

**Archaeological excavation at
St Mary's Church,
High Street, Wivenhoe,
Essex, CO7 9BD**

January and May 2021



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**commissioned by
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1 Summary

An archaeological excavation was carried out at St Mary's Church, Wivenhoe, Essex in advance of the construction of an extension to house a meeting room and ancillary facilities. During the excavation 24 inhumation burials were uncovered, along with a large amount of disarticulated human bone, representing the remains of at least another 45 individuals. Finds of a 17th-20th century date, including substantial amounts of coffin furniture, were retrieved from the inhumations. As the site has been a burial ground since the 14th century, however, it seems likely that some of the disarticulated remains could be of an earlier date.

2 Introduction (Fig 1)

This is the report on an archaeological excavation at St Mary's Church, Wivenhoe, Essex which was carried out between the 14th and 28th January 2021 and in May 2021. The work was commissioned by Ben Downie on behalf of the PCC of St Mary's Church, in advance of the construction of an extension to house a meeting room and ancillary facilities, and was carried out by Colchester Archaeological Trust (CAT).

A planning application (planning ref. 162526) was submitted to Colchester Borough Council in October 2016 detailing the proposed demolition of the southern porch of the church and the erection of a new extension.

As the site lies within a known burial ground, it is highlighted by the CHER as having a high potential for archaeological deposits. After an archaeological test-pit evaluation of the site and a historic building recording of the southern porch (both detailed in the archaeological background below), the Colchester Borough Council Archaeological Advisor (CBCAA) recommended an archaeological excavation be undertaken prior to the construction of the extension. This recommendation was based on the guidance given in the *National Planning Policy Framework* (MHCLG 2019). The main excavation area was undertaken in January 2021, and the excavation of the service trenches was carried out in May 2021.

All archaeological work was carried out in accordance with a *Brief for Archaeological Excavation*, detailing the required archaeological work, written by Dr Jess Tipper (CBCAA 2020), and a Written Scheme of Investigation (WSI) prepared by CAT in response to the brief and agreed with the CBCAA (CAT 2020).

In addition to the brief and WSI, all fieldwork and reporting was done in accordance with Historic England's *Management of Research Projects in the Historic Environment (MoRPHE)* (Historic England 2015), and with *Standards for field archaeology in the East of England* (EAA 14 and 24). This report mirrors standards and practices contained in the Institute for Archaeologists' *Standard and guidance for archaeological field excavation* (ClfA 2014a) and *Standard and guidance for the collection, documentation, conservation and research of archaeological materials* (ClfA 2014b).

3 Archaeological background

The following archaeological background draws on the Colchester Archaeological Trust report archive and the Colchester Historic Environment Record (CHER, ECC/MCC numbers) accessed via the Colchester Heritage Explorer (www.colchesterheritage.co.uk).

The church of St Mary the Virgin (MCC3175 & MCC8980) was constructed in the mid 14th century, but after a fire in 1850 was the subject of an intensive programme of rebuilding and alteration. The excavation area is located within the churchyard to the south of the church (MCC10041), directly adjacent to the southern aisle and incorporating the area of the recently demolished 19th-century porch (Fig 1). An assessment of the historical background of the church (including map regression) has recently been made in CAT Report 1554, so is not repeated in full here.

The substantial rebuilding of the church in the 19th century resulted in this assessment of the site in 1977 (Rodwell & Rodwell):

'Dull and uninteresting after 19th century rebuilding. Graveyard has been devastated and largely cleared with headstones leaned carelessly against boundary walls though a few monuments are in situ. Archaeological potential unknown, could be high.'

A number of listed buildings surround the church and churchyard, dating from the 15th to the 19th centuries.

An archaeological test-pit evaluation (two test-pits) was carried out on the site in March 2020 (ECC4148, CAT Report 1551), in an attempt to better inform the design of the extension, specifically the depth and nature of its foundations. The test-pits revealed ten inhumation burials and a large quantity of disarticulated bone. The large concentration of coffin furniture present amongst those remains indicated that the individuals were interred from the late 17th century onwards, although there is a high likelihood that further earlier burials underlie them. A 19th-century wall foundation which was probably the remains of a funerary monument was also uncovered during the test-pitting. Also carried out in March 2020 was a historic building recording of the southern porch, confirming its 19th-century date (CAT Report 1554).

Subsequent to this evaluation, the proposed depth of the extension's foundation was revised and raised in order to impact as few burials as possible.

4 Aim

The aim of the work was to record and excavate any archaeological remains, particularly burials, that would be impacted by the development.

5 Methodology

A single excavation area was opened in the location of the extension, measuring 16m x 7m in size.

The area was mechanically excavated under constant archaeological supervision, and machine excavation continued until grave cuts, burials or other archaeological deposits were encountered, which were then excavated and cleaned by hand (see results section below). Excavation continued in this manner until the required depth for the extension's foundation was reached. At this point, any visible graves were investigated to ensure a 200mm 'buffer-zone' above any intact burials. After this a layer of terram and aggregate was laid down in order to protect any burials beneath the level of the foundations.

Service trenches and an associated soakaway were also excavated under the same methodology.

6 Results (Figs 2-3)

The excavation area uncovered 23 features and 2 layers.

The two layers consisted of a modern topsoil (L1, a soft/friable medium/dark black sandy silt, 180mm thick), which sealed a mixed burial soil (L3, soft dry medium/dark brown/black sandy silt). L3 comprised the mixed backfill of multiple graves, and a significant amount of disarticulated human remains were recovered from this layer (see human remains section below). The area was excavated to a maximum depth of 1.2m below current ground level (bcgl), but the base of L3 was never observed.

The 23 features encountered within the excavation area were all burials, and they were all cut into the burial soil L3. As is often the case in graveyards, the edges of the burials were difficult to ascertain, but any partial or assumed edges have been recorded on their associated plans (Figs 4-7).



Photograph 1 Burials F3, F4 and F26 – possible family plot. Photograph taken facing west.



Photograph 2 Brick-built soakaway, with mortar foundations of demolished porch in background. Photograph taken facing north.

Also present in the excavation area was a 19th-century brick-built soakaway to the south-west, probably associated with the recently demolished porch (Fig 3, Photograph 2). Additionally, the foundations for the porch were observed, and consisted of packed lime mortar and rubble.

After the extensions construction, a service trench was excavated around its exterior to a width of 1.5m (Photograph 3). Projecting off from this trench were two smaller trenches, both 0.4m wide and 0.45m deep. One followed the western edge of a pathway to the north-east for 20m, while the other went 6m south to a soakaway (Fig 2). The service trenches impacted the same 2 layers as the excavation area, but due to their shallow depth uncovered no more burials. Multiple disarticulated remains, however, were recovered from L3.



Photograph 3 Service trench on eastern side of excavation area. Photograph taken facing north.



Photograph 4 Soakaway to south of excavation area, showing natural sand L5 and brick-built structure. Photograph taken facing south-east.

The new soakaway to the south, despite being excavated to a depth of 2m, also failed to expose any burials (Photograph 4). Its excavation did, however, uncover two new layers below L1 instead of L3; a thick (1.1m-1.6m) post-medieval build-up layer (L4; soft dry dark black sandy silt) and a natural yellow sand (L5; mixed soft light yellow/white sand; found at a depth of between 1.2m-1.8m bcgl). This was the only location where a natural subsoil was observed during this investigation. As well as the lack of burials, the soakaway contained no disarticulated human bone, suggesting it is outside the historic extent of the graveyard.

Also present within the soakaway was a backfilled brick-built structure, constructed of unfrosted bricks and bonded with lime mortar (Photograph 4). This structure was located in the south-east corner of the soakaway, and extended to a depth of around 1m. Close inspection of this structure was not possible due to the depth and unstable nature of the sides, but it seems likely to be either a backfilled brick-built soakaway (similar to the one observed in the excavation area to the north), or part of a backfilled cellar associated with buildings that used to exist in this location (see discussion below).

The 23 burials (F2-5 & F12-30) encountered during these works were all aligned broadly west-east, with the head of the skeletons (if surviving) at the western end (Fig 3). F2-5 had previously been partially uncovered during the test-pit evaluation carried out in March 2020 (see archaeological background above), whereas F12-30 were encountered for the first time during this excavation.

Several of the burials contained evidence of coffins in the form of coffin furniture, nails and other accoutrements. Several also contained other finds, including pottery sherds, although a substantial number of these finds are residual in the backfill of the graves. The burials were found at depths varying from 0.615m bcgl at the shallowest to 1.155m bcgl at the deepest (see Appendix 7). The skeletons were in varying states of preservation and completeness, and are examined in detail in the 'human remains' section below. Several skeletons had clearly been cut by later graves, and where this was visible the edges for these deeper graves were noted on the plans (Fig 4-7).



Photograph 5 Site working shot during excavation. Photograph taken facing north-west.

7 Finds

Human remains

by Megan Seehra

Introduction

A number of inhumations and a large amount of disarticulated bone were recovered from twenty-four contexts during recent excavations at St Mary's Church in Wivenhoe. A previous evaluation at this site recorded post-medieval human remains (CAT Report 1551), several of which were fully exposed and recovered during this excavation.

The analysis from this excavation has revealed twenty-three individual graves, with one possible double grave. The disarticulated remains from L3 contain at least forty-five individuals. These individuals range from prenatal to older adults, a fairly even split of males and females, and presented a variety of interesting pathologies and trauma. Preservation of human bone was generally very good, with a large amount of disarticulated bone showing signs of post-mortem trauma due to the disturbance by gravediggers.

Methodology

Initial assessment of articulated human remains (burials) involved recording each element present from each context. The minimum number of individuals (MNI) was then determined using duplicates from the most common element present (e.g. two right humeri) and both juvenile and adult within one context. Finally, completeness was assessed by dividing the skeleton into ten groups, at 10% completeness each. Each individual has been given completeness to the nearest 5% and uses Table 1 as a guideline.

Group	Group name	Elements in group
1	Skull and mandible	All elements of the skull and mandible
2	Vertebrae and ribs	Cervical, thoracic and lumbar vertebrae, ribs
3	Pelvis girdle	Left and right os coxae, sacrum
4	Pectoral girdle	Left and right scapulae, clavicles, and sternum
5	Right arm	Right humerus, radius and ulna
6	Left arm	Left humerus, radius and ulna
7	Right leg	Right femur, tibia, fibula and patella
8	Left leg	Left femur, tibia, fibula and patella
9	Hands and wrists	All carpals, metacarpals and hand phalanges
10	Feet and ankles	All tarsals, metatarsals and foot phalanges

Table 1 Skeletal element groups used to determine skeletal completeness.

Articulated remains were scored on the condition of the bone, using a scoring system of one to five (one being very poor; five being very good). Table 2 shows the summary of the grades.

Grade	Description
1	Very poor condition; extensive wear of bone cortex and heavy fragmentation
2	Poor condition; extensive wear of bone cortex and some fragmentation
3	Average condition; slight wear of bone cortex with minimal fragmentation
4	Good condition; slight wear of bone cortex or minimal fragmentation
5	Very good condition; no wear of bone cortex or fragmentation

Table 2 Scoring system used to grade condition of bone.

Disarticulated remains were washed, organised by the skeletal element, and weighed. MNI was then determined, age and sex estimations were made, and all were briefly assessed for any significant pathologies or non-metric traits. Age and sex estimations were carried out using the same element used to determine MNI.

Age at death

Adult age ranges were estimated using the following combination of methods as per Ubelaker & Buikstra (1994) and Brothwell (1981), depending on elements present; epiphyseal fusion, pubic symphysis, cranial suture closure, and tooth wear. Juvenile ages were estimated using measurements, epiphyseal fusion, and tooth eruption as per Schaefer *et al.* (2009).

The estimations were then put into an age group (Ubelaker & Buikstra 1994) to present in the main report. These are as follows:

- infant (birth-3 years)
- child (3-12 years old)
- adolescent (12-20 years)
- young adult (20-34 years)
- middle adult (36-50 years)
- old adult (50-80 years)
- adult (18+)

A full breakdown of specific ages for each individual can be seen in Appendix 2.

Sex estimation

Sex estimation mainly used the following combination of methods as per Ubelaker & Buikstra (1994); sexually dimorphic cranial features and pelvic morphology. In addition, sex estimation was also obtained using the femoral, humeral and radial head diameters, femoral length, humerus trochlea constriction, and sternum length, using various methods as per Bass (2005). Sex was only estimated for adults, as it is generally impossible to determine sex for pre-pubescent individuals.

Sex was estimated into the following groups:

- male
- ?male (possibly male)
- female
- ?female (possibly female)
- indeterminate (assessment shows equal male and female features, remains are juvenile, or not enough bones to determine sex).

Stature

Stature was estimated using a combination of formulae by Pearson (1899), Trotter & Gleser (1958), and Dupertuis & Hadden (1951), using long bone measurements. Where sex was estimated, the *Male White* or *Female White* formulae were used for Pearson and Dupertuis & Hadden, and the *White* formulae were used for Trotter & Gleser. Where sex was unable to be estimated for an individual, both male and female formulae were used.

An average and a minimum/maximum range were then calculated using all equations used. Stature was estimated for some juveniles (where aged 16+ and relevant elements available), but as the formulae are created from adult long bones, adolescents' (16+) stature has a higher degree of uncertainty.

Pathologies and non-metric traits

All bones were studied for pathologies visible to the naked eye. First, they were identified using a variety of texts, including palaeopathological ones – such as Ubelaker & Buikstra (1994), Roberts & Manchester (2010), White *et al.* (2011), and specific cases – and clinical texts. Pathologies present were then grouped by type, as per Roberts (in Mitchell & Brickley 2012). Non-metric traits were noted as absent or present, as per the non-

metric skeletal traits detailed by Ubelaker & Buikstra (1994); cranial and post-cranial traits were included.

Results

Minimum Number of Individuals (MNI)

A total of 24 individuals from 23 graves was estimated from this assemblage.

Age at death

The majority of individuals from this assemblage were estimated to be young adults (20-35 years old). The youngest individual was estimated to be between 3-5 years old (F29), and the oldest individual was thought to be 63-75 years old (F28). There were no fetal remains or infants recovered from the articulated burials.

