless to say, the name of Wingham may mean 'homestead of the shrine or temple people'!

Since the course, another previously unknown Roman villa has been pin-pointed at Sharsted. Again, place-name studies tell us that the Anglo-Saxon settlers, on finding masses of Roman pottery sherds on the villa site, named it 'Sherdstead' or 'Sharsted'.

Excavation of a Roman Bath-House

The Roman bath-house attached to the Roman villa at Deerton Street was excavated over three weeks, following our work on the villa in previous years. The bath-house was in excellent condition with sooty Roman brick hypocausts still standing, along with apsed walls and *opus signinum* tesselated floors.

Field School News

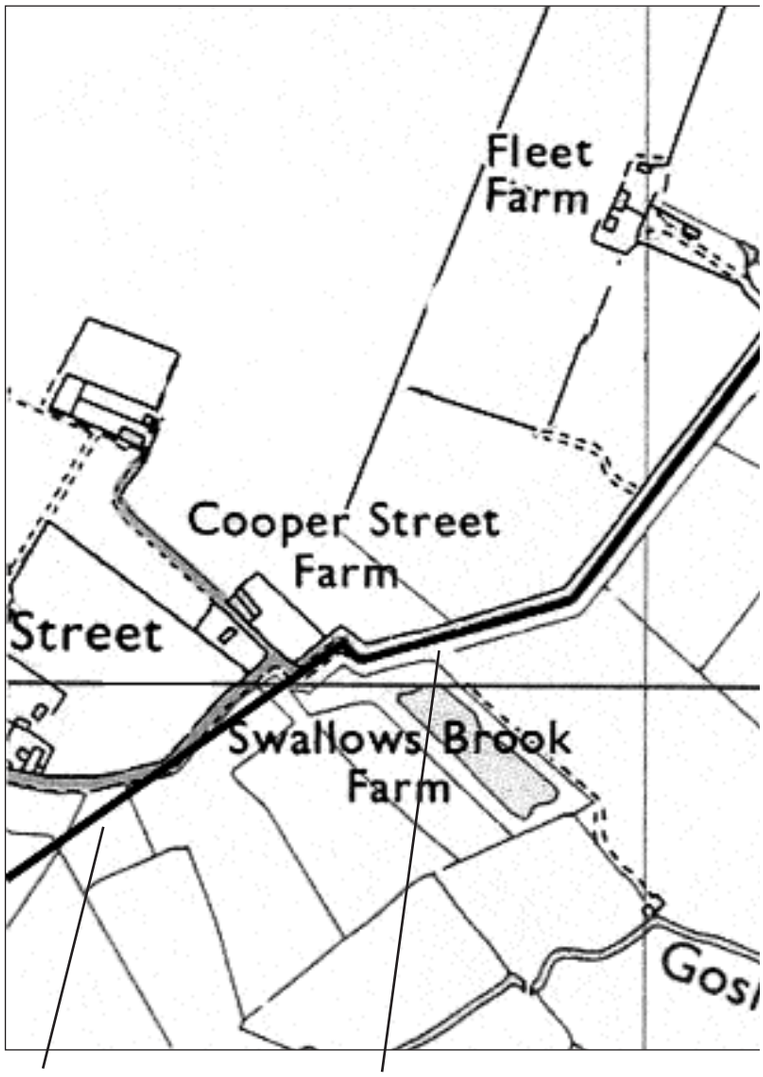
Richborough Roman Road Located

Students from the Kent Archaeological Field School spent three days in the field this May locating and recording the Roman road system from Canterbury to Richborough. They also found evidence to suggest that the location of the large Roman commercial harbour attached to Richborough was to the east of this road.

Dr Paul Wilkinson, Director of the Field School, had found, whilst recently working with a BBC 2 film crew, what seemed to be the original Roman surface of Watling Street situated between a row of council houses just outside the fort.

Limited excavation by students has proved the road surface is of Roman material. Found in the road's make-up were numerous pieces of Carrara marble, Roman quern stone fragments, and wedged between the flints and Roman building tiles were numerous sherds of Roman pottery.

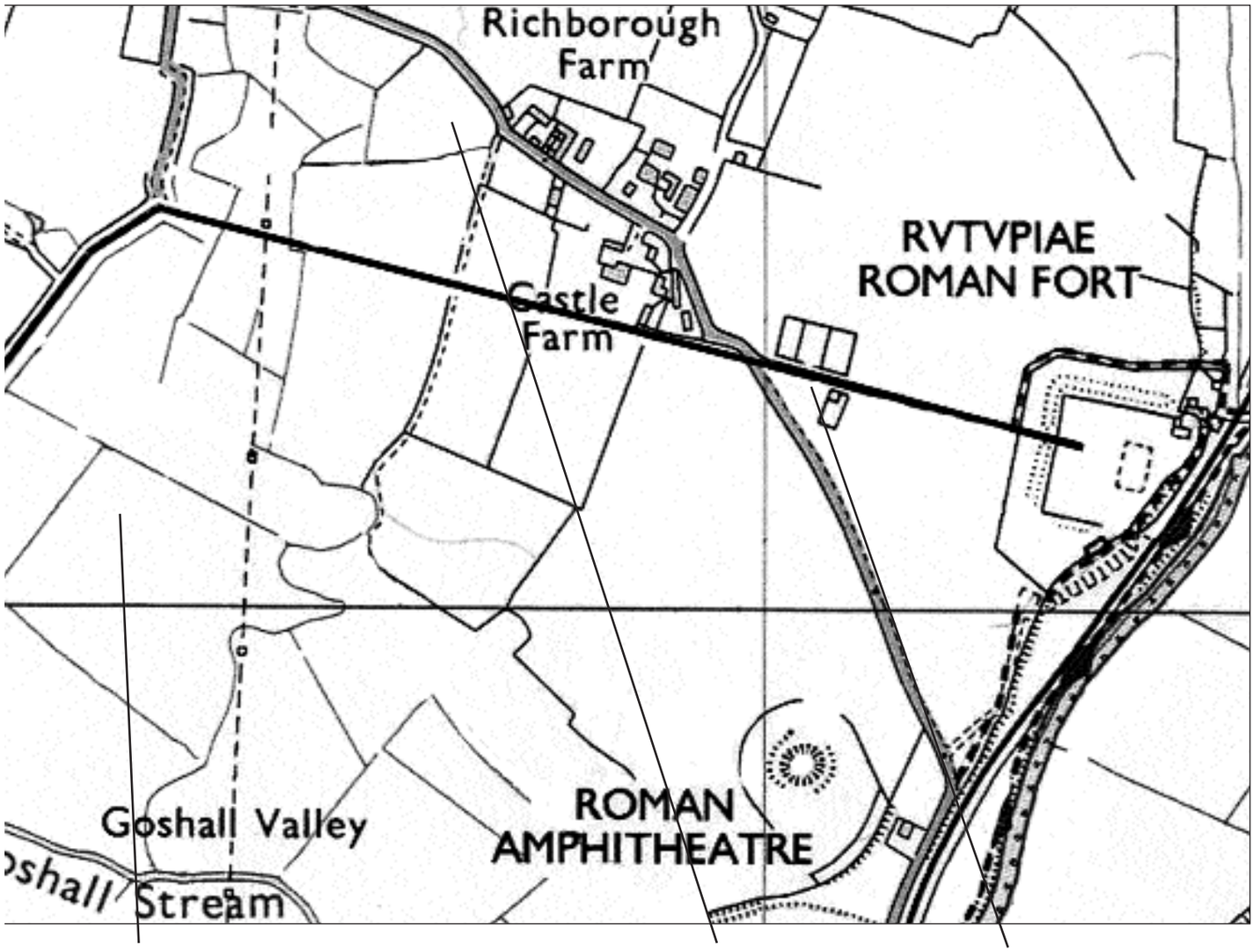
A student from the Kent Archaeological Field School recording the kerbstones of Watling Street outside the Roman fort at Richborough. The modern road surface curves to the left, but the Roman road continues in a straight line across the fields to join with the causeway. The Roman road is only 12 feet wide which may suggest the main commercial activity was elsewhere.



The Roman road to Richborough leaves Ash and travels in a straight line to Cooper Street through the Europa Nurseries. The route of the road has now been identified by a raised agger. At Cooper Street the road continues in surveyed straight sections changing alignment where necessary. This portion of the road follows the ancient coastline and is, in effect, a coast road.

Field School News

Few Roman ships have been recorded in Britain, but some are portrayed on Roman coins. If the ship shown on the Arras Medallion (left) is applicable to Britain, then it may show the type of craft possibly buried at Richborough harbour. The medallion was struck in c.296 to commemorate the recapture of Britain from the Roman usurpers Carausius and then Allectus, both of whom relied on seapower to hold Britain for ten years. The scene seems to show a grateful London receiving the liberator Caesar Constantius who is travelling up Watling Street with the Roman fleet keeping pace along the waterways leading to London. This waterway started at Boulogne or the Rhine, crossed to Richborough, then used the Wantsun and Swale channels before joining the Thames at Hoo. The route was completely tidal, so ships could use the tide to travel to London, and back again.



The vast Roman anchorage is probably situated to the east of the Roman road and the road utilised for loading and unloading. Fleet Farm, just to the north of the probable anchorage, confirms that the area was once under water. The name of the farm can be traced back to AD798 when it was called 'Fleote Ferme' which means 'the farm by the estuary, or inlet of the sea'.

Just north of the causeway is a small man-made inlet, or harbour, surveyed by students of KAFS. It would have allowed shipment of water for Roman ships. The only spring in the area is located here.

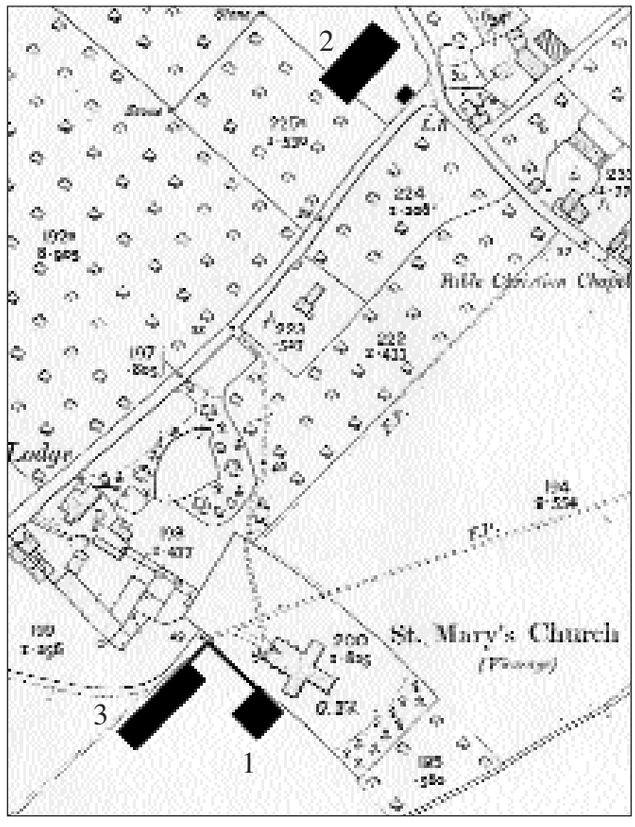
After the road crosses the causeway it carries on in a straight alignment passing between Castle Cottages. It is here that a surviving Roman road surface can be found.

Further Investigations at Teynham Palace

Excavation by students of the Archaeological Field School last year revealed medieval buildings associated with the Archbishops of Canterbury. John Cotter of Canterbury Archaeological Trust has written a report on the pottery at the sites. This year, further work has revealed another range of buildings possibly dated to c.1200.

Last year, excavation at two sites in Teynham (marked 1 and 2 on the map) exposed the foundations of two separate medieval buildings associated with the Archbishops of Canterbury. This year, a geophysical survey revealed a further range of large buildings (3 on the map), located around the church of St Mary at Teynham. Excavation, based on the survey, found stone-built, high-status medieval buildings some 200-foot long.

Some re-used Roman building material was also found, but it is unlikely that this came from a villa. The geophysical survey also failed to reveal any traces of the usual Roman buildings associated with a villa. It is possible that the Roman building on this site was a temple. The church itself contains a large amount of re-used Roman building ceramics, including monumental drip-stones and lumps of Roman flooring material, *opus signinum*. The church's location, on a mound with views to the Roman Watling Street and the small (Roman) port of Teynham, suggests it is the site of a Roman temple and not a villa.



The map shows the location of the two sites, one, next door to the church (1) and excavated in the 1970s by a Kent Rescue Unit, and the other found by fieldwork and excavated by the Kent Archaeological Field School on the road leading to Conyer Creek (2). A further range of medieval buildings (3) has now been located and excavated by the Field School to the south-west of the church.

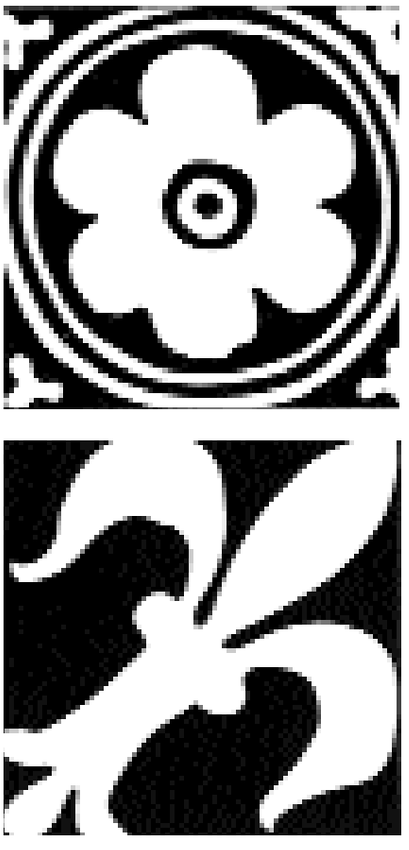
Although the Roman site needs more work, the pottery found last year has revealed a great deal. A report (below) by medieval pottery specialist, John Cotter, suggests that the Palace site (2) and the Church site (1) were in existance at the same time.

Pottery Report

A combined total of 210 sherds (2.881kg) of pottery was recovered from the two sites, most of it medieval and post-medieval. Small amounts of Iron Age and Roman pottery occur residually on the church site, as does a single Anglo-Saxon sherd of the 5/6th century. Neither site produced any ceramic evidence for later Saxon occupation nor any definite evidence for 11th century occupation (an observation supported by the virtual absence of early medieval Canterbury sandy ware — the typical 11/12th century ware of this area). All the 'early medieval' wares present appear to date from the very end of this date-range, i.e. after *c.*1175 or 1200.

Shelly wares are the dominant early medieval type on these sites and probably persisted locally

until as late as *c.*1250. At Canterbury they became defunct some time before this — probably by *c.*1225 — due to the domination of Canterbury/Tyler Hill sandy wares. The shelly wares at Teynham, mainly cooking pots, were probably made locally somewhere near the north Kent coast. The shell inclusions differ somewhat from those at Canterbury, which was probably supplied by a more easterly source. As at nearby Iwade (to the west) and Faversham (to the east), Tyler Hill ware is the dominant pottery type of the 13–14th century. This comprises mostly utilitarian glazed jugs, but the Palace site at Teynham also produced a fragment of a Tyler Hill louver — an elaborate type of chimney pot or roof ventilator — suggesting a building of some substance. Tyler Hill wares were supplemented by glazed fineware jugs from the London area. Although Teynham lies only some 11 miles west of Canterbury, some of the medieval and particularly the late-medieval pottery types at Teynham are virtually unknown in Canterbury. These later pottery types almost certainly come from Wealden sources such as Maidstone and the Medway area. These include jugs and storage vessels decorated with white slip painting and undecorated coarsewares from the early 16th-century kiln at Hareplain near Biddenden. On both sites at Teynham much of the medieval and late-medieval pottery (mainly 16th century) came from residual or mixed contexts containing later pottery.



Medieval floor tiles from the Tyler Hill workshops just outside Canterbury. An excavation on a Tyler Hill kiln was undertaken by 'Time-Team' in August 2000. There are plans to continue the investigation and publish a report.

Floor Tiles

A combined total of 37 fragments (3.120kg) of medieval floor tile was recovered from both sites. In general the assemblage is very fragmentary and in some cases very abraded (post-use). Some pieces may have been re-used as building rubble. Most comprise edge or corner fragments. In only one instance did a tile survive with two corners, thus allowing the original length of the tile to be measured. Floor tiles fall into the following groups based on physical characteristics:—

Group 1. Decorated Tyler Hill products (seven fragments). Minimum seven tiles. Hard, red sandy fabric with bevelled edges and sanded undersides. Decorated with stamped designs inlaid with white slip. Clear glazed. Made at Tyler Hill near Canterbury during the period *c.*1285-1325. References given here are to Mark Horton's tile report from St Augustine's Abbey, Canterbury (Horton 1988).