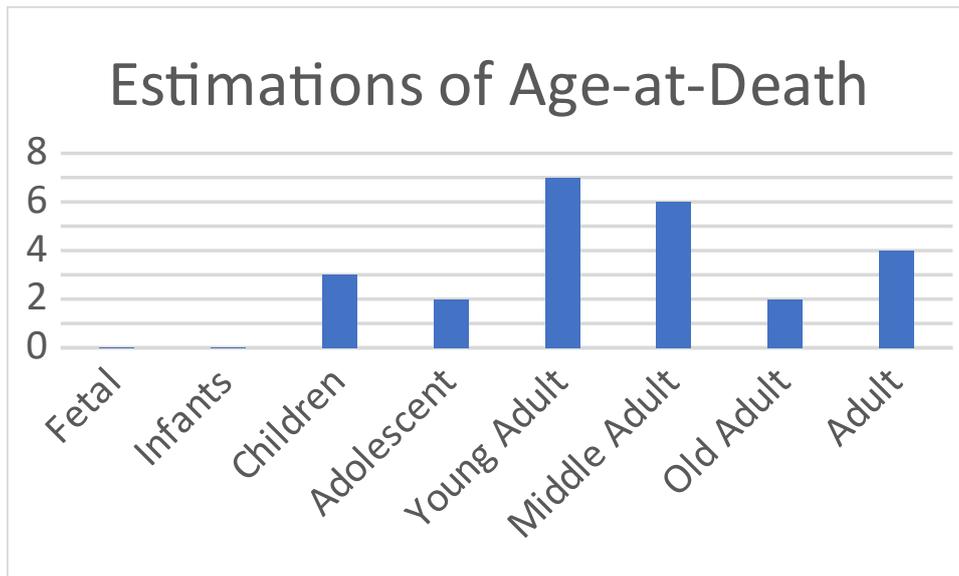


Chart 1 Estimations of age-at-death for articulated burials.

Sex Estimation

There was not a significant difference in the representation of males and females among this assemblage. Nine individuals were estimated to be male/?male, and ten individuals were estimated to be female/?female. Four individuals were concluded to be of indeterminate sex (Chart 2).

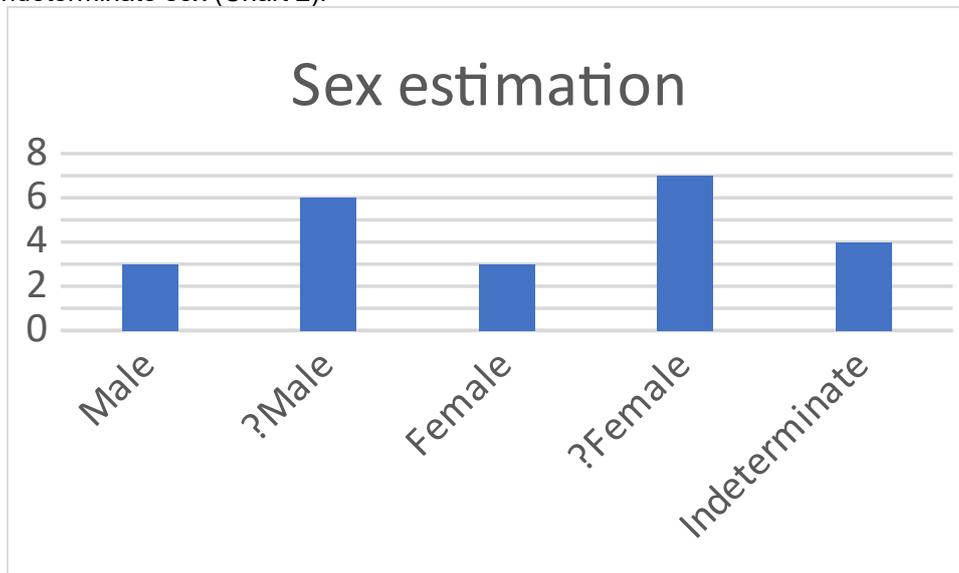


Chart 2 Sex estimations of articulated burials.

More females were represented in the young adult and middle adult age groups; however, more males represented in the generic adult age group (chart 3).

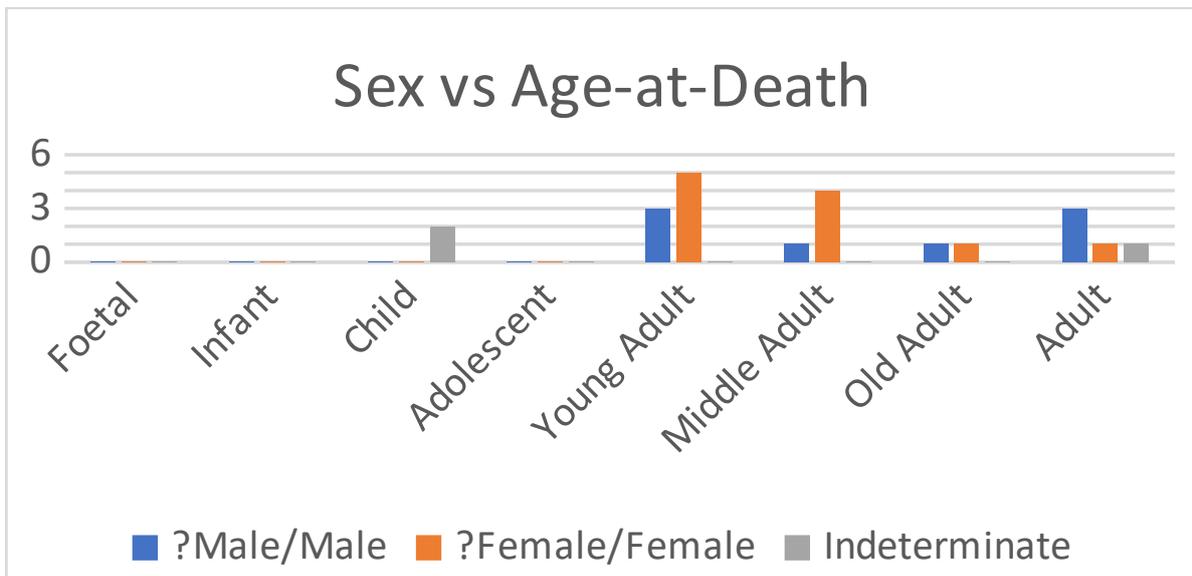


Chart 3 Sex estimations for articulated burials grouped by age groups.

Stature

Stature could be estimated for 19 individuals in the assemblage. Average height ranged from 160cm-179cm (5'3"-5'10"), with an overall average of 168.74cm (5'6½"). Female/? female stature ranged from 160cm-171cm (5'3"-5'7") (average: 166.74cm (5'6")), and male/?male stature ranged from 160cm-179cm (5'3"-5'10") (average: 171.96cm (5'7¾")). Only one indeterminate adult's stature was estimated, which was 163cm (5'4"). Chart 4 shows that most males were 176cm and above, whereas most females were between 166-170cm. There appears to be no significant bias concerning stature by age group (chart 5). These height ranges for both sexes do not seem abnormal for the time, however there is a small gap between the average male and female height. This may be indicative of geographical variation and/or genetically inherited stature. Average heights in the modern period (2012) in England are 175cm (5'9") (males) and 162cm (5'4") (females) (Mood 2013).

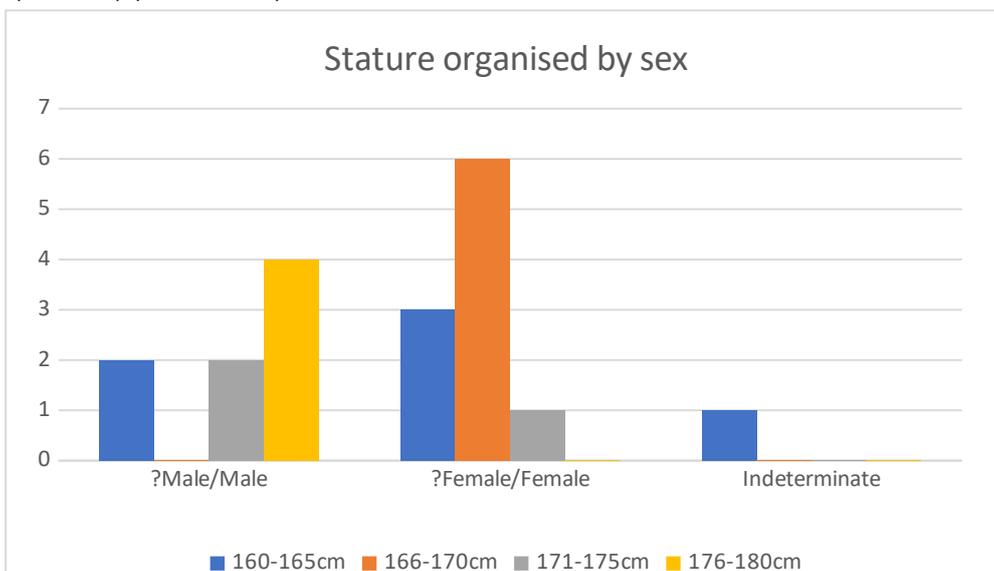
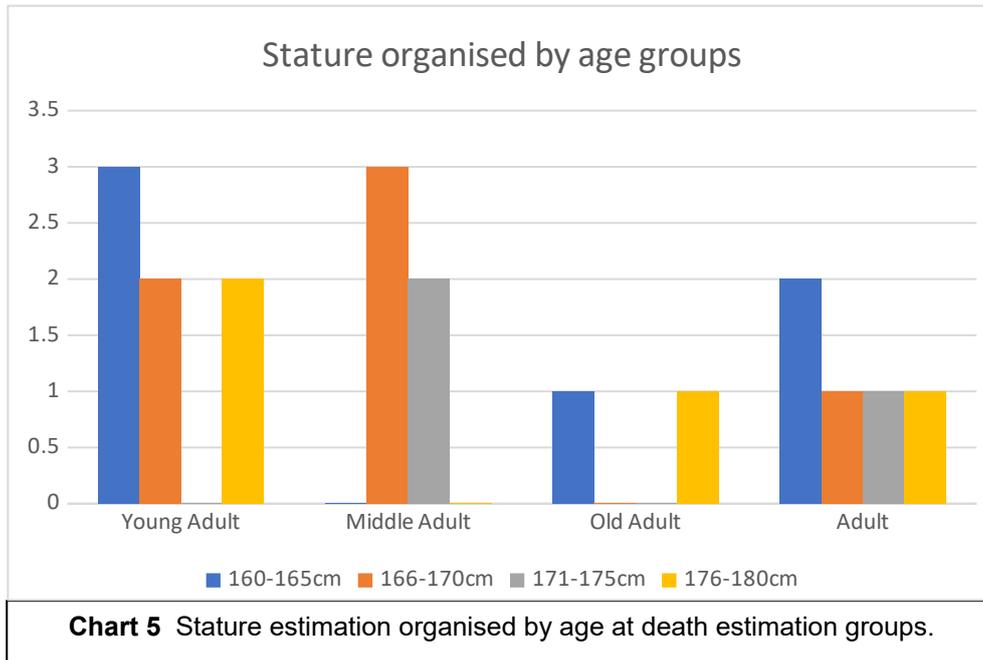


Chart 4 Stature estimation organised by sex estimation groups.



Pathologies and Congenital Defects

Infectious disease

Five individuals presented evidence of mastoiditis (four bilateral (F4, F13, F18, F30), one unilateral (F26)), the infection is so advanced that it has destroyed the mastoid process for four of the individuals (Photograph 6). Mastoiditis is a severe bacterial infection of the middle ear but can move into the inner ear. In the modern-day, antibiotics can cure this before it becomes serious; however, mastoiditis can potentially cause death if left untreated. It is not contagious, but the bacteria causing the infection can be.



Photograph 6 Left and right partial temporal bones of F30. The white arrows show the destroyed mastoid process, the black arrow shows the external acoustic meatus (ear) for orientation.

The individual from grave F24 presented signs of hematogenous osteomyelitis (a type of bone infection) or septic arthritis (a severe joint infection) at their right knee, evidenced by a dense, heavy proximal tibial head and shaft, with woven bone, and visible bulging of the tibial head and proximal femur (Photograph 7). Both hematogenous osteomyelitis or septic arthritis commonly occurs at the knee, and like mastoiditis, can be lethal if left untreated. This individual was estimated only to be between 24-30 years old, so this infection was likely the result of trauma directly to the right leg and may have been their cause of death.



Photograph 7 Posterior view of right proximal tibia (left) and femur (right) of F24. The black arrow shows advanced osteophytes on the femoral head. The white arrows show the visible bulging of the tibia and femur shafts.

The individual in F27 exhibited signs of periostitis to their left proximal tibia and fibula shafts and it was also seen to a lesser extent on their right tibia and fibula. Periostitis is an inflammation of connective tissue surrounding bone and can cause necrosis; however, this individual only showed relatively minor periostitis. It can be caused by an infection or excessive physical activity (e.g. shin splints caused by running).

Trauma

Three individuals (F3, F4, F28) had single rib fractures; two were healed, and one was still healing at the time of death (F4; adult). The healing fracture was present at the first rib; an unusual location. This individual also showed signs of a complete bilateral fracture to the pedicles of ?C3 vertebra, and fractures to C1 and C2 cannot be ruled out as they are in bad condition. Therefore, the combination of the rib and vertebral fractures may indicate a "hangman's fracture", and while a noose hanging can cause it, it can also be caused by an accidental fall. However, it does not always cause death.

The individual from F3 also had ossification of cartilage on the right side of the manubrium, between the connection of the first rib (Photograph 8). An old injury or fracture may have caused this ossification at this site, or it could be occupation-related.



Photograph 8 Anterior view of the manubrium. The black arrow shows the ossification cartilage.

One individual (F12) exhibited signs of an unhealed mid-shaft spiral fracture to the right humerus (Photograph 9); this individual was estimated to be over 60 years old. Therefore, they would have fragile and brittle bones, and a fall could result in this type of fracture.



Photograph 9 Posterior view of a fragmented left humerus from F12, showing an unhealed mid-shaft spiral fracture.

Two individuals had healed clavicle fractures (F23, F26); a common fracture location. The left clavicle fracture of F23 was poorly healed (Photograph 10), and this individual also had a complete fusion (ankylosis) of their left femoral head to the acetabulum (Photograph 11), leaving them unable to move or rotate their left leg at the hip. The clavicle fracture and ankylosis may have been caused simultaneously, as the ankylosis could have been caused by trauma, a fracture or a congenital defect. One more individual presented evidence of ankylosis; F30 had ankylosing spondylitis in two places between their vertebrae and ribs.

The individual from F22 had signs of a joint lesion at the site of the infraspinatus muscle on their right humeral head. A rotator cuff injury may have caused this.



Photograph 10 Poorly healed left clavicle fracture of F23. The black arrow shows the site of the healing, and partial fusion of the two fracture sites.