Most of these are from the Teynham Palace site. The majority are 16–17mm thick and are thus likely to belong to the late stage of production during the early 14th century (Horton's Group B2). Only one tile is 21mm thick and thus corresponds with the earlier (B1) products. Identifiable designs are of the commoner Tyler Hill types including at least two with simple chevron designs (Horton 1988, fig. 46.45), three with fleur-de-lys designs (ibid., fig. 44.16) and one with a possible daisy design (ibid., fig. 44.17). One other tile chip may bear a different design, possibly foliage (Church context 101). One of the fleur-de-lys tiles has been cut diametrically to form two triangular tiles. This is a common feature of Tyler Hill tiles, the tiles being snapped along a cut made prior to firing. Triangular tiles were used as fillers in larger decorative tile schemes, or along the edges of tile pavements. Maidstone Museum houses a collection of decorated floor tiles from Teynham church, assembled in the 19th century, and includes many Tyler Hill examples.

Group 2. Plain Tyler Hill tiles with white slip and green glaze (one fragment). The upper surface is covered with a white slip under a green copper-stained glaze 20mm thick. Probably late 13th century/early 14th century (ibid., 154, group B1). Palace site.

Group 3. Plain Tyler Hill tiles with dark brown glaze (ten fragments). Most of these are between

16 and 18mm thick, suggesting an early 14th century or later date. Some have an over-fired late-medieval-looking fabric and one has split horizontally in the kiln and is probably a 'second'. The side length of one tile is measurable at 118mm. Two examples have been cut diametrically to form triangles. Mostly they are from the Church site.

Group 4. Decorated floor tiles. Source unknown (seven fragments). Minimum five tiles from the Palace site only. These are superficially similar to slip-decorated Tyler Hill tiles but are thicker (20–22mm) and less sandy. The clear glaze is glossier, pitted and reduced pale green in places. The designs are too fragmentary to be intelligible, but do not seem closely to match any of the commoner Tyler Hill designs. Two corner fragments have slipped borders; one retains part of a serrated motif (a bird wing, or an antler?), the other may show part of a fleur-de-lys. Another corner fragment shows part of a curved, possibly circular or shield-shaped, motif filled with either radial or diametrical curvilinear lines. A smaller fragment may show part of a chevron design. These do not seem to match any of the decorated tile groups from St Augustine's Abbey, but the thickness and fabric description resemble an unsourced group of floor tiles known from the Maison Dieu at Ospringe and from Davington Priory, both near Faversham. They are dated there possibly to the mid– to late–13th century (Ospringe Group 2 tiles: Horton 1979, 121-2). However, only direct comparison with the Ospringe tiles would establish this identity beyond reasonable doubt.

Medieval floor tiles, slip decorated in two colours and made at the Tyler Hill workshops. Square tiles, of sides 116–118mm long. The glaze is dark yellow, occasionally pale green.

Group 5. Plain white slipped green-glazed Flemish-style tiles (seven fragments). Church site only. Minimum five tiles. Probably English (local?) rather than Flemish. These mostly have a sandy brick-red fabric with a grey core. The edges are slightly bevelled. Thickness is mostly 20mm, one example is 25mm thick. One example is cut diametrically. With the plain brown tiles, from Group 6, these were laid in a chequerboard arrangement. Date late medieval, most probably 15th to early 16th centuries.

Group 6. Plain brown glazed Flemish-style tiles (three fragments). Church site only. Minimum three tiles, 21–23mm thick. One example cut diametrically. 15th to early 16th centuries.

Group 7. Plain Flemish green glazed tile. One very abraded example from Palace site only. 30mm thick. A genuine import with the typical fine 'sugary' sandy orange-red fabric of these commonly imported Flemish tiles. Late 14th to 16th centuries.

Group 8. Plain unglazed 'quarry' tile. One fragment only. Palace site. Post-medieval.

Pegtiles

Pegtiles, with a total of 40 fragments (2.634kg), were recovered from both sites:—

Type 1. Medieval pegtiles (3,000 fragments). These form the majority of pegtiles recovered and probably date from the 13th century through to the 16th centuries. They have a red sandy fabric, though some have been overfired/reduced to a dark grey colour. Some are partially clear (brown) glazed on one side only and one example has a green copper-flecked glaze (Church site). Peg-holes are round. The collection is too fragmentary to recover original tile dimensions but in one case the whole end of a tile survives giving a width of 140mm. The tiles vary in thickness from 10 to 14mm with 13mm being average. One unusual thicker tile in a finer sandy unglazed fabric was 17mm thick (Church site).

Superficially, the majority of tiles are very similar in appearance to Tyler Hill pegtiles, but they could just as easily have been made locally from similar-firing London clay sources. It is known, for example, that a large tile-making industry existed in the Faversham area during the 16th century.

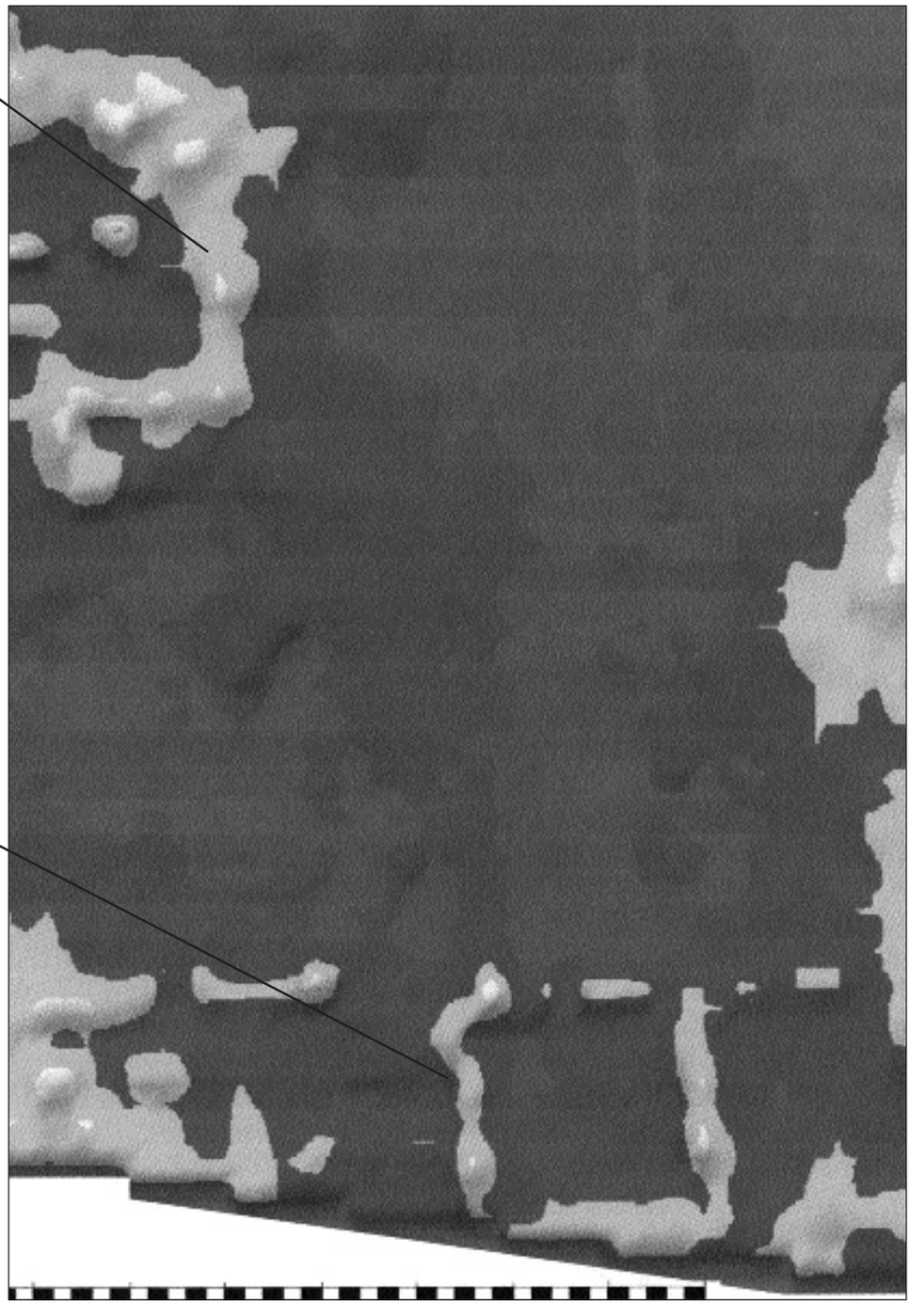
Type 2. Post-medieval pegtiles (three fragments). Distinguished by the presence of

square peg-holes and finer sandy unglazed fabrics, either red or pink-buff.