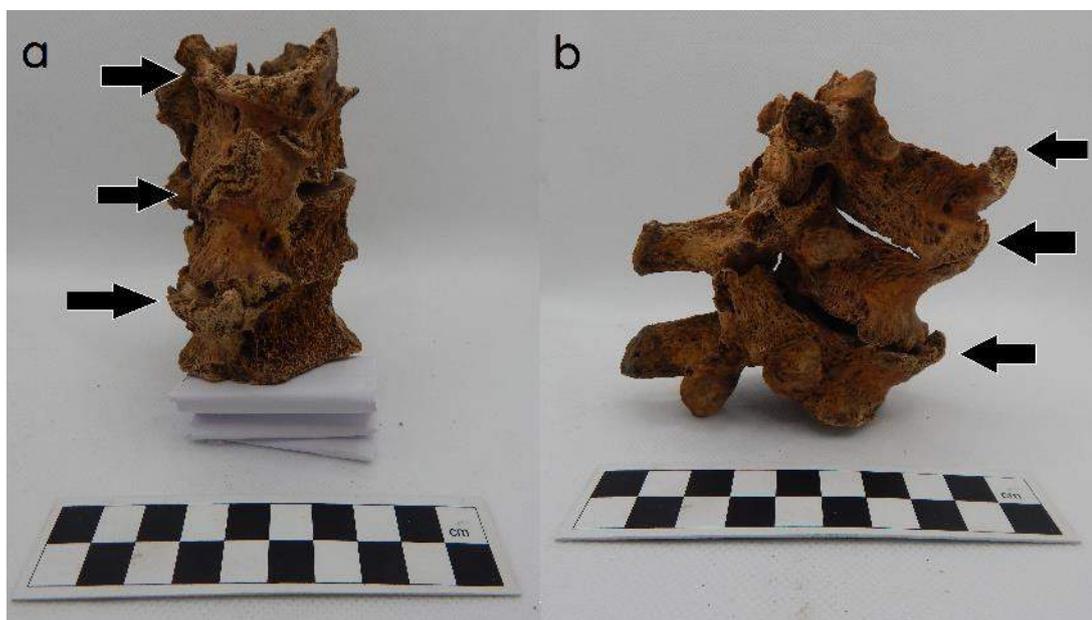


Photograph 11 Anterior view of the fused left femur and os coxae of F23.

Joint disease

At least one sign of joint disease was identified in ten individuals in this assemblage; however, not all were age-related (i.e. osteoarthritis). The two individuals classed as "old adult" (over 50; F12, F28) both exhibited evidence of diffuse idiopathic skeletal hyperostosis (DISH; also known as spinal ankylosis) (Photograph 12), a relatively common joint disease affecting the elderly, characterised by the ossification of the

anterior longitudinal ligament of the spine. These two individuals also had very light and brittle bones, vertebral deep pitting, and osteophytes; all signs of age-related arthritis.



Photograph 12 Three thoracic vertebrae from F28 showing evidence of DISH (diffuse idiopathic skeletal hyperostosis. a) anterior view, b) superior is up. Black arrows show enthesophytes consistent with DISH.

F28 also showed signs of Schmorl's Nodes in their thoracic vertebrae. Schmorl's Nodes are depressions in vertebral endplates caused by material in intervertebral discs contacting with the marrow of the vertebrae, leading to inflammation. They are a sign of chronic stress on the spine or a vitamin D deficiency (Serin *et al*, 2016), may cause back pain (Faccia & Williams, 2008) and it has been argued Schmorl's Nodes are also hereditary (Williams *et al*, 2007).

The other eight individuals were all aged under 60 years old; three were under 40 years old. The under-60s showed signs of the beginning of age-related arthritis (F3, F13, F21, F22), evidenced by increased porosity and osteophytic lipping to joint locations throughout. Most notably is F13 - aged 42-65 - who showed signs of advanced hip arthritis. In addition, they had deep pitting and eburnation to their left and right femoral head and left acetabulum.

The younger individuals exhibited signs of arthritis (F24, F26, F27, F30); osteophytes, eburnation, pitting to femoral heads, humeral heads, radial tuberosities, and vertebrae. Arthritis found in these eight individuals was most likely accelerated by active lifestyles from a young age, which may be an insight into their occupations.

Metabolic disease

The immature remains from F4 were aged to 4-6 years old; however, the femur and tibiae lengths were aged to only 2-3 years old. This is possibly due to this individual suffering malnutrition from a very early age or a specific condition, such as anaemia. Any other metabolic disease this early on in life can also cause stunted growth, as well as a congenital defect. Unfortunately, a specific diagnosis of this individual cannot be made due to only a 30% completeness of the skeleton.

Neoplastic disease

The only evidence of neoplastic disease in this assemblage was found in F28; a small button osteoma (aka button lesion) was found above the ?right eye on the frontal bone, measuring approximately 9mm in diameter. The exact cause of these is unknown and they are usually benign (Eshed *et al*, 2002).

Dental conditions

Dental disease in this assemblage was the most common pathology present (Appendix 3 shows all dental conditions present in the articulated assemblage).

Where the skull was recovered, fourteen individuals showed at least one sign of dental disease. Eight individuals (F3, F4, F12, F13, F22, F24, F28, F30) had antemortem tooth loss with alveolar resorption. The most common tooth to lose was the first molar (all eight), closely followed by the other two molars and the second premolar. Four individuals (F13, F18, F20, F24) had at least one dental caries, with one individual (F13) having cervical caries to all surviving teeth (possibly due to gingivitis – gum inflammation). One individual (F3) had six dental abscesses, and only four individuals (F5, F18, F26, F30) had dental calculus. The latter is usually the most common dental disease present in human bone assemblages.

Three individuals (F3, F4, F5) had clear hypodontia of the third molar (lack of wisdom teeth), which could be a hereditary condition or simply environmental factors preventing the growth and eruption of this tooth. F5 was aged 18-34 years old, so it is possible their third molars had not erupted yet.

One individual (F29) – a 3-5-year-old – seemed to have hyperdontia in the area of their upper left first incisor, with a second ?first incisor growing just behind their normal, erupting left first incisor, into the roof of their mouth. Another individual (F5) also had evidence of hyperdontia by a left ?C¹ erupting from the roof of their mouth just behind their left I² mesially. However, this individual was missing their normal left C¹, so it is possible this supernumerary tooth was just an abnormal positional growth of their left C¹.

Dental crowding (malocclusion) was present at the left C₁ area of F3; a minor condition. This same individual also had deep wear to their left canines and premolars (upper and lower), which may be evidence of an abrasive diet or bruxism.

F20 (a 20-39-year-old) had signs of molar-incisor hypomineralisation (MIH) on their mandibular teeth, shown by white or yellow-brown patches of enamel rather than the usual white colour of healthy teeth. MIH occurs when there is a disturbance in developing adult incisors and first molars during childhood due to a severe illness.

Finally, an overeruption of a right M³ was found in F23, causing uneven tooth wear to the right maxillary and mandibular molars. This occurs when the matching molar below the overerupted molar is not present.

Congenital defects

Advanced osteophytes were also seen at the femoral and tibial heads of F24, and advanced signs of arthritis (eburnation, pitting), indicating extra stress in the right leg. Pitting and osteophytes were also seen in the right acetabulum, and – although fragmented – appears to be shallow. This individual also had an infection of sorts at their right knee (See section above on joint disease). F24 may have had developmental dysplasia, causing repeated hip dislocations and may have been the cause of the infection at their right knee.

Two individuals (F4, F27) had complete sacralisation of the L5 vertebrae. Both were aged to middle adults; however, one was female, and the other was male. One individual (F28) – an elderly male - showed signs of minor spina bifida, with a neural arch cleft from S3-

S5. Both conditions are formed in utero and would not have caused many issues apart from back stiffness and minor pain.

One individual (F24) suffered from a relatively severe case of thoracolumbar idiopathic scoliosis; the cause is unknown but may be congenital. Although this individual was a young adult when they died, it is unlikely it would have been a direct cause of death.

Lastly, one individual (F22) showed evidence of bilateral pedal symphalangism to their left and right fifth medial and distal phalanges (Photograph 13). A rare condition, it generally occurs from birth and causes a slight restriction and function of the affected digit(s). Modern research has shown symphalangism may be hereditary (Nightingale *et al*, 2020; Poush, 1991; NCBI, 2021).



Photograph 13 Bilateral pedal symphalangism of left and right 5th medial and distal phalanges of F22. The bone on the far right is unaffected phalanx from the same individual.

Disarticulated bone

Quantification

A total of 2,641 fragments of disarticulated bone was recovered, although miscellaneous bone was not counted due to the high level of fragmentation, so the total figure is higher than this. The total weight of disarticulated material is 88.20kg. Table 3 shows the breakdown of fragment count and weight by skeletal element.

Skeletal element	Fragment count	Weight (g/kg)
Cranium and loose teeth	806	16,595g (16.60kg)
Os coxae	159	6,965g (6.97kg)
Sacrum	14	722g (0.72kg)
Scapula	30	617g (0.62kg)
Clavicle	37	444g (0.44kg)
Sternum	2	28g (0.03kg)
Vertebra	81	990g (1.00kg)
Tarsal, carpal, metacarpal, metatarsal and phalanges	248	1,581g (1.58kg)
Rib	196	770g (0.77kg)
Mandible	30	633g (0.63kg)
Femur	445	31,765g (31.77kg)
Tibia	247	14,186g (14.19kg)
Fibula	37	827g (0.83kg)
Humerus	135	4,842g (4.84kg)
Radius	101	1,656g (1.67kg)
Ulna	71	1,523g (1.52kg)
Patella	2	27g (0.03kg)
Misc.	Not recorded	3,977g (3.98kg)
TOTAL:	2,641	88,198g (88.20kg)

Table 3 Breakdown of disarticulated remains fragment count and weight, grouped by skeletal element.

MNI

The left femoral head was used to establish MNI for disarticulated material and was estimated at 45 individuals (37 adults and 8 juveniles).

Age at death

Amongst the femurs used to estimate MNI, one was measured to be 1-1.5 years old, and another was measured to be 4-4.5 years old. The rest were aged using femoral epiphyseal fusion; four were completely unfused, five were almost wholly fused, 25 were fully fused, two were fully fused with age-related degenerative changes, and one was indeterminate.

Three humeri were estimated to be the following: 9-13 prenatal weeks, 1.5-2 years old, and 2-3 years old. A radius was measured and estimated to belong to a 3-6 months old individual. One tibia was aged to an individual between 28-34 prenatal weeks. Chart 6 shows all of these ages presented together; a total of 38 individuals were aged.

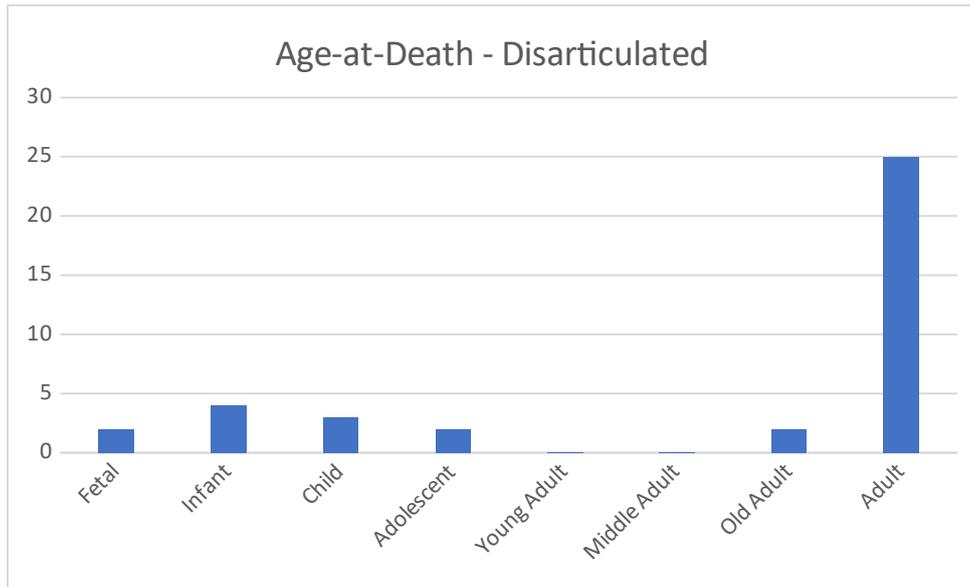


Chart 6: Age at death estimations for disarticulated remains.

Sex estimation

Sex was estimated using femoral head diameters and femur lengths used to estimate the MNI. The measurement of femoral heads was estimated for 25 individuals, and there were 12 males/?males, 11 females/?females, and two indeterminate. The average femoral head diameter was 43.28mm, and the range was 38.9-54.4mm.

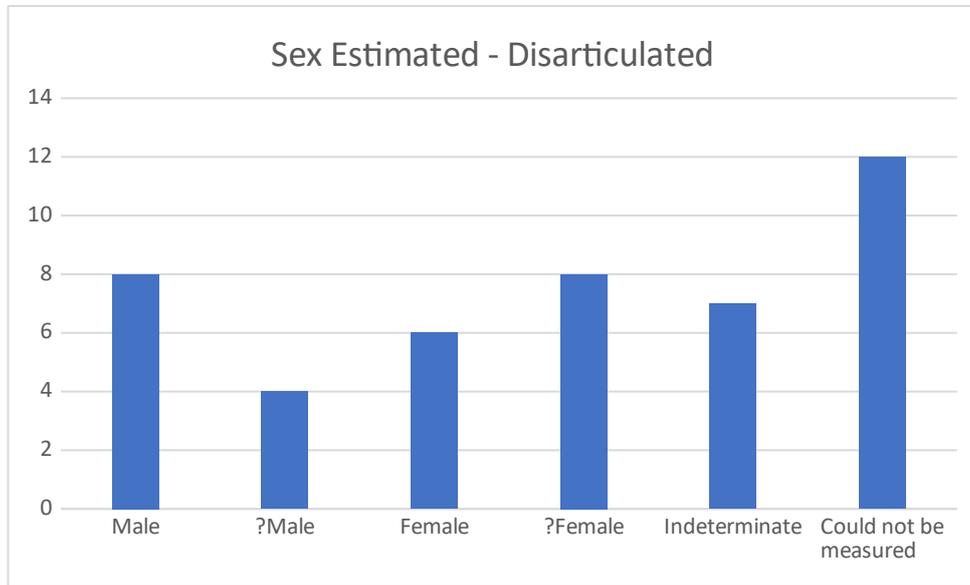


Chart 7 Sex estimations for the disarticulated remains.

Of the 20 that could not be measured, two could be measured for femur length; one was determined to be ?female, the second female. However, six of the 20 were immature femurs, and therefore sex could not be estimated.

To conclude, there are estimated to be at least 12 males/?males, 14 females/?females, seven indeterminate, and 12 could not be measured (see chart 7).