Type 3. Late-medieval white pegtiles? (seven fragments). From a minimum of three tiles (two Church site, one Palace). These have a fine sandy, rather pasty, cream or pale pink-buff fabric with cream-coloured surfaces. They have round peg-holes and are 13–15mm thick. Their association in the same context with Tudor pottery (mainly *c.*1475/1500–50) suggests they date to this period. Given their rarity, it is possible the tiles were used for decorative purposes — perhaps to create patterns when set amidst the more usual red roofing of the period. White pegtiles are generally quite rare in Kent. They are slightly commoner in the 18/19th centuries, perhaps coming from the Aylesford area where pale-firing clays were exploited during the 19th century for chimney pots etc. However, medieval examples are known from a moated site at Parsonage Farm, near Ashford, and some late-medieval pottery types of suspected Ashford origin are also quite pale firing — possibly made from locally occurring Wealden clays.

The remains of a substantial medieval building (1) were exposed during farming operations in the 1970s. Archaeologists recorded the building but have not as yet published a full report. Re-excavation was undertaken by the Field School to obtain dating material. Pottery found in context dates the structure to the 13th century. There are late Iron Age ditches under the medieval building.

A geophysical (resistivity) print-out of an area south-west of Teynham church by David Pendleton, Karen Roberts and Robin Grimes. It shows a buried range of stone buildings (3) extending some 70metres by 18metres. Excavation uncovered substantial chalk and flint foundations 90cm wide with large amounts of re-used Roman building material incorporated in the surviving foundations. A bronze pin found in an unstratified context between foundations has been dated to c.700. The roof tiles and slate found in large quantities in the latest levels suggest a 13th-century date for the building. The buildings, designated of national importance by English Heritage, have been made secure by the new owners of the orchards.



The Evidence for Christian Worship in Late Roman Britain

Last October more than 100 people attended a conference on cult and ritual organised jointly by the CBA South East and SCOLA. One of the papers was by Dr Paul Wilkinson on pagan and Christian worship and is the basis for this article.

In pre-Christian Roman Britain there was a great diversity of religious cults available at every level and for all tastes. The native Celtic deities of the land were recognised and Celtic rites and rituals were attended even by strangers to Britain.

The early Celts worshipped the powers of nature; their deities were somewhat different from the gods of the classical world. The Romans tended to equate Celtic gods with their own, but it is significant that the identification was not always consistent. These Celtic gods had neither the same attributes nor the same fields of action and influence as their classical counterparts. With the coming of Rome, Celtic deities took on the attributes, appearance, and personality of the Roman gods, a conversion known as, *interpretatio Romana*. In Gaul, the names of 400 deities are known, in Britain somewhat less.

The Chi-Rho monogram reconstructed from thousands of fragments of Roman plaster from Lullingstone Roman villa.

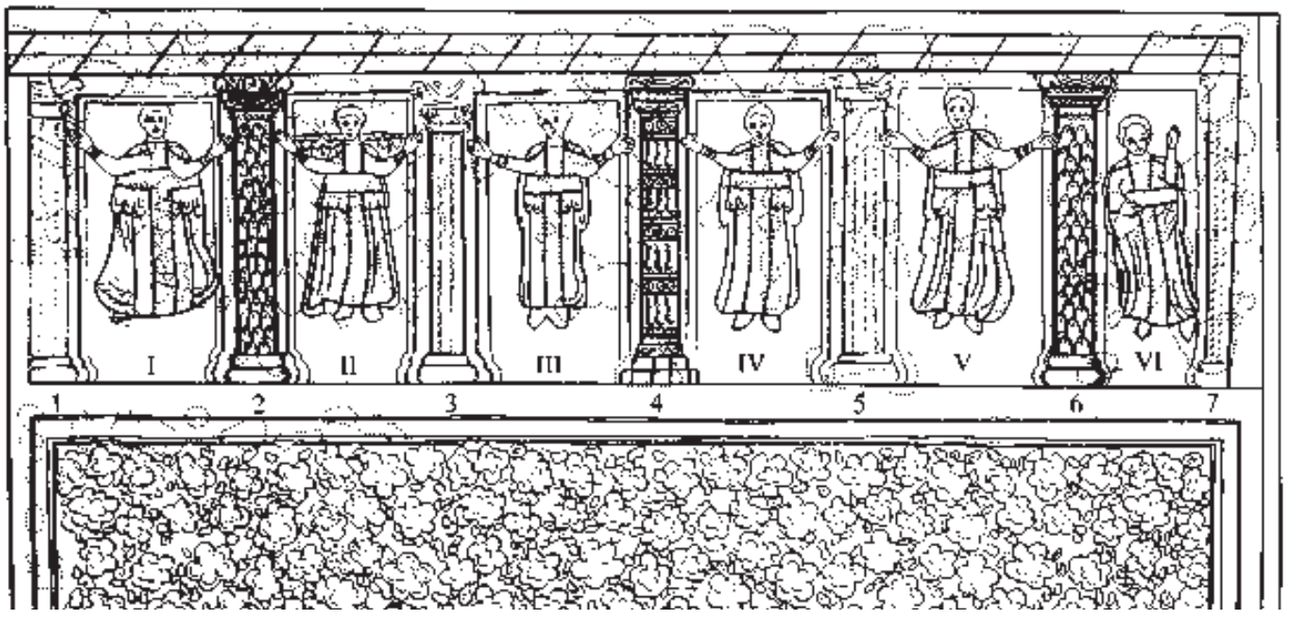
There is no doubt that religious practice tends to be conservative, and in Roman Britain many primitive Celtic cults and customs continued to be observed side by side with the newer modes of Roman worship. The temples themselves are stereotyped in the main; a few wealthy and outstanding cults had temples of classical design, as at Bath, or of an even more exotic style, as at Lydney. In the civil zone of Roman Britain the majority of temples were of the much smaller Romano-Celtic type where the small square shrine is surrounded by a square ambulatory or portico. Like the classical temple, it was not intended for congregational worship; people made their vows individually, and if crowds assembled on festival days they did so in the open air, or in theatres or open-air amphitheatres, such as at Gosbecks Farm, near Colchester, or Lydney.

These native Celtic deities continued, throughout the Roman period and even through to the early Middle Ages, to survive alongside Christianity. The Roman gods and the Imperial Cult introduced to Britain a loyalty to Rome, and also imparted a sense of unity within a world-wide empire. Both groups of cults were on the whole impersonal, they called for observance rather than devotion; the gods answered prayers and vows, but did not call for the soul's allegiance. This last aspect, and the insistence upon codes of conduct, was the contribution of eastern cults, and of these the most important was Christianity, since in due course this became the state religion of the Roman Empire.

Christianity was probably introduced to Britain as early as the second century, for Tertullian, writing in the early years of the third century, said that, 'parts of Britain inaccessible to Rome have been subjected to Christ'. Tertullian's evidence is supported a few decades later by Origen. That Christianity reached Britain before the time of Severus is possible, because in 208 or 209 St Alban

probably became the first British martyr. By 314, when the Council of Arles assembled, the Christian church in Britain was well established. Three British bishops, a priest and a deacon attended the council and Professor Mann has suggested that the bishops and deacon represented the four known Roman provinces in the Britain of the day.

In 359, three out of the 25 British bishops attending the Council of Arminium were so poor that they accepted the offer of Constantius of free transport by the imperial posting system. By the end of the fourth century it is probable that Christianity had made considerable progress. By the early fifth century the evidence for Christianity becomes richer by the emergence of historical British Christian personalities such as Pelagius, Ninian and Patrick. When, in 429, St Germanus met the gathering — *immensa multitudo* — in Britain, it points to a cult making headway as a popular movement.



The reconstruction of the west wall of the Christian house-church at Lullingstone Roman villa shows six Roman figures dressed in the robes of the late Empire. The garments — long flowing coats, edged with beads, caught up by wide sashes of embroidered cloth similarly bordered, the sleeves tightly fitting with bands sewn on like bracelets, and with great roundals on the shoulders, beaded and intricately designed — all this reflects an age of ostentation and wealth. It may be that dress like this was only associated with religious ceremonial. Beards are no longer worn and the orange hair is wavy and swept back from the brow. The facial features suggest we are looking at one Roman family, maybe our only surviving portrait of the people who once lived at Lullingstone Roman villa.

Lullingstone Villa

But what of the archaeological evidence? Let's start with the Roman villa at Lullingstone. Excavation by Lt-Col Meates began in 1949 and continued for about 13 years. One of the discoveries was a room deep underground, filled with the collapsed debris of the room above it. This debris consisted not only of the walls above, but also of the painted plaster from those walls. Although now reduced to thousands of fragments it was possible to reassemble some portions. This revealed that the decorative symbols were Christian and that the room had been devoted to Christian worship. The west wall was decorated with a fresco of a roofed colonnade upon a flowered dado, with Christians standing between the columns attired in the rich beaded robes of the very late fourth century, and with their arms outstretched in the attitude of prayer. These figures are thought to depict the Roman family who lived in the villa; they are of both sexes and are both young and old, and they all have the same distinctive red hair. One of the young men has a curtain falling behind him, and if we look at religious symbolism elsewhere, it seems to denote that the young man has died, and the curtain suggests the change from this life to an eternal paradise. The walls of this room include two Chi-Rho diagrams, red on white, and surrounded by wreaths of flowers and fruit. Both

are some 3 feet in diameter. One is located upon the south wall, the other recessed centrally in the east wall towards which the Christian worshippers prayed.

An antechamber or narthex led into this house-church, and on its wall there had been painted another large Chi-Rho, as large as those in the church, the monogram red upon a white background, surrounded by a large wreath of flowers and fruit. In this case, however, with the Alpha and Omega occupying their usual places between the spreading arms of the Chi.

The outer wall of the villa had had a new doorway fitted so that people living outside the house could attend Christian services without entering the main part of the villa.

The wall painting of the Roman figure (left) from Lullingstone is facing east, and in the attitude of the 'Orante', or Christian at prayer.

Cleaning the Roman mosaic floors (above) at Lullingstone Roman villa. It has been suggested that the mosaic has a hidden Christian meaning.

Coins found beneath the Christian complex show a much later coin series than the rest of the villa. They are dated AD 379 to 423 and 395 to 408, and are very worn by use. So we may date the Christian church from the end of the fourth century and into the first decades of the fifth century.

Above, in the pagan area of the villa, we have an intriguing mosaic. The fourth-century mosaic in the dining room carries an inscription in Latin. Dr Martin Henig has suggested that the name of Jesus or IESVS is concealed in the second line. Also note that two lines begin with 'I' and both end with 'S'. 'I' can be taken as the first letter of Jesus or Iesus, and 'S' as the first letter of Soter, a Latin transliteration of the Greek word for Saviour. Even the mosaic panel featuring Bellerophon and the Chimaera certainly carries a Christian message, as can be seen in the Christian mosaics at Hinton St Mary and Frampton in Dorset.

Below the Christian church at Lullingstone there was a deeper room dedicated to the three water-nymphs; the three pagan spirits are shown in human form in a painting on the south wall, and with a well for the supply of holy water just in front of them. So this deep room was a place of pagan ritual whilst above it, and at the same time, was the Christian house-church. We have no way of knowing when the villa and the associated church went out of use, but it certainly survived into the fifth century. After it was destroyed the memory of worship continued, because a small Anglo-Saxon Christian church, certainly dated before the seventh century, was built on and aligned to the tomb chamber of the temple mausoleum. It uses Roman building materials from the decayed temple. It is worth remembering Pope Gregory's words in 601 to the Abbott Mellitus on his departure to Britain: 'We wish you to inform Augustine that we have come to the conclusion that the pagan temples are not to be

destroyed, but cleansed with holy water, altars set up in them, and relics deposited.'

Stone Chapel

We will now turn our attention to the ruined church of Stone, just to the west of Faversham. The ruins lie in a copse some 100 metres north of Watling Street and just below the hill of Syndale, which may be the lost Roman Town of Durolevum; certainly excavation has exposed sections of Roman military earthworks dated by pottery to the period of the Claudian invasion.

The ruins at Stone were noted by Hasted in 1782 as containing Roman remains. In 1874 a detailed report was prepared by J T Irvine who wrote that it was 'to be far too Roman to be Roman', and suggested that it was Norman work of about 1072. The Kent Archaeological Society excavated the site in 1966 and 1967. Their findings indicate a Roman building of about 20 feet square, attached to an Anglo-Saxon and medieval church. It was buttressed, but without any evidence of an external ambulatory. The buttresses on the north and south sides may indicate a barrel-vaulted roof, and although the excavators noted the absence of fallen Roman roof tiles and suggested thatch, I am glad to say that field walking has retrieved sufficient Roman building ceramics to suggest that the roof was roofed in tile. The entrance to the Roman building is centrally placed in the west wall and still has its door jamb in position. On excavating the interior were found alongside the east wall a free-standing Roman altar or podium, with vertical faces of plaster painted the same colour red as the rest of the interior of the Roman building. Only one burial from the Roman period was found, an infant burial, found the level of the Roman foundation raft and has been radiocarbon dated to about 460.

Stone Chapel, west of Faversham along Watling Street, is a unique building. It is the only Roman religious building incorporated into an early Kent Christian church. It was only in 1966-67 that the Roman walls were recognised.

Most, but not all Roman pagan temples and mausoleums had the doorway on the eastern side with the altar outside, but all Roman Christian churches and chapels have the main doorway on the west facade with the altar abutting the east wall. These pieces of evidence indicate that the Roman building at Stone seems to have been a Roman Christian church from at least the fourth century, with burials continuing on into the fifth century. So, at the very least, at Stone we have a fourth-century Roman pagan mausoleum continuing through the fifth to the fourteenth centuries as a Christian church or, and even better, a Roman Christian mausoleum from the fourth century, continuing to the fourteenth century as a Christian church. This is, so far, the only evidence from Britain, of continuing worship at the same building from the Roman period into almost modern times.

There are, of course, other Roman Christian churches identified in the archaeological record, but for north Kent, the most important is the late-Roman church and baptistery at Richborough, on the north Kent coast.

Richborough

Of all the Roman sites in Britain, only at Richborough is there any real evidence for a continuation of use after 410. The church at Richborough has only recently been recognised. It was a timber-built apsed building with the entrance at the west end, and the altar located in the eastern apsed end. One part still survives, the baptismal font, which was in a separate room of the main church. The church's construction is late fourth century, continuing well into the fifth century. Certainly Romano-British forces were still in occupation at Richborough until about 446.

Interestingly, most Saxon shore forts went on to develop as Christian monasteries in the sixth and seventh centuries. At Richborough, St Augustine's chapel was founded in 597, but is in a separate location from the earlier Roman Christian church, which may suggest that the earlier church was still standing and then in use.

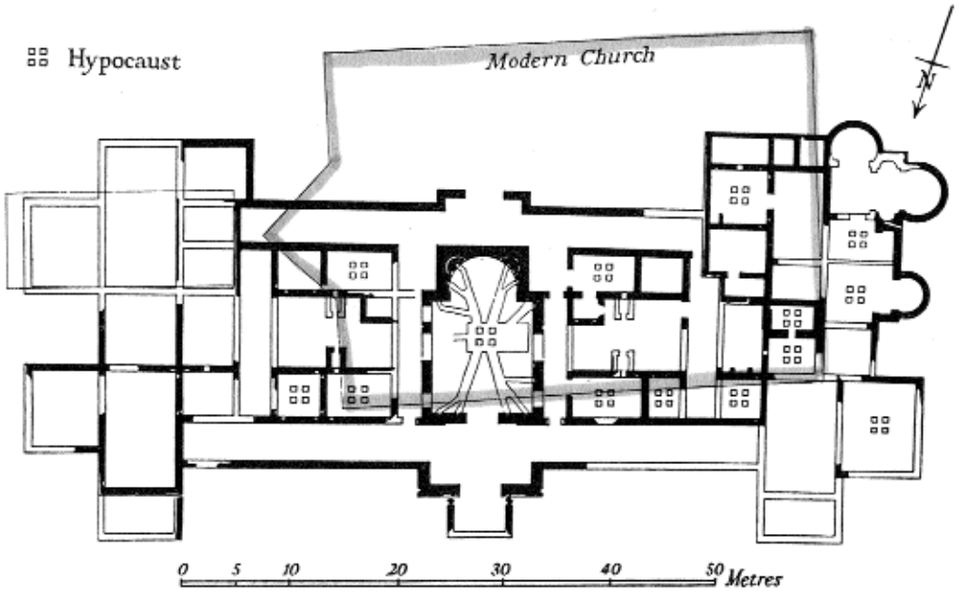
More Sites in England and Abroad

At Dover the church of St Mary, next to the Roman pharos or lighthouse, has undoubted Roman work in the Christian church. It is, in fact, built over a large Roman bath-house, and although often dated to the seventh century, there are clear indicators that the church encapsulates portions of an earlier Roman building.