Stature

Using complete, adult left and right femurs only, stature could be estimated for three individuals; two left femurs, one right femur (see Table 4).

	Sex	Length (cm)	Average stature	Min-Max Range
Left femur, one	?female	42.2cm	159.55cm (5'3")	154.61-166.85cm (5'1"-5'5½")
Left femur, two	?female	44.4cm	164.37cm (5'4½")	158.89-171.91cm (5'2½"-5'7½")
Right femur, one	?male	47.4cm	174.27cm (5'8½")	170.12-179.09cm (5'7"-5'10½")

Table 4 Stature estimations from disarticulated remains.

Pathologies and non-metric traits

Infectious disease

Mastoiditis was surprisingly high in an assemblage of this size. Two examples of bilateral mastoiditis were found, with 26 examples also found in 13 left, 13 right mastoid processes; the condition of the mastoid process varied from slight damage to complete destruction. The bacteria that can cause mastoiditis belong to the genera *Streptococcus*, *Staphylococcus*, *Haemophilus* and *Moraxella*; these can cause serious illnesses such as influenza, pneumonia and meningitis. Thus, the high percentage of mastoiditis may have been due to these illnesses, which can be possible causes of death for these individuals.

Trauma

There are two possible examples of perimortem trauma to one left and one right tibia, which may belong to one or two individuals. The location of this trauma is the same on each tibia; two rounded depressions on the anterior, proximal tibial head next to the tibial tuberosity. This trauma may have been caused by a weapon or tool with a sharp point, but may have occurred at the time of burial.

Another tibia was found with a poorly healed, mid-shaft oblique or spiral fracture (open). The poor healing has resulted in displacement and overlap at the site of the fracture (Photograph 14). There does not seem to be evidence of an infection, but the healing of the fracture would have caused difficulty in mobility.



Photograph 14 Badly healed tibia fracture (disarticulated remains).

Depressions of the preauricular surface of three os coxae were found, which may be parturition scars (Photograph 15). Parturition scars are found in two other areas of the pelvis (dorsal pubic surface and pubic tubercle), but these had not survived in the three os coxae mentioned above. They are indicators of high stress a female's body is put under during the pregnancy and birthing process and are left as "scars" on the bone. The body can generally repair itself of these parturition scars, but can take many years to do so.

Joint disease

Evidence of arthritis was noted on at least two vertebrae, pelvis, and femurs in the form of deep pitting, osteophytes, and eburnation. These may be age, trauma or occupation-related. Entesophytes (bony spurs) were also found on two calcanei at the location of the Achilles' tendon, which may have been as the result of an injury to this tendon, or an unknown disease (Weiss 2015).

Schmorl's Nodes were found on just two thoracic vertebrae, which may belong to one or two individuals.

Metabolic disease

Cribra orbitalia was found on five orbital sockets, one of which was a juvenile. Cribra orbitalia is a sign of chronic iron-deficient anaemia, usually caused by a lack of it in the individual's diet throughout their childhood.



Photograph 15 A fragment of pelvis from the disarticulated remains, showing signs of parturition scars of the preauricular surface (white arrow).

Neoplastic disease

No evidence of neoplastic disease was found.

Dental conditions

Antemortem tooth loss was the most common dental condition found amongst the disarticulated remains, with it being found on nine separate fragments. Dental caries were found five times, with two examples of dental calculus and just one dental abscess found. One edentulous mandible was also found.

Congenital defects

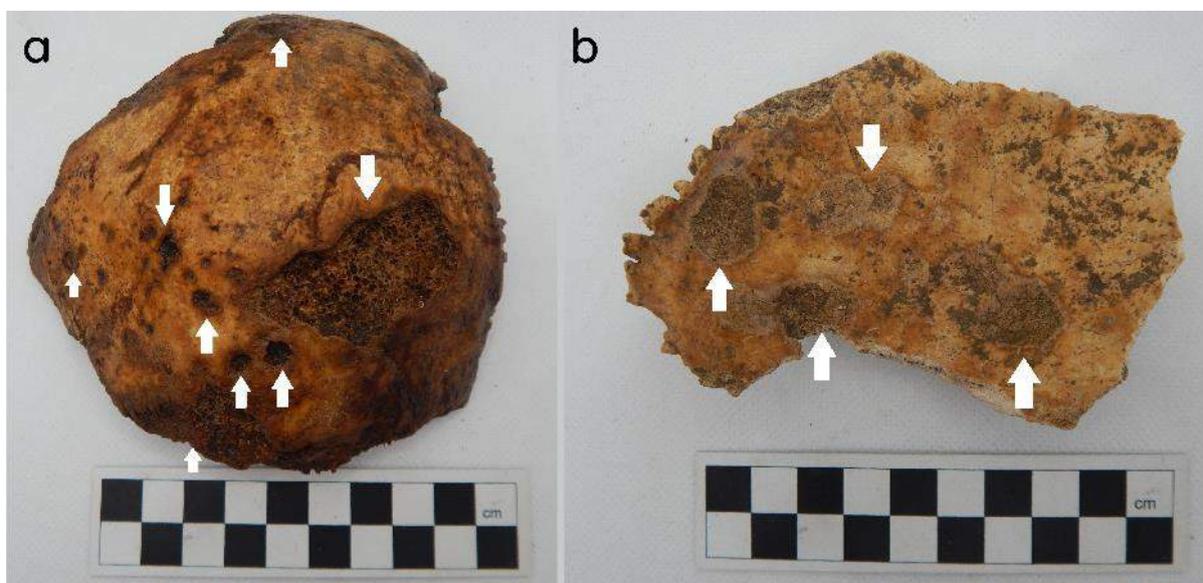
No evidence of congenital defects were found.

Other pathologies

Ectocranial lesions were found on three cranial fragments, all adult, frontal and parietal pieces (Photograph 16a). Endocranial lesions were found on two cranial fragments, both either occipital or parietal (Photograph 16b). The exact causes of the endocranial lesions are unknown but may indicate a childhood illness, trauma or tumour. One of the fragments with ectocranial lesions may be diagnosed as venereal syphilis due to the "worm-eaten" appearance (Roberts & Manchester 2010: 210). The other fragments are lytic and may be signs of tumours. However, the entire skull would be needed to make a firm analysis. It must also be noted that lesions in disarticulated remains could have been caused post-mortem by animals, insects, or other taphonomical changes post-deposition. Several skull fragments were found with deep meningeal vessel grooves on the inside of the skull, which is one symptom of Paget's Disease (Roberts & Manchester 2010: 251) due to increased blood flow. However, it may also be signs of other conditions that can cause increased blood flow in the brain, such as strokes, dementia, or conditions causing blood flow restriction. The diagnosis is uncertain with such small fragments out of context.

Non-metric traits

One ?male right humerus had a supratrochlear foramen.



Photograph 16 Cranial fragments showing lesions of unknown diagnosis from the disarticulated remains. a) ectocranial lesions, shown by white arrows. b) endocranial lesions, shown by white arrows

Ceramic finds

by Dr Matthew Loughton

The excavation uncovered a modest assemblage of pottery and ceramic building material (henceforth CBM) with 111 sherds of pottery with a weight of 2,607 gr and 0.73 vessels according to the rim EVE (Table 5). The mean sherd weight is only 23 gr.

Ceramic material	nr	Weight (g)	MSW (g)	Rim EVE
Pottery	73	914	13	0.73
CBM	38	1,693	45	-
All	111	2,607	23	0.73

Table 5 Details on the main types of ceramics and pottery.

This material was recovered from 16 graves and one layer (Table 6). The largest assemblage is the 25 sherds with a weight of 327 gr. from the grave F13 followed by the grave F18 with 18 sherds with a weight of 117 gr. (Table 6).

Cxt	Description	nr	Weight (g)	MSW (g)
F3	GRAVE	6	191	32
F4	GRAVE	8	143	18
F5	GRAVE	1	4	4
F12	GRAVE	1	3	3
F13	GRAVE	25	327	13
F14	GRAVE	4	324	81
F15	GRAVE	2	65	33
F18	GRAVE	18	117	7
F19	GRAVE	1	116	116
F20	GRAVE	10	95	10
F22	GRAVE	14	671	48
F23	GRAVE	5	26	5
F24	GRAVE	2	59	30
F25	GRAVE	1	3	3
F27	GRAVE	2	54	27
F30	GRAVE	4	31	8
L1	TOPSOIL	7	378	54
Total		111	2,607	23

Table 6 Quantities of pottery and CBM by features and layers.

Roman Pottery

There was a small quantity of Roman pottery with six sherds with a weight 60 gr. Most of this (nr 5/24 gr) consists of Roman coarse, grey ware (fabric GX) pottery of which was recovered from the grave F13, grave F20, and the topsoil L1. Finally, the grave F24 contained one sherd with a weight of 36 gr from a southern Spanish Baetican amphorae, perhaps on account of its thinner construction from the Haltern 70 which carried *defrutum*.

Post-Roman Pottery

Post-Roman pottery was recorded according to the fabric groups from CAR 7 (Cotter 2000) while the number of vessels was determined by rim EVE (estimated vessel equivalent) (Table 7).

The assemblage consists of only 67 sherds with a weight of 854 gr and 0.73 vessels (Table 8). Small quantities of Post Roman pottery was recovered from 15 graves and one layer (Table 9). Most of the Post Roman pottery dates to the Post-Medieval and Modern period except for six sherds (44 gr) of Medieval Colchester-type ware (c.1200-1550) (Table 8).

Fabric code	Fabric description	Fabric date range guide
F21	Colchester-type ware	c.1200-1550
F40	Post-medieval red earthenwares	c.1500-19th/20th century
F40A	Metropolitan slipware	17th-18th century
F42	Border ware	16th-17th century
F45	Unid. stoneware	14th-19th century
F45D	Frechen stoneware	16th-17th century
F45F	Westerwald stoneware	17th-18th century
F45M	Modern English stoneware	19th-20th century
F46	Netherlands, Anglo-Netherlands and English tin-glazed earthenwares	Mid-16th-18th century
F47	Staffordshire-type white stoneware	1725-1775
F48D	Staffordshire-type white earthenwares	19th-20th century
F50	Staffordshire-type slipware	1650-1800
F50A	Staffordshire-type iron-streaked earthenware	c.1680-1750
F51A	Late slipped kitchenware	19th-20th century

Table 7 Post Roman pottery fabrics recorded.

Fabric Group	Fabric description	nr	weight (g)	MSW (g)	EVE
F21	Colchester-type ware	6	44	7	0.00
F40	Post-medieval red earthenwares	21	324	15	0.21
F40A	Metropolitan slipware	2	140	70	0.03
F42	Border ware	2	6	3	0.00
F45	Unid. stoneware	2	11	6	0.06
F45D	Frechen stoneware	1	17	17	0.00
F45F	Westerwald stoneware	4	71	18	0.08
F45M	Modern English stoneware	5	135	27	0.00
F46	Netherlands, Anglo-Netherlands and English tin-glazed earthenwares	3	15	5	0.00
F47	Staffordshire-type white stoneware	1	6	6	0.00
F48D	Staffordshire-type white earthenwares	14	68	5	0.35
F50	Staffordshire-type slipware	3	11	4	0.00
F50A	Staffordshire-type iron-streaked earthenware	1	1	1	0.00
F51A	Late slipped kitchenware	2	5	3	0.00
Total		67	854	13	0.73

Table 8 Details on the Post-Roman pottery.

Cxt	Description	nr	Weight (g)	MSW (g)	EVE
F3	GRAVE	4	41	10	0.10
F4	GRAVE	7	123	18	0.09
F5	GRAVE	1	4	4	0.13
F12	GRAVE	1	3	3	0.00
F13	GRAVE	10	54	5	0.00
F15	GRAVE	2	65	33	0.07
F18	GRAVE	12	41	3	0.10
F19	GRAVE	1	116	116	0.00
F20	GRAVE	7	63	9	0.00
F22	GRAVE	6	81	14	0.02
F23	GRAVE	5	26	5	0.00
F24	GRAVE	1	23	23	0.00
F25	GRAVE	1	3	3	0.12
F27	GRAVE	2	54	27	0.08
F30	GRAVE	4	31	8	0.00
L1	TOPSOIL	3	126	42	0.02
Total		67	854	13	0.73

Table 9 Quantities of Post Roman pottery by features and layers.

Sherds of Post-medieval red earthenwares (fabric F40) are the most common pottery group in the assemblage with examples of large bowls/pancheons (EVE: 0.10) from the feature F3, small-medium bowl with paired-handles (EVE: 0.02) from the grave F22, a medium-sized bowl from the grave F24, a strainer or cheese press (EVE: 0.07) from the grave F3, and a large storage jar (EVE:0.02) from the topsoil L1. Sherds of Staffordshire-type white earthenwares (fabric F48D) dating to the 19th-20th century are the next most common type of pottery including a cup (EVE: 0.12) which came from the grave F25. Other noteworthy finds included sherds from Metropolitan slipware (fabric F40A) dishes with slip trailed decoration dating to the 17th-18th century which were recovered from the grave F4 (EVE: 0.03) and the grave F19. Rare sherds of Staffordshire-type slipware (fabric F50) and Staffordshire-type iron-streaked earthenware (fabric F50A) pottery dating to the mid/late 17th to the mid/end of the 18th century were recovered from the grave F4, grave F20 and grave F23. Sherds of Late slipped kitchenware (fabric F51A) including a bowl with iron-mottled decoration (Cotter 2000, 255 fig. 171 no. 2) dating to the 19th-20th century, were recovered from the grave F13 and grave F23.

Ceramic building material (CBM)

CBM consist of only 38 sherds with a weight of 1,693 gr (Table 10). Most of the CBM consists sherds of Medieval-Post Medieval peg-tile, which was recovered from the feature F3, grave F13, grave F14, grave F18, grave F20, grave F22, and the topsoil L1. A small quantity of Roman CBM including sherds of brick (RB), flue-tile (RFT) and *Opus signinum* (OS) was also recovered from the grave F3, grave F4, grave F13, grave F18 and the grave F22.

CBM code	CBM type	nr	Weight (g)	MSW (g)
Roman				
RB	Roman brick	4	73	18
RFT	Roman flue-tile	2	134	67
RBT	Roman brick or tile (general)	3	63	21
OS	<i>Opus signinum</i>	1	9	9
Post-Roman				
PT	Peg-tile	24	960	40
BR	Brick	3	247	82
FT	Floor tile	1	207	207
Total		38	1,693	45

Table 10 Building material by period and type.

Conclusion

Table 11 summarizes the dating evidence for the features and layers which produced dateable ceramic finds. The majority of pottery dates from the mid/late 17th to the 19th-20th century. The Roman pottery and CBM suggests a nearby Roman site and possibly a villa although the Roman CBM could have been re-used.

Cxt	Feature type	Roman	Post-Roman	CBM	Overall date Approx.
F3	GRAVE		F40 (Large bowl/pancheon)	RFT PT	c.1500-19th/20th century
F4	GRAVE	-	F21 F40 F40A (Dish) F45 (Tankard/mug) F45F F45M F50	RBT	17th-18th or 19th-20th century
F5	GRAVE	-	F48D (Cup)	-	19th-20th century
F12	GRAVE	-	F40		c.1500-19th/20th century
F13	GRAVE	GX	F21 F40 F47 F48D F51A (Bowl)	RB PT	19th-20th century
F14	GRAVE	-	-	PT FT	Medieval-Post Medieval
F15	GRAVE	-	F40 (Strainer/cheese press) F48D	-	19th-20th century
F18	GRAVE	-	F21 F40 F42 F45M F48D	RBT PT BR	19th-20th century
F19	GRAVE	-	F40A (Dish)	-	17th century
F20	GRAVE	GX	F45 F45F F45M F46	OS PT	19th-20th century
F22	GRAVE	-	F21 F40 (small-medium bowl with paired-handles) F45F F48D	RFT RBT PT BR	19th-20th century
F23	GRAVE	-	F45D F48D F50 F50A F51A	-	19th-20th century
F24	GRAVE	BAET (H70)	F40 (Medium-sized bowl)	-	c.1500-19th/20th century
F25	GRAVE	-	F48D (Cup)	-	19th-20th century
F27	GRAVE	-	F45F (Jar) F46	-	17th-18th century
F30	GRAVE	-	F40 F48D	-	19th-20th century
L1	TOPSOIL	GX	F40 (Large storage jar) F45M	PT	19th-20th century

Table 11 Approximate dates for the individual features and layers.

Worked flint

by Adam Wightman

Six worked flints were recovered during the fieldwork. These consisted of three flakes and a small blade from grave F13, two small flint flakes from grave F18 and a flaked flake from grave F22.

The blade from F13 appears to have been detached from its parent core with a punch or soft-hammer and has evidence of edge-wear or use-damage on the left lateral edge. One flake from grave F13 is small with a plunge fracture at the distal end and also appears to have been detached using a soft-hammer. This piece also has retouch on the left lateral edge (ventral face). The other flakes from F13 are a waste flake which is broken at the distal end and on the left lateral edge and a small flake which is broken on the left lateral edge and exhibits evidence of edge-wear or use-damage. One of the flakes from grave F18 is a tertiary hard-hammer flake with a plunge fracture at the distal end and evidence of use-wear or edge-damage on the right lateral edge. The other flake from F18 is a broken waste flake which could have been discarded as part of the knapping process. The flake from F22 appears to have struck from the ventral face of another large flake (using the same platform) creating a flaked flake (also known as a Janus flake). There is evidence of rough retouch on one lateral edge and on the distal end of the flaked flake.

It is likely that small blade and retouched soft-hammer flake from F13 date to the Mesolithic or Early Neolithic. The rest of the flakes are not closely dateable. The broken flakes and waste flake could be waste products from the shaping of flint nodules prior to their incorporation into the walls of St Mary's Church. However, the blade and the two retouched flakes suggest that flint artefacts were being knapped/used on the site during the prehistoric period and it is possible that the other flakes also date to the prehistoric period.

The coffin furniture and other small finds

by Laura Pooley

Coffin furniture and other small finds were recovered from 20 graves at St Mary's Church. The coffin furniture included coffin nails, upholstery studs, handles and grip plates. Copper-alloy dress/shroud pins were recovered from many of the graves, and two buckle frames, a buckle plate, button and 17th-century trade token were also recorded.

The coffin furniture

Burial in a coffin became common from the late 17th century onwards with coffin decoration becoming increasingly more elaborate by the early 18th century (Webb & Norton 2009, 173). The outer side and lid panels of coffins were covered in textiles held in place by decorative patterns of round-headed metal upholstery studs, with inner linings glued, stitched and tacked in place (Webb & Norton 2009, 173; Janaway 1998, 21-22). Handles, usually fixed to the coffin using decorative grip plates, were placed at intervals around the outside, normally three to each side and one at each end for an adult-sized coffin, or two per side for a child-sized coffin (Reeve & Adams 1993, 83). Other decorative features could include breastplates, headplates, footplates, lid motifs and escutcheons (Webb & Norton 2009, 174).

Coffin furniture was found in 20 of the graves from St Mary's Church (F2, F3, F4, F5, F13, F14, F16, F18, F19, F20, F21, F22, F23, F24, F25, F26, F27 and F29). The most common form of coffin furniture was iron coffin nails, followed by copper-alloy and iron upholstery studs, then iron handles, with only three complete/almost complete iron grip plates. There was also one example of a copper-alloy nail encased in wood which must also be coffin furniture but is the only example from the site. There was no evidence for any other decorative metalwork on the coffins, such as breastplates *etc*, but these are often associated with high-status burials. Made from iron, the handles and grip plates from St Mary's were in the cheapest metal available (Webb & Norton 2009, 159).

The iron coffin nails from the site had narrow rectangular-sectioned shanks that were usually covered in mineralised wood and, if present, had a small rectangular-shaped head. Only a few nails were recorded with flat round heads, and they were generally larger. Completeness was difficult to determine, but the nails from most of the graves ranged in length from 34mm to 76mm. However, the nails from F20 were much larger ranging from 85mm to 120mm, with most over 95mm long.

The number of coffin nails recovered from the graves varied widely from 64 (F13) to less than five (F2, F19, F24, F25 and F27). Where low numbers of nails were recovered they could be residual in these contexts but many of the graves had been severely truncated and, for example, the presence of only two nails in F2 is perhaps not surprising. Furthermore, as coffins could also be made without nails some may have only needed a few nails to help secure the joints.

All of the upholstery studs, both copper-alloy and iron, had round convex heads with short tapering square-sectioned shanks. The copper-alloy upholstery studs were recorded in two sizes. From Grave F4 were studs at c 7mm long with heads of c 6mm diameter, and from Graves F4, F13, F14, F16, F23 and F30 were studs c 10-12mm long with heads of c 12mm diameter. Iron upholstery studs from Graves F4, F13, F14, F18, F23, F29 and F30 ranged from c 13-17mm long with heads of c 14-19mm diameter. Totalling 88 studs, F13 produced the most by far, followed by F18 (x29) and F4 (x20) with the rest ranging from 1-15 studs. Where low numbers of studs were recovered they are likely to be residual finds.

A single iron handle with or without an iron grip plate came from graves F2, F3, F4, F5, F18, F23, F27 and F30. The grip plates were bone- or lozenge-shaped with either angled or rounded handles, similar to those recovered from the site during the evaluation (CAT Report 1551, SF1-8 and SF11-19), with all of the handles without grip plates being of

rounded form. Grave F2 had been severely truncated and only the foot of the grave had survived, so the presence of just one handle and plate in this grave is to be expected. However, it is difficult to determine if the remaining handles are residual from earlier truncated coffins or if these are the original coffin handles with their counterparts since being truncated themselves.

Multiple iron handles, of rounded and angular type, came from coffins within graves F13 and F20. Interestingly, five of the six handles from F20 were rounded with the sixth being angled, although it is unclear how common, or otherwise unusual, it would have been to use two different types of handle on the same coffin. Unfortunately, the position of the angled and rounded handles in the grave was not recorded to determine if perhaps the angled example came from the head or foot of the coffin.

Also recovered from topsoil and as unstratified finds were six handles with grip plates (SF48), nine handles (SF47), 25 coffin nails and four iron upholstery studs.

Other small finds

Copper-alloy pins were common finds with at least 37 recovered from six graves (F3, F4, F5, F13, F18, F29 and F30) and another possible fragment from F20. Used as dress/shroud pins to secure burial clothing, they could also be used within coffins to secure linings and furnishings (Cox 1996, 52).

A 17th-century trade token from Grave F15 was found on top of disarticulated human remains and is probably residual in this context. A 17th-century buckle came from F18 and a 19th-century button from F13. Interestingly a medieval buckle frame and post-medieval buckle plate both came from grave F20, which is discussed further below.

Finds from the graves

The following is a summary of all of the coffin furniture and other small finds from each of the graves. A detailed catalogue of the finds can be found in Appendix 6.

Grave F2: The only pieces of coffin furniture from grave F2 were an iron handle with grip plate from the foot of the coffin (SF27) and two coffin nails (finds no.65). The grip plate is bone-shaped with an elongated oval central panel which tapers sharply at each end to oval-shaped terminals set at 90° (Fig 8.1). The drop-handle is angled, made of a long straight bar (with round cross-section) bent to form two short arms, which are bent again to pass through the looped attachments on the grip plate. Largely hidden within dirt and corrosion, the plate probably includes the remains of two double-spiked loop attachments which held the handle at the front and secured both the handle and plate to the coffin. It is similar to examples found on the development site during the evaluation phase of the project (CAT Report 1551, SF1-8) and to examples recorded at Rivenhall Church to the south-west of Colchester (Rodwell & Rodwell 1993, Fig 23.6).

Grave F3: Coffin furniture from F3 was varied and included an iron handle with grip plate (SF28), 25 iron coffin nails (finds nos. 55 and 64), a copper-alloy nail (SF4) and the head of a copper-alloy nail or stud (SF5). The grip plate is lozenge-shaped with oval-shaped terminals set at 90° at each end (Fig 8.2). The drop-handle is rounded with rounded cross-sectioned, and includes two short arms at each end which would have passed through the looped attachments on the grip plate. Similar handles were recorded during the evaluation (CAT Report 1551, SF11-19) and at Spitalfields, London (Reeve & Adams 1993, Type 2a grips, illustrated in microfiche). Four dress/shroud pins (SF6) also came from the grave.

Grave F4: An iron handle and grip plate (SF29) came from this grave. Like that from F2, the grip plate is bone-shaped and the drop-handle angled (Fig 8.3). Twenty-eight iron coffin nails (finds nos. 57, 62 & 70), 15 copper-alloy upholstery studs (SF8, SF9 & SF10) and five iron upholstery studs (SF39) were also recovered from the grave along with a copper-alloy dress/shroud pin (SF7).

Grave F5: Recovered from F5 was a complete rounded iron coffin handle (SF40), seven iron coffin nails and a screw (finds nos. 73 & 81), and seven fragments from at least two copper-alloy dress/shroud pins (SF16).

Grave F13: Three complete iron coffin handles, half a coffin handle and a further six fragments of handles (SF21) came from the grave, although none of the grip plates had survived (Fig 8.4-8.6). Similar to the handle from F3, they are all examples of rounded handles. Also from the coffin was six copper-alloy upholstery studs (SF19), 82 iron upholstery studs (SF22) and 64 iron coffin nails (finds no.16). Seven dress/shroud pins were also recovered (SF18) along with a 19th-century copper-alloy button (SF17). Two lead strips (SF20) are probably fragments of window comes and residual in this context.

Grave F14: Coffin furniture included a copper-alloy upholstery stud (SF2), 15 iron upholstery studs (SF23) and 23 iron coffin nails (finds no.27).

Grave F15: A copper-alloy trade token (SF1) was found on top of disarticulated human bone within this grave and is probably residual in this context. It is a token of Henry Lamb of Colchester, dated 1665.

Grave F16: A copper-alloy upholstery stud (SF3) is probably residual within this context.

Grave F18: Coffin furniture included 22 iron coffin nails (finds nos. 32 and 33), 29 iron upholstery studs (SF24 and SF35) and a rounded iron coffin handle (SF34). At least 13 copper-alloy dress/shroud pins were also present within the grave (SF31 and SF32) (Fig 10.10) along with an incomplete copper-alloy buckle (SF33) (Fig 10.11). The trapezoidal, double-looped buckle frame has a bevelled outside edge and lobed knobs on either end of the central strap bar. These buckles usually date to the 17th century, c 1620-80 (Whitehead 1996, Chapter 7).

Grave F19: Two iron coffin nails (finds no.31).

Grave F20: Six iron coffin handles (SF25) (Fig 10.12-10.17) were recovered along with 40 iron coffin nails (finds no.39). Five of the drop-handles were rounded in appearance, similar to those from F3 and F13, but with a central swelling. Similar handles have been recorded from Rivenhall Church (Rodwell & Rodwell 1993, Fig 23.1 – handle only) and at Spitalfields, London (Reeve & Adams 1993, Type 1 grips, illustrated in microfiche). Interestingly the sixth handle was angled rather than rounded, similar to the example from F2 and F4, but with two swollen knobs along its length. A fragment of copper-alloy could be part of a dress/shroud pin (SF13), and a copper-alloy buckle (SF11) and buckle plate (SF12) were also recovered.

The copper-alloy buckle and buckle plate are interesting (Fig 10.18-10.19). The two were found as separate pieces but close together between the knees of the skeleton. The buckle is of typical medieval form, dating c 1250-1500, with D-shaped frame and narrowed, off-set strap bar (Whitehead 1996). However, the buckle plate appears to be of a post-medieval type commonly used on double-looped buckle frames, and is actually too large to have fit properly around the strap bar of the frame. It is possible that this is an example of a medieval frame being reused in the post-medieval period, or perhaps the two pieces were never used together even though they were buried in the same grave. It is perhaps unlikely given how close they were found that either one or both are residual.

Grave F21: Five iron coffin nails (finds no. 41).

Grave F22: Seventeen iron coffin nails and one iron screw (finds nos. 43 and 44).

Grave F23: A single rounded iron coffin handle (SF41) came from the grave along with ten iron and one copper-alloy upholstery studs (SF42). Twenty-two iron coffin nails were

also recovered along with 34 very small and fragmentary pieces of iron plate which probably came from a grip plate or plates (finds no.47).

Grave F24: Three iron upholstery studs (SF36) and an iron nail along with two fragments of corroded iron (finds no. 45).

Grave F25: Three iron coffin nails (finds no. 49).

Grave F26: Twenty-six iron coffin nails (finds nos. 61 and 68) and one iron upholstery stud (SF37) came from the grave. The stud is probably residual in this context.

Grave F27: A single rounded iron coffin handle (SF43) came from the grave along with three iron coffin nails (finds no.51).

Grave F29: Coffin furniture included 11 iron upholstery studs (SF26) and eight iron coffin nails (finds nos. 76 and 77). Four dress/shroud pins (SF14 and SF38) were also recovered.

Grave F30: Grave F30 also produced a single rounded iron coffin handle (SF45) along with five iron and two copper-alloy upholstery studs (SF44) and a fragment of dress/shroud pin (SF15). Eight coffin nails were also recovered (finds no. 80). A lead strip (SF46) is probably a fragment of window came and residual in this context.