A final word on villas — the discovery of Roman building material under churches, or in churchyards, is very common on the Continent, and is becoming more common in Britain. At Konz in Germany, the apse of the modern church matches exactly the Roman villa house-church. At Rivenhall in Essex, the church sits over the later Roman villa. At the Arnesp villa in France, there are no less than four temple buildings superimposed over each other, the earliest being fourth century and dedicated to Jupiter. In the late fourth century it was dismantled and a Christian mausoleum built on the site. The arrival of the Visigoths in about 418 heralded further change, and in the sixth century a new Christian chapel was built on top of the lot. The same scenario was enacted at Montcaret in Dordogne, where a sixth-century church is built on the same foundations as the house-church of this sumptuous villa. Closer to home, a Roman Christian church may have existed at the Otford Roman villa; the remains of a Chi-Rho symbol, painted in red on white plaster, of a similar size to that at Lullingstone, came to light in the 1970s.

At Newnham Church, just south of Faversham, over 22 Roman fluted columns of two sizes are built into the church fabric. Dr Tom Blagg, who has recorded only 12 other examples from Roman Britain, has suggested they are from a Roman pagan temple under the present church. At Milton Church, north of Sittingbourne, field survey suggests a Roman villa under the present building. At Teynham Church, Minster Church, Lower Halstow Church, Luddenham Church, Faversham Church, Goodnestone Church, St Martin's Church, and countless others in north Kent, the abundance of Roman building ceramics suggests that these churches were built over villas that that may have been used for Christian or pagan worship.

And finally, one of the most important and grandiose villas in north Kent has an Anglo-Saxon name which suggests the site of a Christian church, and that is of course Eccles.



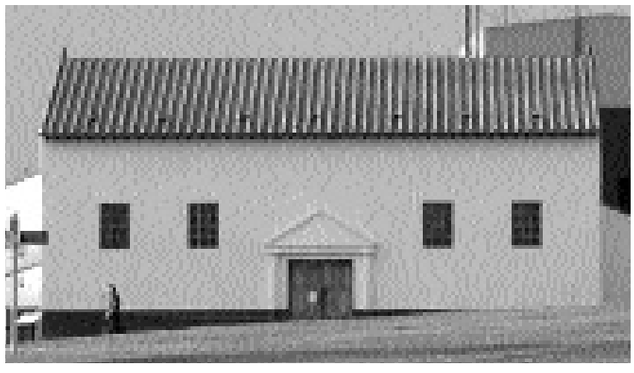
The discovery of Roman material under churches or in churchyards is very common on the Continent and not at all uncommon in Britain. A good continental example is the Roman villa at Konz in Germany (left). The villa, situated at the confluence of the Moselle and Saar rivers, retains a possible '-acum' name which means the name of the Roman estate has survived into the modern period. Some Roman villas became the focus of the Roman Catholic church or even the centre of a nucleated village retaining a memory in its place-name of the last Roman owners.

Very few classical fluted stone columns are known from Roman Britain, but built into the Anglo-Saxon fabric of Newnham Church are 22 examples in two sizes, 15 and 32cm in diameter. The stone used is Ketton stone, typical of the Roman period. The church sits on a spur overlooking Syndale Valley, and is a possible temple site.

The Roman Bath-House Reconstruction at Segedunum, Wallsend

David Ash Partnership describe making the only working replica of a Roman military bath-house in Britain. The heating and hot water system only uses a bag of coal a day!

Following two previously successful reconstructions, the West Gateway at Arbeia, South Shields, and a section of Hadrian's Wall at Segedunum, Wallsend, David Ash Partnership were commissioned for this unique project to reconstruct the only working replica Roman bath-house in Britain as part of the Segedunum Archaeological Park which forms part of the Hadrian's Wall World Heritage Site. In addition to the bath-house, there is a Museum and Visitor Centre and the remains of the fort are consolidated for public display.



The Roman replica bath-house at Segedunum, Wallsend. The roof tiles are exact copies of a Roman roof and manufactured in Italy where they are still used. The windows could have had double glazing and shutters to keep out the inclement weather. The vents in the roof are chimneys.

The brief was fairly straightforward, to reconstruct a working replica Roman bath-house. The remains of the bath-house at Segedunum have not yet been excavated (they are suspected to be located under a public house just adjacent to the site). But the Romans built their military baths on the Northern Frontier to fairly standard plans. So the decision was reached to base the reconstruction on the best preserved bath-house at Chesters Roman Fort, which is located further along Hadrian's Wall.

Architectural Research

In order to ensure that the building is as authentic as possible, a great deal of research was undertaken. The building plan at Chesters was accurately surveyed, and from archaeological research and the study of the plan, the various room sizes were identified as multiples of Roman feet (estimated at 297mm). During this process, it was discovered that the Roman surveyors made setting-out errors, possibly due to measuring down a steep slope. The corrected plan was worked up, compared with the survey and established as being historically correct.

Establishing the form of the building was one of the most challenging aspects of the project, and evidence was collected from a variety of sources. From archaeological investigations, it was known that the baths would have had vaulted ceilings; the surviving springing point on another site helped to establish the height of the rooms. Due to the directions of the vaults and the known pitch of Roman roofs, the building form followed. Window and door positions and sizes were established and, following constant dialogue with the archaeologists, the building details, features and materials were developed.

Building the Bath-House

The siting of the building was difficult as no construction was to be allowed within 25 metres of the remains of the fort walls. The site was, therefore, located on the fringe of the Archaeological Park perched above a disused

railway embankment overlooking Swan Hunter's shipyard and the River Tyne. The siting was also complicated by major electric main diversions and the discovery of colliery fill and shrinkable clay.

Before English Heritage would agree to any construction, a full archaeological dig had to be carried out to establish that there were no remains on the site that would be worthy of retention. In areas outside the footprint of the building, the archaeologists carried out a watching brief while service runs were excavated. When the new fencing around the site was erected, the archaeologists actually dug out the post holes and recorded any finds as the work progressed.

The Heating System

As the brief required the bath-house to function, much research and ingenuity went into the design of the hypocaust heating system together with the hot and cold water systems. A Roman bath-house is similar in operation to a Turkish bath with a series of rooms ranging from the frigidarium, the cold room containing the cold bath, through to the caldarium, the hot room containing the hot bath and schola labrum, with tepidaria in between. The heating to the various rooms is provided by means of the hypocaust floor. The hypocaust is a void created between two floor levels. The upper level, which is the finished floor slab, is supported on clay or stone slabs (*bipedales*) which in turn are supported on brick pillars built off the sub-floor slab. The floor void is heated by burning fuel (coal or wood) in a stoke hole or boiler chamber. The hot gases from the fire pass through the hypocaust, heating the floor above. A through draught is achieved by venting the floor void through roof chimneys. In the case of the hottest rooms, the walls and the vaults are lined with hollow clay blocks (*tubuli*) which are interconnected and allow the hot gases to heat the inside face of the rooms. There are vents between the rooms at hypocaust level to allow heat to reach other rooms, the hottest rooms being closer to the stoke hole/boiler chamber.

The hot bath backs on to the boiler room, virtually sitting on top of the boiler chamber. Water is heated in a copper cylinder which is directly above the fire. Hot and cold water are blended to the desired comfort level (the Roman's did not have measurements for temperature) and discharge through the wall into the hot bath. The bath is kept warm by the heat of the hot room, due to its location above the stoke hole and by means of a simple copper heat exchanger (*testudo*) which connects to the side of the hot bath and sits adjacent to the copper boiler above the fire. The bath can also be topped up from the hot water cylinder. Hot water also flows to the schola labrum, a water fountain. The hot water trickles over the edge of the stone basin and

The floors of a heated Roman bath-house are normally supported on short columns (pilae) *about 1 metre tall. This will allow heated air from the furnace to circulate around the bath-house. The pilae are usually made of 20cm square tiles* (bessales). *On top of the pilae 0.6-metre tiles called* bipedales *were laid. Opus signinum, a pink mortar mixture of crushed tile and lime, was laid on top of these tiles. The finishing touch could be a tesselated or mosaic floor.*

In the Mediterranean area baths were built with an open exercise yard (above). The Roman writer Seneca commented: 'When the more athletic bathers swing their dumbells I can hear them grunt as they strain, or pretend to, there's the refreshment man with his wide range of calls, the sausage vendor, the confectioner, the depilator, the men from the places of refreshment shouting their wares, each with his own vendor's voice.'

discharges on to the floor. As the floor is extremely hot it immediately evaporates, creating a very hot, steamy atmosphere.