Grave F3, F4 or F26: Two iron handles (SF30) were recorded as coming from graves F3, F4 or F26. One was a rounded handle and the other a small angled handle, possibly from the coffin of a child.

Miscellaneous finds

by Laura Pooley

Fragments of clay tobacco pipe, bottle glass, window glass, oyster shell and coal/coke came from the backfill of some of the graves and were also recovered from L1 as unstratified finds. All of this material has been recorded in Table 12 and discarded.

Context	Finds no.	Description	Date
F3	55	Clay tobacco pipe: Two stem fragments, 8.0g Glass: Fragment of bottle glass from a push-up base, olive green, covered in thick iridescence, 71.4g Shell: Fragment of oyster shell, 15.3g	Post-medieval
F3, F4, F26	54	Glass: Fragment of bottle glass from a push-up base, olive green, covered in thick iridescence, 39.6g	Post-medieval
F4	70	Clay tobacco pipe: One stem fragment, 1.8g. Glass: Fragment of window glass, pale yellowy-green, covered in thick iridescence, 1.2g	Post-medieval
F5	81	Glass: Fragment of bottle glass, olive green, covered in thick iridescence, 23.0g. Coal/coke: Fragment, 0.9g	Post-medieval
F13	16	Clay tobacco pipe: Two stem fragments, 5.5g. Glass: Fragment of bottle glass, olive green, covered in thick iridescence, 4.3g	Post-medieval
F18	32	Clay tobacco pipe: Two stem fragments, 7.4g Glass: Five fragments of bottle glass, olive green, covered in thick iridescence, 22.4g	Post-medieval
F20	37	Glass: Three fragments of bottle glass, green, covered in thick iridescence, 37.1g. Coal/coke: Fragment, 10.4g.	Post-medieval
F21	41	Clay tobacco pipe: Four stem fragments, 15.8g. Glass: Fragment of flat window glass, slight greenish-tinge, 4.8g.	Post-medieval
F22	43	Clay tobacco pipe: One stem fragment, 1.8g. Glass: Fragment of glass from the push-up base of a straight-sided bottle, olive green, covered in thick iridescence, 508.7g	Post-medieval
F23	47	Clay tobacco pipe: One stem fragment, 2.4g.	Post-medieval
F30	80	Glass: Two fragments of bottle glass, green, covered in thick iridescence, 19.1g. Coal/coke: Fragment, 14.8g.	Post-medieval
L1	-	Clay tobacco pipe: 1) Three stem fragments, 12.9g; 2) Foot fragment with maker's mark initials in raised relief on either side of the base – SC – listed in CAR 5 as Stephen Chamberlain, 18th-early 19th century (CAR 5 , 64); 3) Almost complete bowl (stem missing) of Colchester Type 7 (CAR 5 , 49), dated c 1670-1700. Bottered rim, 20% milled, vertical score line across the base of the foot.	Post-medieval
U/S	-	Clay tobacco pipe: Three stem fragments, 9.0g. Glass: 1) Two fragments of glass from the push-up base of two different wine bottles, olive green, covered in thick iridescence, 513g. 2) Fragment from the base of a wine glass, 29.1g.	Post-medieval

Table 12 Catalogue of miscellaneous finds.

8 Conclusion

Not unsurprisingly given the results of the previous evaluation and the site's location, this excavation exposed a significant number of burials and human remains associated with St Mary's church.

Based on the finds recovered and the presence of substantial amount of coffin furniture within the graves (many pieces of which were *in situ*), it seems that the majority of the burials uncovered on the site date from the 17th century onwards. A similar conclusion was reached during the evaluation phase (CAT Report 1554). Given the 14th-century date of the church, however, it seems almost a certainty that some of the disarticulated remains recovered here pre-date the 17th-century.

The presence of such a large number of disarticulated remains on the site suggests a long history of intercutting graves disturbing human remains. In this light, the relatively intact nature of most of the graves uncovered during this excavation adds further evidence for them being from the latter half of the graveyards use (i.e. 17th century or later). There is, however, the possibility that some of the more truncated burials, that have presumably been impacted by multiple later graves (in particular F2 and F19), may date from the earlier range of this timespan.

The evaluation report suggested that the burials were deeper to the west of the site and shallower to the east. Given the eventual distribution of burials within the excavation (Fig 3), this supposition seems to have been confirmed. No burials were encountered at all in the western 5m of the site, and as the excavation proceeded east burials became more frequent. This is best explained by a change in the ground-level on this side of the church, either through a build-up of soil to the west or a removal of soil to the east (or possibly both). The reasons for this could be many and varied, but it probably bears some relation to the construction of the (now-demolished) southern porch of the church in the 19th century.

Several of the burials appear to be in rows, most prominently the row of F21, F24, F22, F23, and F20. Given this, it seems reasonable to conclude these burials are similar in age. It is probable that the other burials are also in rows, but due to the limited nature of this excavation (i.e. only excavating to the depth required by the foundations) this cannot be proven conclusively.

Of note is that burial F12 lied directly above burials F15 and F17, and in a similar fashion F13 lied directly above F14 (Fig 3). Whether these are family plots or simply represent a re-use of a grave plot is uncertain. If the latter it may suggest that the lower burials are of a relatively earlier date (long enough for any grave marker to have been removed and the plot to have become available for re-use).

In a similar fashion, burials F4, F3 and F26 are all in close proximity, with F26 having been heavily impacted by F3 and F4 having been impacted by F3 (Fig 4). This probably represents a family-plot – some effort has been made to place the burials adjacent rather than directly on-top, and at least some disturbed bones have been retained and placed back into the grave.

The Roman finds and prehistoric worked flint recovered during the excavation are unquestionably residual in their contexts, but serve to show that archaeological sites of these dates may exist nearby.

9 Acknowledgements

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Note: all CAT reports, except for DBAs, are available online in PDF format at <http://cat.essex.ac.uk>

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11 Abbreviations and glossary

Adult	an individual who is aged 18 and over
AOD	A bove O rdnance D atum
Bone cortex	the hard, outer layer of bone, also known as cortical bone
CAT	Colchester Archaeological Trust
CBC	Colchester Borough Council
CBCAA	Colchester Borough Council Archaeological Advisor
CBM	ceramic building material, ie brick/tile
CHER	Colchester Historic Environment Record
CIfA	Chartered Institute for Archaeologists
congenital	a disease or abnormality present from birth
context	specific location of finds on an archaeological site
EHER	Essex Historic Environment Record
feature (F)	an identifiable thing like a pit, a wall, a drain: can contain 'contexts'
?female	possibly identified as female
immature	bone that has not finished growing or fusing
juvenile	an individual who is under the age of 18 years
layer (L)	distinct or distinguishable deposit (layer) of material
?male	possibly identified as male
medieval	period from AD 1066 to c 1500
metabolic disease	diseases affecting your metabolism (your body's ability to convert food to energy)
MNI	minimum number of individuals
modern	period from c AD 1800 to the present
neoplastic disease	diseases causing tumours in the body
NGR	National Grid Reference
OASIS	O nline A ccess to the I ndex of A rchaeological I nvestigations, http://oasis.ac.uk/pages/wiki/Main
Pathology	the causes and effects of diseases
peg-tile	rectangular thin tile with peg-hole(s) used mainly for roofing, first appeared c AD1200 and continued in use to present day, but commonly post-medieval to modern
post-medieval	from c AD 1500 to c 1800
Roman	the period from AD 43 to c AD 410
section	(abbreviation sx or Sx) vertical slice through feature/s or layer/s
WSI	W ritten S cheme of I nvestigation

12 Contents of archive

Finds: one box (pottery, CBM, small finds, all human remains reburied)

Paper record

One A4 document wallet containing:

The report (CAT Report 1687)

CBC evaluation brief, CAT written scheme of investigation

Original site record (layer sheets, finds sheet, sections)

Site digital photos and log

Digital record

The report (CAT Report 1687)

CBC evaluation brief, CAT written scheme of investigation

Site digital photographs, thumbnails and log

Graphic files

Survey data

13 Archive deposition

The paper and digital archive is currently held by the Colchester Archaeological Trust at Roman Circus House, Roman Circus Walk, Colchester, Essex CO2 7GZ, but will be permanently deposited with Colchester Museum under accession code ECC4568.

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Appendix 1 Context list

Context Number	Finds Numbers	Feature / layer type	Description	Date
L1	-	topsoil	soft/friable medium/dark black sandy silt	Modern
L3	79	mixed burial soil	soft dry medium/dark grey/black sandy silt containing large amounts of disarticulated bone	Post-medieval
L4	-	build-up	soft dry dark black sandy silt	post-medieval
L5	-	natural sand	mixed soft light yellow/white sand	post-glacial
F2	65, 66	grave	soft dry medium/dark grey/black sandy silt	17th century or later
F3	54, 55, 56	grave	soft dry medium/dark grey/black sandy silt	c.1500-19th/20th century
F4	57, 58, 59, 62, 63, 67, 69, 70	grave	soft dry medium/dark grey/black sandy silt	17th-18th or 19th-20th century
F5	73, 74, 75, 81	grave	soft dry medium/dark grey/black sandy silt	19th-20th century
F12	12, 13	grave	soft dry medium/dark grey/black sandy silt	c.1500-19th/20th century
F13	14, 15, 16, 17	grave	soft dry medium/dark grey/black sandy silt	19th-20th century
F14	18, 25, 26, 27	grave	soft dry medium/dark grey/black sandy silt	Medieval-Post Medieval
F15	19, 21, 22, 28	grave	soft dry medium/dark grey/black sandy silt	19th-20th century
F16	20, 23	grave	soft dry medium/dark grey/black sandy silt	undated
F17	24, 29	grave	soft dry medium/dark grey/black sandy silt	undated
F18	32, 33, 34, 84, 85	grave	soft dry medium/dark grey/black sandy silt	19th-20th century
F19	30, 31	grave	soft dry medium/dark grey/black sandy silt	17th century
F20	35, 36, 37, 38, 39, 40	grave	soft dry medium/dark grey/black sandy silt	19th-20th century
F21	41, 42	grave	soft dry medium/dark grey/black sandy silt	17th century or later
F22	43, 44	grave	soft dry medium/dark grey/black sandy silt	19th-20th century
F23	47, 48	grave	soft dry medium/dark grey/black sandy silt	19th-20th century
F24	45, 46	grave	soft dry medium/dark grey/black sandy silt	c.1500-19th/20th century
F25	49, 50	grave	soft dry medium/dark grey/black sandy silt	19th-20th century
F26	61, 68	grave	soft dry medium/dark grey/black sandy silt	17th century or later
F27	51, 52, 53	grave	soft dry medium/dark grey/black sandy silt	17th-18th century
F28	71, 72, 78	grave	soft dry medium/dark grey/black sandy silt	undated
F29	76, 77, 86	grave	soft dry medium/dark grey/black sandy silt	17th century or later
F30	80, 82, 83	grave	soft dry medium/dark grey/black sandy silt	19th-20th century

Appendix 2 – Human bone list

Skeleton	Completeness	Condition	MNI	Sex	Age	Stature (avg.)	Stature (min/max)	Non-Metric Traits	Pathologies	Taphonomy
F2	20%	3	1	indeterminate	adult	162.75cm (5'4")	155.83-169.49cm (5'1¼"-5'6¾")	-	1. Injury at subtalar joint – osteophytes at talus and calcaneus	-
F3	90%	3-4	1	?male	30-48	171.11cm (5'7¼")	162.48-178.61 (5'4"-5'10¼")	-	1. healed rib shaft fracture (around 5th-9th rib) 2. unilateral (right) ossification of cartilage at manubrium between connection of first rib 3. evidence of arthritis to vertebrae 4. dental crowding to lower left canine 5. dental abscess to lower left first molar 6. dental abscessed to upper right first premolar to second molar, and upper left first molar 7. dental caries to upper right canine and first molar 8. antemortem tooth loss and alveolar resorption of lower right 1st molar, and all 3 upper left molars 9. lack of lower right third molar 10. possible bruxism or abrasive diet evidenced by deep dental wear to left upper and lower canines and premolars	-
F4	65%/30%	3-4/3-4	2	? female/indet.	30-45/5-6	168.03cm (5'6")/indet.	162.00-175.94cm (5'3¾" - 5'9¼")	-	1. bilateral advanced mastoiditis 2. sacralisation of L5 3. healing fracture of right first rib 4. ?unhealed bilateral fracture to pedicles of C3 5. antemortem tooth with alveolar resorption of lower left first molar 6. lack of upper left third molar 7. teeth in good condition – no calculus seen	1. green staining to several ribs-copper?
F5	10%	2-3	1	? female	18-34	indet.	indet.	-	1. ?hyperdontia of left C ¹ /I ² 2. lack of all four third molars 3. minor dental calculus	-
F12	60%	2	1	female	60+	160.07cm	154.42-	-	1. mid-shaft unhealed spiral fracture to	1. greenish

						m (5'3")	167.84 (5'0¾"-5'6")		right humerus 2. antemortem tooth loss; all molars and left PM ² 3. advanced, uneven tooth wear to all teeth 4. ankylosing spondylitis; 2x 2 vertebral bodies fused, another vertebrae has osteophytic lipping 5. very light and brittle bones – age-related	staining to lower, right femoral shaft and small fragment of skull – copper?
F13	80%	3	1	female	42-65	169.04cm (5'6½")	160.84-181.89cm (5'3¼"-5'11½")	-	1. advanced bilateral mastoiditis – destruction of both mastoid processes 2. unilateral hip arthritis – deep pitting and eburnation to right femoral head, acetabulum and distal femur 3. osteophytic lipping to vertebrae 4. midline ?burst ?fracture to 2 thoracic vertebrae, one is warped in shape – perimortem 5. edentulous mandible 6. significant dental calculus 7. cervical caries to neck of all 10 loose teeth	-
F14	10%	2	1	?male	18-25	171.36cm (5'7½")	167.49-175.94cm (5'6"-5'9¼")	-	-	-
F15	55%	2-3	1	? female	17-29	162.77cm (5'4")	156.73-169.37cm (5'1¾"-5'6¾")	-	-	1. greenish staining to shaft of femur – copper?
F16	15%	1-2	1	?male	adult	160.00cm (5'3")	154.82-166.90cm (5'1"-5'5¾")	-	-	-
F17	15%	3	1	?male	adult	175.50 (5'9")	173.13-182.49 (5'8"-5'11¾")	-	1. rounded depression to superior vertebral body, towards posterior – not schmorl's nodes?	-
F18	80%	3-4	1	? female	15-24	167.89cm (5'6")	160.64-178.61cm (5'3¼"-5'10¼")	-	1. advanced bilateral mastoiditis – destruction of both mastoid processes 2. dental calculus to most teeth 3. dental caries to left M ₁	1. greenish staining to right outer mandible – copper?
F19	10%	2	1	?male	adult	-	-	-	-	-
F20	40%	1-2	1	? female	20-39	167.08cm (5'5")	161.03-175.82cm	-	1. dental caries to left and right M3 2. something with mandibular crowns?	-

						¾")	(5'3 ¼"-5'9 ¼")			
F21	45%	2-3	1	female	40-60	170.77cm (5'7")	162.98-181.67cm (5'4"-5'11½")	-	1. signs of arthritis throughout skeleton	-
F22	90%	3-4	1	? female	30-46	169.65cm (5'6 ¾")	157.73-177.76cm (5'2"-5'10")	-	1. symphalangism (ankylosis) to right, foot 5th distal and medial phalanges 2. antemortem tooth loss to all mandibular molars (apart from right M3) and mandibular premolars 3. joint lesion to site of infraspinatus muscle at right humeral head – rotator cuff? 4. pitting to right humeral head and right radial head – occupational related arthritis?	-
F23	65%	2-3	1	?male	25-35	164.91cm (5'5")	162.41-184.55cm (5'4"-6'0")	-	1 over-eruption of left third molar? 2 left femoral head has completely fused to acetabulum (ankylosis). Cause unknown; congenital defect, fracture to left hip, or other trauma to area. 3 badly healed fracture to left, lateral clavicle with fusion of dislocated ends 4 osteophytes present to thoracic vertebral bodies, focused to right side of body 5 semi-sagittal cleft to inferior thoracic vertebrae – congenital defect? 6 dental caries to left M2, left M3, upper PM1	-
F24	50%	3	1	? female	21-30	167.78cm (5'6")	161.08-174.73 (5'3¼"-5'8¾")	-	1. thoracolumbar idiopathic scoliosis 2. osteophytic lipping, eburation and pitting to femoral head (right) 3. possible Hematogenous Osteomyelitis or septic arthritis in right knee 4. antemortem tooth loss with alveolar resorption of most teeth on surviving mandible 5. osteophytes presents to several vertebrae	-
F25	35%	2-3	1	-	7-12	-	-	-	-	-

F26	50%	2	1	male	25-40	175.91cm (5'9¼")	167.18-188.45cm (5'5¾"-6'2")	-	<ol style="list-style-type: none"> 1. ?well healed left clavicle fracture (sternal end) 2. minor dental calculus 3. unilateral mastoiditis (right), resulting in complete destruction of mastoid process - cause of death? 4. strong and robust muscle attachments 5. osteophytes covering left humeral head – beginning of occupation-related arthritis? No arthritis seen in left leg 6. n.b. apart from calculus, teeth are in very good condition (normal wear, no caries, no antemortem tooth loss) 	1. two post-mortem cuts to femoral head – likely occurred during cutting of F3 grave adjacent to F26
F27	50%	3-4	1	male	27-40	179.15cm (5'10½")	174.07-184.94cm (5'8½"-6'0¾")	-	<ol style="list-style-type: none"> 1. sacralisation of L5 2. periostitis to left proximal tibia and fibula shaft; also present in right tibia and fibula, but less so 3. osteophytes to lumbar vertebrae 	1. green staining to left calcaneus and left fibula
F28	40%	2-3	1	male	63-75	177.90cm (5'10")	170.60-187.72cm (5'7"-6'2")	-	<ol style="list-style-type: none"> 1. small button osteoma above right eye 2. minor spina bifida from S3-S5 3. antemortem tooth loss to all but four teeth on mandible 4. advanced DISH to vertebral column 5. schmorl's nodes to all thoracic bodies 6. advanced arthritis to vertebrae, pelvis, ribs 7. healed rib fracture to unknown rib, mid-shaft 8. very robust bones, especially humerus, clavicles (?long term manual labour) 	-
F29	15%	2-3	1	Indet.	3-5	Indet.	Indet.	-	1. hyperdontia of upper left ?first incisor (erupting into roof of mouth)	-
F30	75%	3	1	? female	25-40	164.34cm (5'4¾")	154.06-177.41cm (5'0½"-5'9¾")	1. supratrochlea foramen in left humerus, and a very small one in right	<ol style="list-style-type: none"> 1. ankylosing spondylitis in two places to spine and ribs – affecting 1 lumbar and 2 thoracic (separate) then 9 thoracic, 2 right ribs and 1 left rib 2. osteophytic lipping to a thoracic vertebrae 3. dental calculus 4. bilateral ?mastoiditis – mastoid processed degrading but not destroyed 5. antemortem loss of left and right M1, M2, and left M3, plus ?left PM2-M2 	-

Appendix 3 – Dental conditions

Skeleton	Tooth loss	Dental abscess	Dental caries	Dental calculus	Hypodontia (third molar)	Hyperdontia	Dental crowding
F3	✓	✓	x	x	✓	x	✓
F4	✓	x	x	x	✓	x	x
F5	x	x	x	✓	?✓	✓	x
F12	✓	x	x	x	x	x	x
F13	✓	x	✓	x	x	x	x
F18	x	x	✓	✓	x	x	x
F20	x	x	✓	x	x	x	x
F22	✓	x	x	x	x	x	x
F23	x	x	x	x	x	x	x
F24	✓	x	✓	x	x	x	x
F26	x	x	x	✓	x	x	x
F28	✓	x	x	x	x	x	x
F29	x	x	x	x	x	?✓	x
F30	✓	x	x	✓	x	x	x

Appendix 4 - Pottery list

Cxt	Feature type	Find no.	Soil S no.	NR	GR.	MSW	Discard	Rim	Handle	Base	Stamp	Graf Pre-F	Graf Post-F	Wmd	Soot	Pitting	Burn	Overfired	Residue	Resin Lin.	Gritted	Abraded	Modif.	Mark	Repair hole	Hole	Disc	Disc diam.	Polishing	Fabric Grp	Typology	EVE	Diam.	Comments	Date
F3	GRAVE	54		1	14	14		1	0	0																			F40	LARGE BOWL/PANCHEON	0.05	200		c.1500-19TH/20TH CENTURY	
F3	GRAVE	55		3	27	9		1	0	0																			F40	LARGE BOWL/PANCHEON	0.05	290		c.1500-19TH/20TH CENTURY	
F4	GRAVE	57		1	32	32	X																						F40					c.1500-19TH/20TH CENTURY	
F4	GRAVE	57		1	5	5		1	0	0																			F45	TANKARD/MUG	0.06	90		LATE 16TH-18TH CENTURY	
F4	GRAVE	70		1	28	28	X																						F45M			?		19TH-20TH CENTURY	
F4	GRAVE	70		1	6	6	X																						F50					1650-1800	
F4	GRAVE	70		1	24	24		1	0	0																			F40A	DISH	0.03	380		17TH-18TH CENTURY	
F4	GRAVE	70		1	15	15																							F21				GLAZE INT & EXT	c.1200-1550	
F4	GRAVE	70		1	13	13		0	0	1																				F45F					17TH-18TH CENTURY
F5	GRAVE	73		1	4	4		1	0	0																			F48D	CUP	0.13	80		19TH-20TH CENTURY	
F12	GRAVE	13		1	3	3																							F40					c.1500-19TH/20TH CENTURY	
F13	GRAVE	16		1	20	20																							F40					c.1500-19TH/20TH CENTURY	
F13	GRAVE	16		1	3	3																							F51A				BOWL WITH IRON-MOTTLED DEC.	19TH-20TH CENTURY	
F13	GRAVE	16		4	17	4		0	1	1																			F48D					19TH-20TH CENTURY	
F13	GRAVE	16		1	6	6																							F47					18TH CENTURY	
F13	GRAVE		1	1	2	2																							F48D					19TH-20TH CENTURY	
F13	GRAVE		1	1	5	5																							F21				LATE	c.1200-1550	
F13	GRAVE		1	1	8	8								X															GX				NR F20	ROMAN	
F13	GRAVE		1	1	1	1																							GX					ROMAN	
F13	GRAVE		1	1	1	1																							F40					c.1500-19TH/20TH CENTURY	
F15	GRAVE	21		1	6	6																								F48D					19TH-20TH CENTURY
F15	GRAVE	21		1	59	59		1	0	0															X				F40	STRAINER/CHEESE PRESS?	0.07	400	TRIANGULAR HOLE BASE OF RIM	17TH CENTURY	
F18	GRAVE	32		4	17	4																								F40					c.1500-19TH/20TH CENTURY
F18	GRAVE	32		1	2	2		1	0	0																				F48D	?	0.10	90		19TH-20TH CENTURY
F18	GRAVE	32		1	3	3					X																			F45M				STAMP: M[19TH-20TH CENTURY
F18	GRAVE		3	1	3	3																								F21					c.1200-1550
F18	GRAVE		3	1	4	4																								F42					16TH-17TH CENTURY

Cxt	Feature type	Find no.	Soil S no.	NR	GR.	MSW	Discard	Rim	Handle	Base	Stamp	Graf Pre-F	Graf Post-F	Wmd	Soot	Pitting	Burn	Overfired	Residue	Resin Lin.	Gritted	Abraded	Modif.	Mark	Repair hole	Hole	Disc	Disc diam.	Polishing	Fabric Grp	Typology	EVE	Diam.	Comments	Date
F18	GRAVE		3	2	8	4																							F21				LATE	c.1200-1550	
F18	GRAVE		3	1	2	2																							F40					c.1500-19TH/20TH CENTURY	
F18	GRAVE		2	1	2	2																							F42					16TH-17TH CENTURY	
F19	GRAVE	30		1	116	116	0	0	1																				F40A	DISH			SLIP TRAILED INT	17TH-18th CENTURY	
F20	GRAVE	37		1	7	7																							GX				ROMAN		
F20	GRAVE	37		2	7	4																							F46					MID 16TH-18TH CENTURY	
F20	GRAVE	37		1	10	10																							F45F				PURPLE (TPQ AD 1665)	17TH-18TH CENTURY	
F20	GRAVE	37		1	4	4																							F50					1650-1800	
F20	GRAVE	37		1	6	6																							F45					MID/LATE 18TH-19TH CENTURY	
F20	GRAVE	38		1	18	18																							F45M					19TH-20TH CENTURY	
F20	GRAVE	38		1	18	18																							F45M					19TH-20TH CENTURY	
F22	GRAVE	43		2	23	12	X	0	1	0																				F48D					19TH-20TH CENTURY
F22	GRAVE	43		2	43	21.5		1	0	0																			F40	S-MED BOWL WITH PAIRED HANDLES?	0.02	100	GLAZED INT & EXT., F40? BUT COARSE FABRIC	15TH-16TH CENTURY	
F22	GRAVE	44		1	2	2																							F45F					17TH-18TH CENTURY	
F22	GRAVE	44		1	13	13	X																						F21				COPPER FLECKED GLAZE INT.	c.1200-1550	
F23	GRAVE	47		1	5	5																							F48D				EARLY	19TH-20TH CENTURY	
F23	GRAVE	47		1	1	1	X																						F50					1650-1800	
F23	GRAVE	47		1	1	1																							F50A					1650-1800	
F23	GRAVE	47		1	2	2	X																						F51A					19TH-20TH CENTURY	
F23	GRAVE	47		1	17	17																							F45D					16TH-17TH CENTURY	
F24	GRAVE	45		1	36	36																							BAET	H70?				ROMAN	
F24	GRAVE	45		1	23	23		1	0	0												X							F40	MED-SIZED BOWL				c.1500-19TH/20TH CENTURY	
F25	GRAVE	49		1	3	3		1	0	0																			F48D	CUP	0.12	85		19TH-20TH CENTURY	
F27	GRAVE	51		1	8	8																							F46					Mid 16th-18th century	
F27	GRAVE	51		1	46	46		1	0	0																			F45F	JAR	0.08	200		17TH-18TH CENTURY	
F30	GRAVE	80		2	6	3		0	1	0																			F48D					19TH-20TH CENTURY	
F30	GRAVE	80		2	25	13	X																						F40				GLAZED INT.	c.1500-19TH/20TH CENTURY	
L1	TOPSOIL	?		2	8	4	X																						GX					ROMAN	

Cxt	Feature type	Find no.	Soil S no.	NR	GR.	MSW	Discard	Rim	Handle	Base	Stamp	Graf Pre-F	Graf Post-F	Wmd	Soot	Pitting	Burn	Overfired	Residue	Resin Lin.	Gritted	Abraded	Modif.	Mark	Repair hole	Hole	Disc	Disc diam.	Polishing	Fabric Grp	Typology	EVE	Diam.	Comments	Date
L1	TOPSOIL	?		1	6	6	X																						F40					c.1500-19TH/20TH CENTURY	
L1	TOPSOIL	?		1	52	52		1	0	0																			F40	LARGE STORAGE JAR	0.02?		ARCHED LUG HANDLE (CAR 7, 207 f141.91-92)	18TH-19TH CENTURY	
L1	TOPSOIL	?		1	68	68		0	0	1	X																		F45M				GOLDEN EXT, STAMP: JCHESTER	19TH-20TH CENTURY	