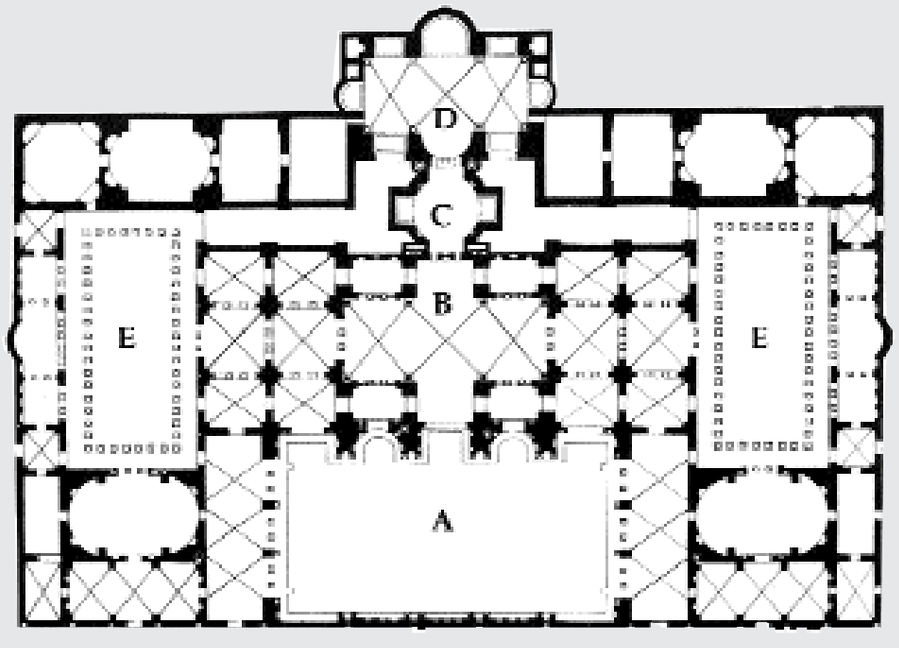
Roman buildings were quite sophisticated for their time, as the bath-houses demonstrate. They had heated floors and walls which provided heating and also controlled condensation. This careful construction extended to the provision of double-glazed windows. They also had hot and cold flowing water which ran via a network of lead pipes, and they built indoor toilets.

Materials and Practicalities

In order to keep the cost of the project to a reasonable level, the reconstruction used a mixture of modern materials with authentic original materials. Any building elements that may be visible are exact replicas, using the Roman materials. As the walls would have been rendered both inside and out, the 900mm wide walls are to be constructed by modern techniques i.e. blockwork diaphragm walls. The roof tiles were imported from Italy — the manufacturers still produce the Roman patterns to this day. The glass for the windows had to be specially cast to recreate their Roman appearance. The stone features within the building were quarried and finished by hand by specialist masons who work for Tyne & Wear Museum Service. Ironmongery was specially made, as were the boiler and the *testudo*. The pipework was made to look authentic by wrapping lead around modern copper pipework.

The interior of the bath-house is fairly utilitarian. The floors are either stone flagged or concrete (*opus signinum*), a roughly finished form of terrazzo. The walls and ceilings are rendered and eventually will be painted with fairly gaudy murals (some have already been completed). There is a cut-away section of hypocaust and *tubuli* in one of the rooms to demonstrate how the heating system works.

As the building is a working replica and is used by the public, certain modern features have been integrated into the design and concealed wherever possible. For instance, electric lighting and a power supply have been installed; the Romans would have used oil lamps. A fire alarm and detection systems, emergency lighting and water treatment have all been added. Also, as the changing room may be used for special functions, a modern underfloor heating system has been provided to that room. In order to satisfy fire safety regulations, an additional external door had to be provided; this will be disguised as a wall.



A, Natatio, swimming pool
B, Frigidarium, cold room, changing rooms
C, Tepidarium, warm room
D, Caldarium, hot room
E, Palaestra, exercise yards or gymnasia

The Baths of Diocletian (left) were the largest ever built in Rome. The entire complex was built of brick between AD298-306 and could be used by up to 3,000 people at the same time. The tepidarium or warm room was adapted by Michelangelo in 1566 to build the Basilica of Santa Maria degli Angeli. There are ten surviving monumental baths in Rome, but written sources suggest that there were at least another six. Thermal baths were one of the most characteristic signs of Roman civilisation and can be found in every province of the Roman Empire.

Field Survey

A "how-to do-it" practical guide by tutors from the Kent Archaeological Field School. Part two of a ten-part series on all aspects of archaeological field survey.

Over the last few years professional surve methods have been revolutionised by th availability of laser and satellite measuring systems. Laser beams are now used i all sophisticated Electronic Distance Measureme (EDM) equipment, while GPS (Global Positionin Systems) now use satellites to give an accurate position anywhere on the globe. Most of this hig tech equipment is far too expensive for most amateur archaeological groups. However, some simpler systems using laser technology have become more widely available, with prices starting in the region of £90.

GPS has recently been de-militarised and the signal is no longer deliberately made inaccurate precise positions may be pinpointed. However, t obtain a position correct to within 1 metre still calls for the use of expensive equipment.

Automatic Levels

The introduction of the automatic level has been another important development in modern surv techniques. Once set up, the automatic level enables the operator to look through the telescope and see an imaginary horizontal line projected across the landscape.

To set up the machine it is necessary to centre one small circular spirit-level bubble using the three screws located in the base. Once this is done, the automatic level uses an internal mechanism which keeps all the sight lines level.

With the recent advances in high-tech survey equipment, prices have tumbled. The purchase o an automatic level is now a possibility for many archaeological societies, with prices for the complete kit — tripod, automatic level and staff — starting at about £180. Automatic levels are available with a range of magnification optics, b 20x will fulfil most archaeological survey tasks.

The Surveyor's Staff

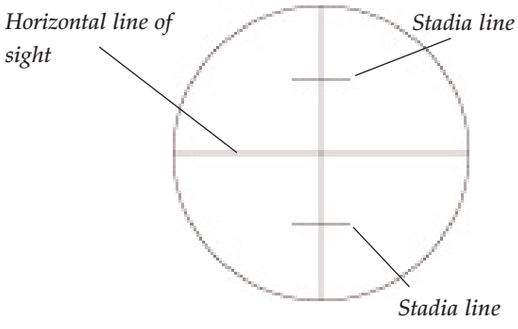
Although the automatic level is usually used to take vertical height measurements, it is possible

Reading the Staff
The staff is divided into metres by the alternating colour bands—red and black. To read the scale it is best to remember that each thick line and intervening space is a centimetre in depth, so each 'E' shape is the equivalent of 5 centimetres in height.

Each 'cube' is the equivalent of 1 centimetre in depth.

Make sure fingers are kept away from the scale, otherwise it is difficult to see the measurement.

measure distances using the level and staff. The staff is in effect a giant metric ruler usually four metres long, which either folds or is telescopic. It is marked in alternating red and black segments, divided into metres and centimetres. When using a level it is apparent that apart from the main



cross lines running horizontally and vertically across the field of view, there are two short horizontal lines equally spaced above and below the main horizontal. These are called the stadia lines. The stadia was a Greek measurement of about 606 feet (184 metres). These lines enable the level to be used to compute distance. The staff is held vertically at the distance to be measured by an assistant. When it is sighted, through the automatic level, the line of sight will, of course, be horizontal.
The formula to use to find the distance is:
Distance=100x highest staff reading minus lowest staff reading.
If the staff readings are 2.5 metres (highest) and 1.5 metres (lowest) then:
2.5-1.5=1x100=100 metres.
Beyond 50 metres accurate staff reading becomes difficult and should not be attempted. It is best always to remember that any inaccuracies in field distance recording will be multiplied by 100!

Measuring Height

As the automatic level can be rotated through 360° on the tripod, it can be used to measure any height in the visible landscape. This imaginary line is really an arbitrary level plane being superimposed over the landscape, and is known as a line or plane of collimation. To measure the vertical height or depth of any feature seen it is necessary to use a surveyor's staff. As the staff is moved around the site or landscape, the readings taken by sighting the central cross-hair or line of sight in the level against the measurements on the staff will be seen to vary. Lower readings indicate that the feature is on higher ground, whilst higher readings show that the feature is on lower ground. To make sense of these rises and falls it is necessary to tie in your survey to a benchmark provided by the Ordnance Survey. These benchmarks can be found cut into stone or brick on structures like churches, public buildings or railway bridges. They appear as an inverted 'V' with a line on top; the benchmark level is the horizontal line. Height above sea level can be found on most Ordnance Survey maps or from listings available at the local borough council offices. If you cannot find a benchmark, you can create your own, by fixing a metal post in an accessible corner of the site. This is called a temporary benchmark or 'TBM'. Give this an arbitrary value, say 25 metres, and you can produce a site survey with contours, but not related to other sites or to the wider landscape. To do this you will need to take your line of collimation across country to the nearest O S benchmark using back and foresights.
This will be explained in the next article

Set up the tripod by pushing the legs into the ground, extend the legs of the tripod until the level is roughly horizontal. Centre the circular spirit level bubble by turning the forescrews. Locate the distant object or staff with the coarse sight located on top of the instrument. Turn the coarse or fine focus wheel until a clear image can be sighted. Now turn the horizontal drive wheel to set the staff at the centre of your vision. You can now read the vertical measurement.

The Kent Archaeological Field School Courses

A full listing of archaeological courses held at Faversham in Kent. The fee is £30 a day and if you become a member there is a 10% discount on full prices. To become a member fill in the form on the last page of the magazine, and to book fill in the form on the opposite page. For further details access our web site at www.kafs.co.uk

September 1st, 2nd, Landscape Archaeology

Dr Paul Wilkinson will teach you how to trace the transformation of the landscape of Britain by using historic maps from the County Study Centres. On Saturday, we will handle and interpret a variety of historic maps, and on Sunday will take copies of the maps into the field to find out how best to locate lost historic and archaeological sites.

The Imperial city of Rome as it would have looked in its heyday. It is dominated by the Colosseum, built in AD70, which could accommodate up to 70,000 spectators. To the left is the Palatine Hill, site of the founding of Rome by Romulus in 753BC. In the foreground is the Circus Maximus, a race-track for chariots, capable of holding 250,000 spectators.

September 7th, 8th, 9th, 10th, Visit to Imperial Rome

Rome, built on seven hills and centre of one of the greatest empires in the ancient world, will be our classroom for four days. Rome can only be savoured on foot, and only with an experienced guide. Dr Paul Wilkinson will take you on a walk through history – the Field of Mars, Trajan's Column, the Forum, the Colosseum, Palatine Hill, the Pantheon, the Temple of Hadrian and the Arch of Constantine. This special course is now FULLY BOOKED

September 22nd, 23rd, Prehistoric Flints

A practical course on identifying and recording worked Mesolithic and Neolithic flints. We will fieldwalk various prehistoric sites to familiarise

ourselves with flint artefacts. Course led by Chris Butler, Chairman of the Mid-Sussex Field Archaeology Team, and the flint-knapper John Lord (his son, opposite, taught a previous course).

September 29th, 30th, Archaeological Drawing

A weekend course on how to illustrate pottery, bone, metal and other artefacts found in archaeological excavations. Course led by Jane Russell, senior illustrator of the UCL Field Archaeology Unit.

October 13th, 14th, Interpreting Handwriting

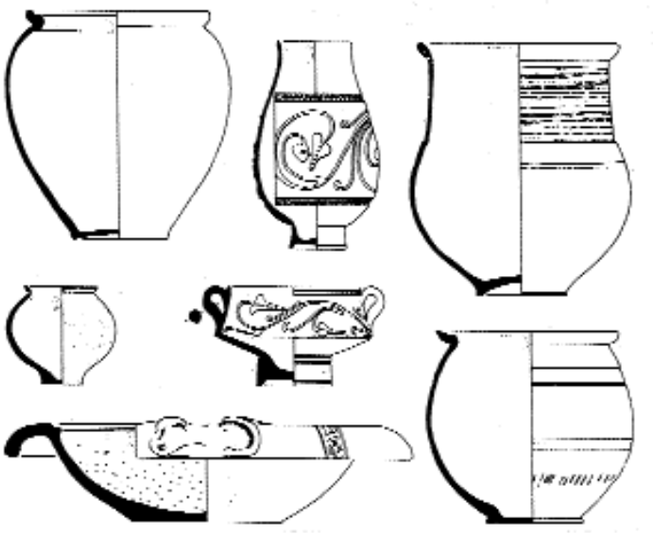
This practical course led by Duncan Harrington of the Kent Archaeological Society, will enable you to read and transcribe the many documents surviving from the medieval to eighteenth centuries. These skills will help those wishing to carry out their own research projects.

October 20th, 21st, The Roman Mosaics of Britain

Course led by David Neal who, with Stephen Cosh, has compiled a description and illustration of every Roman mosaic discovered in Britain. On Sunday we will visit the famous mosaics at Fishbourne and Bignor (entrance fees included).

October 27th, 28th, Identifying Roman Sites

This fieldwalking course will show how artefacts on and in the ploughed surface, and features in the landscape, enable us to locate lost Roman sites. Course led by Dr Paul Wilkinson, who is a specialist in landscape studies. Member's special fee £22.50 per day.



November 3rd, 4th, The Topography of Rochester

A weekend course on the origins of Rochester city, castle and cathedral. We will visit Rochester on both afternoons. Course led by Tim Tatton-Brown, Archaeological Consultant to Rochester Cathedral.

November 10th, 11th, Prehistoric Kent

An introduction to the archaeology of ancient Kent. We will visit many of the very special prehistoric sites and monuments in the county, including Kit's Coty and the Coldrum Stones.

BOOKING FORM

Name of Course……

……

Date of Course……

Your Name……

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I enclose a cheque (payable to the Kent Archaeological Field School) for……

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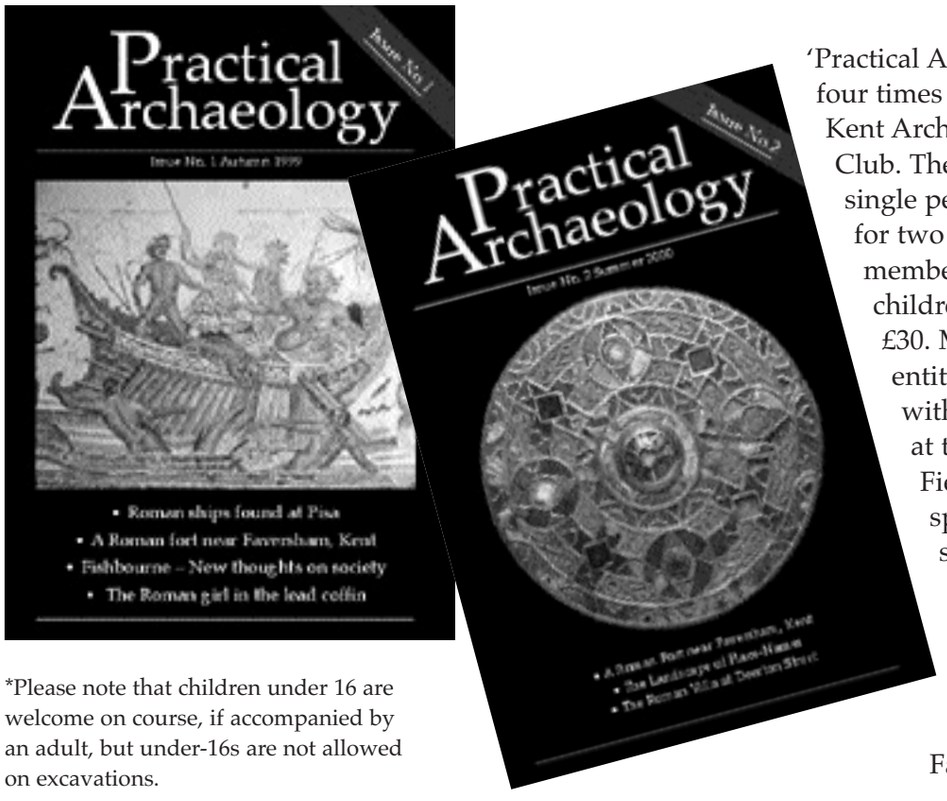
Practical Archaeology



*Please note that children under 16 are welcome on course, if accompanied by an adult, but under-16s are not allowed on excavations.

'Practical Archaeology' is published four times a year for members of the Kent Archaeological Field School Club. The annual subscription for a single person is £15. Membership for two adults is £25, and family membership (two adults and two children under 16 years old*) is £30. Membership will also entitle you to priority booking with 10% discount on courses at the Kent Archaeological Field School, except where special prices apply, and special 'members only' field days and trips.

Please return the form to: Kent Archaeological Field School, School Farm Oast, Graveney Road, Faversham, Kent, ME13 8UP.

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