Appendix 6 - Catalogue of small finds and iron nails

SF	Context	Find no.	Object type	Description	Qt	Wt. g	Length mm	Width mm	Thickness mm	Diameter mm	Date
1	F15	19	Trade token	Copper-alloy farthing trade token dated 1655. Obverse: Bird with wings expanded, * HENRY LAMBE OF Reverse: Conjoined HL in centre, * COLCHESTER 1655	1	1.1	-	-	-	15.4	c 1655, 17th century
2	F14	26	Stud	Copper-alloy upholstery stud with round convex head and square-sectioned shank.	1	1.0	11.4	-	-	12.4	Post-medieval, late 17th century onwards
3	F16	20	Stud	Copper-alloy upholstery stud with round convex head and square-sectioned shank.	1	1.0	10.0	-	-	12.4	Post-medieval, late 17th century onwards
4	F3	56	Nail	Complete copper-alloy nail, tapering square-sectioned shank and round head. Two-thirds of the upper section of the nail (underneath the head) is enclosed with a fragment of wood. Measurements are for the nail not the wood.	1	6.0	47.2	-	-	7.3	Post-medieval, late 17th century onwards
5	F3	56	Nail/stud	Convex disc of copper-alloy, probably a nail or stud head with missing shank	1	1.3	-	-	-	14.5	Post-medieval, late 17th century onwards
6	F3	56	Dress/shroud pins	Four copper-alloy dress or shroud pins, all complete, three with wire-wound heads, one with globular head. CAR 5 , Type 1 and Type 2 pins. c = clenched at 45°.	4	<0.1	28.3 (c)	-	-	2.0	Post-medieval
						<0.1	29.4	-	-	1.9	
						<0.1	23.3	-	-	1.6	
						<0.1	21.8	-	-	1.8	
7	F4	58	Dress/shroud pin	Copper-alloy pin broken into two, head too corroded to determine shape	1	<0.1	26.2	-	-	3.1	Post-medieval
8	F4	59	Studs	Six copper-alloy upholstery studs within three fragments of wood. Only one shank was partially visible (7.0mm long), all have round convex heads (c 6mm diameter).	6	2.3	c 7	-	-	c 6.0	Post-medieval, late 17th century onwards
9	F4	67	Studs	Eight copper-alloy upholstery studs within four fragments of wood. None of the shanks are visible, all have round convex heads (c 6mm diameter).	8	4.1	-	-	-	c 6.0	Post-medieval, late 17th century onwards
10	F4	69	Stud	Copper-alloy upholstery stud within fragment of wood. Round-sectioned shank, round convex head (c 12.2mm diameter).	1	1.2	10.6	-	-	12.2	Post-medieval, late 17th century onwards
11	F20	35	Buckle frame	Complete cast copper-alloy buckle frame, D-shaped with narrowed and off-set strap bar, there is a notch for the pin in the frame, the pin is missing. Dated by Whitehead (1996) as mainly c 1250-1500.	1	5.8	30.3	21.3	4.8	-	Medieval, c 1250-1500
12	F20	35	Buckle plate	Copper-alloy/brass buckle plate, very slightly tri-lobed in plan with a folded rectangular section at one end. This section includes a rectangular cut-out for the pin. Four fixing holes, two at the end of the rectangular section and two at the back of the tri-lobe plate, would	1	11.8	43.8	34.8	0.9	-	Post-medieval

SF	Context	Find no.	Object type	Description	Qt	Wt. g	Length mm	Width mm	Thickness mm	Diameter mm	Date
				have fixed the plate to the strap bar of the buckle. The tri-lobed plate also has a single central fixing hole at the opposite end. The plate is bent c 90° across the two fixing holes close to the rectangular end. Each of the lobes is decorated with a line border around the outside with curls in on itself at each end (very faint). The fixing holes have been punched from the front. Although buckle SF11 and buckle plate SF12 are probably related they are of different dates and the plate is too big for the strap bar and would have had to wrap around part of the frame at either end. Crumpling on the fold of the rectangular plate might suggest it had been forced open and the original buckle replaced.							
13	F20	36	?Pin	Three fragments of copper-alloy wire with round cross-section, possibly a dress/shroud pin	1	<0.1	-	-	-	-	Post-medieval
14	F29	76	Dress/shroud pins	Three copper-alloy dress or shroud pins, all complete. a) head formed of wire wrapped around shaft, clenched at 45° (CAR 5, Type 1) b) flat round head c) globular head (CAR 5, Type 2)	3	<0.1	30.8	-	-	1.7	Post-medieval
						<0.1	31.9	-	-	1.8	
						<0.1	23.7	-	-	1.6	
15	F30	82	Dress/shroud pin	Upper section only of a copper-alloy dress or shroud pin including a globular head (CAR 5, Type 2).	1	<0.1	10.6	-	-	2.1	Post-medieval
16	F5	75	Dress/shroud pins	Seven fragments of very corroded copper-alloy dress/shroud pins. Slight rounding at the end of two of the fragments are probably heads, indicating that at least two pins are present.	7	<0.1	5.6-17.5	-	-	-	Post-medieval
17	F13	17	Button	Complete copper-alloy button, machine-made, slightly convex round head, plain, integral loop, on the reverse the inscription TREBLE GILT	1	5.7	8.7 (height)	-	-	24.3	19th century
18	F13	17	Dress/shroud pins	Seven copper-alloy dress pins. a) Five in good condition with head formed of wire wrapped around shaft, one clenched at 90° (CAR 5, Type 1), 23.9-30.4mm long. b) Two corroded and in poor condition with one broken into two pieces, globular head but too corroded to tell if originally wire wrapped.	5	0.6	23.9-30.4	-	-	-	Post-medieval
					2	0.4		-	-	-	
19	F13	17	Studs	Six copper-alloy upholstery studs with round convex heads (c 12mm diameter) and short square-sectioned shanks (some with mineralised wood).	6	6.7	9.6-11.9	-	-	c 12.0	Post-medieval, late 17th century onwards
20	F13	17	Window comes	Two thin strips of lead, possibly part of window comes from the church	2	4.0	46.9	5.1	-	1.7	
							34.9	5.1	-	1.7	
21	F13	16	Handles	Three complete iron coffin handles (75g, 58g & 46g), one incomplete iron coffin handle, and six fragments of coffin handles. The four complete/ incomplete examples are all rounded coffin handles and part of the attachment loop survives on some. The fragments also appear to be from rounded handles. There is also some evidence of grip plates corroded onto the reverse of the handles, but these are	10	327.0	121-133	-	-	-	Post-medieval, late 17th century onwards

SF	Context	Find no.	Object type	Description	Qt	Wt. g	Length mm	Width mm	Thickness mm	Diameter mm	Date
				very fragmentary. Complete handles: 121-133mm long.							
22	F13	16	Studs	82 iron upholstery studs with domed round heads (c 15-19mm diameter) and short square-sectioned shanks, many have mineralised wood on the shanks	82	296.9	c 14-17	-	-	c 15-19	Post-medieval, late 17th century onwards
23	F14	27	Studs	15 iron upholstery studs with domed round heads (c 15-19mm diameter) and short square-sectioned shanks, many have mineralised wood on the shanks	15	59.0	c 15-17	-	-	c 15-19	Post-medieval, late 17th century onwards
24	F18	33	Studs	Three iron upholstery studs with domed round heads (c 15-18mm diameter) and short square-sectioned shanks, two have mineralised wood on the shank	3	13.5	c 15-17	-	-	c 15-18	Post-medieval, late 17th century onwards
25	F20	39	Handles	Six complete iron coffin handles. a) Five are rounded drop handles with the handle expanded/swollen mid-way along the length. There doesn't appear to be any trace of grip plates on the reverse of these handles and the attachment is obscured within dirt/corrosion. Handles: 138mm long, c 60mm drop, weigh 161-241g. b) One is a squared drop handle, with two areas of expansion/swelling along the length. A broken section of grip plate is still attached to the reverse of the handle. Handle: 165.0mm long, c 40mm drop. Plate: 84.9mm long, c 50mm wide.	5 1	161-241 217.0	138 165.0	- -	- -	- -	Post-medieval, late 17th century onwards
26	F29	76	Studs	Eleven iron upholstery studs with domed round heads (c 14-17mm diameter) and short square-sectioned shanks, one has mineralised wood on the shank.	11	21.5	c 13-20	-	-	c 14-17	Post-medieval, late 17th century onwards
27	F2	66	Handle and grip plate	Complete iron handle with virtually complete iron grip plate, slightly damaged on one terminal. The grip plate is bone-shaped with an elongated oval central panel which tapers sharply at each end to oval-shaped terminals set at 90°. The drop-handle is angled consisting of a long straight bar (with round cross-section) bent to form two short arms, which are bent again to pass through the looped attachment on the grip plate. Largely hidden within dirt and corrosion the plate probably includes the remains of two double-spiked loop attachments which held the handle at the front and secured both the handle and plate to the coffin. Plate: 205.0mm long, 61.2mm wide (max.), 3.8mm thick. Handle: 120.6mm long, c 30mm drop.	1	166.5	205.0	61.2	-	-	Post-medieval, late 17th century onwards
28	F3	55	Handle and grip plate	Complete iron handle with virtually complete iron grip plate, which is now bowed and damaged on both terminals. The handle and plate are now separate pieces but probably originally joined. a) The grip plate is lozenge-shaped with oval-shaped terminals set at 90° at each end. One of the loop attachments still survives on the front of the grip plate but is broken at the back, the other is missing. b) The drop-handle has a round or oval cross-section and is rounded	1 1	81.8 58.8	165.0 141.3	66.8 (max.) 56.6	4.1 10.7	- -	Post-medieval, late 17th century onwards

SF	Context	Find no.	Object type	Description	Qt	Wt. g	Length mm	Width mm	Thickness mm	Diameter mm	Date
				in appearance with two short straight projections at either end which would have passed through the looped attachments on the grip plate. Plate: 165.0mm long, 66.8mm wide (max.), 4.1mm thick. Handle: 120.6mm long, c 30mm drop.				(drop)			
29	F4	57	Handle and grip plate	Complete iron handle and iron grip plate still attached and corroded together. The grip plate is bone-shaped with an elongated oval central panel which tapers sharply at each end to oval-shaped terminals set at 90°. The drop-handle is angled consisting of a long straight bar (with round cross-section) bent to form two short arms, which are bent again to pass through the looped attachments on the grip plate. Largely hidden within dirt and corrosion the plate probably includes the remains of two double-spiked loop attachments which held the handle at the front and secured both the handle and plate to the coffin. Plate: 220.0mm long, 72.6mm wide (max.), c 7.0mm thick. Handle: 142.9mm long, c 40mm drop.	1	343.5	220.0	72.6	c 18.0	-	Post-medieval, late 17th century onwards
30	F3, F4, F26	54	Coffin handles	a) Virtually complete rounded iron coffin handle, with one end for attachment to grip plate broken.	1	50.9	144.0	53.0 (drop)	9.6	-	Post-medieval, late 17th century onwards
				b) Complete angled iron coffin handle, small, probable from a child's coffin.	1	21.4	87.1	24.9 (drop)	8.4	-	
31	F18	84	Dress/shroud pins	Copper-alloy dress/shroud pin with wrapped wire head (CAR 5, Type 1), clenched at 135°	1	<0.1	25.8	-	-	-	Post-medieval
32	F18	85	Dress/shroud pins	Nineteen complete, incomplete and fragmentary copper-alloy dress/shroud pins.							Post-medieval
				a) Seven complete, two in good condition with wire wrapped heads (CAR 5, Type 1), five in poor condition and too corroded to tell if globular heads were originally wire wrapped, 26.3-28.8mm long.	7	0.8	26.3-28.8	-	-	-	
				b) Five incomplete all with globular heads but in poor condition and too corroded to tell if originally wire wrapped.	5	0.4		-	-	-	
				c) Seven shaft fragments.	7	0.3		-	-	-	
33	F18	32	Buckle	Incomplete cast copper-alloy trapezoidal double-looped buckle frame, with one of the loops broken and partially missing. Bevelled outside edge, lobed knobs either end of the central strap bar, reverse flat. Frame worn and slightly bent around the area the pin would have rested in. These buckles mainly to the 17th century, c 1620-80 (Whitehead 1996, Chapter 7)	1	4.0	29.1	26.1	3.0	-	17th century
34	F18	32	Coffin handle	Complete rounded iron coffin handle. The drop-handle has a round or oval cross-section and is rounded in appearance with two short straight projections at either end which would have passed through the looped attachments on the grip plate.	1	50.4	138.2	46.0 (drop)	9.9	-	Post-medieval, late 17th century onwards
35	F18	32	Studs	26 iron upholstery studs with domed round heads (c 16-19mm diameter) and short square-sectioned shanks, many have mineralised	26	117.0	c 15-18	-	-	c 16-19	Post-medieval, late 17th century

SF	Context	Find no.	Object type	Description	Qt	Wt. g	Length mm	Width mm	Thickness mm	Diameter mm	Date
				wood on the shanks							onwards
36	F24	45	Studs	Three iron upholstery studs with domed round heads and short square-sectioned shanks, with mineralised wood on the shanks. Not measured as largely obscured within soil, wood and corrosion, probably similar to other examples from the site.	3	25.6	-	-	-	-	Post-medieval, late 17th century onwards
37	F26	61	Studs	Two iron upholstery studs with domed round heads (c 16-17mm diameter) and short square-sectioned shanks with mineralised wood adhering	2	5.7	c 14	-	-	c 16-17	Post-medieval, late 17th century onwards
38	F29	86	Dress/shroud pin	Copper-alloy dress/shroud pin with globular head (1.9mm diameter) (CAR 5, Type 2), clenched at 45°	1	0.1	26.1	-	-	-	Post-medieval
39	F4	70	Studs	At least five iron upholstery studs with domed round heads (c 16mm diameter) and short square-sectioned shank with mineralised wood adhering. Lengths not measured as largely obscured within soil, wood and corrosion, probably similar to other examples from the site.	?5	36.4	-	-	-	c 16	Post-medieval, late 17th century onwards
40	F5	73	Coffin handle	Complete rounded iron coffin handle. The drop-handle has a round or oval cross-section and is rounded in appearance, a very small fragment of the grip plate also survives.	1	60.2	128.4	50.6 (drop)	9.4	-	Post-medieval, late 17th century onwards
41	F23	47	Coffin handle	Complete rounded iron coffin handle. The drop-handle has a round or oval cross-section and is rounded in appearance with two short straight projections at either end which would have passed through the looped attachments on the grip plate.	1	51.3	141.4	49.4	8.8	-	Post-medieval, late 17th century onwards
42	F23	47	Studs	a) Copper-alloy upholstery stud with round convex heads (c 11.9mm diameter) and a short square-sectioned shank. b) 10 iron upholstery studs with domed round heads (c 14-16mm diameter) and short square-sectioned shanks, many have mineralised wood on the shanks	1 10	1.1 37.1	12.9 c 14-16	- -	- -	11.9 c 14-16	Post-medieval, late 17th century onwards
43	F27	51	Coffin handle	Complete rounded iron coffin handle. The drop-handle has a round or oval cross-section and is rounded in appearance with two short straight projections at either end which would have passed through the looped attachments on the grip plate. A single double-spiked loop is still attached to one side of the handle (20.3mm long)	1	60.0	136.5	50.4 (drop)	10.3	-	Post-medieval, late 17th century onwards
44	F30	80	Studs	a) Two copper-alloy upholstery studs with round convex heads (c 13-14mm diameter) and a short square-sectioned shank. b) Four iron upholstery studs with domed round heads (c 15-18mm diameter) and short square-sectioned shanks, many have mineralised wood on the shanks	2 4	3.0 12.6	c 10-11 c 10-14	- -	- -	c 13-14 c 15-18	Post-medieval, late 17th century onwards
45	F30	80	Coffin handle	Incomplete rounded iron coffin handle, now in two pieces. The drop-handle has a round or oval cross-section and is rounded in appearance with two short straight projections at either end which would have passed through the looped attachments on the grip plate.	1	128.8	166.0	c 79.0	16.6	-	Post-medieval, late 17th century onwards
46	F30	80	Window	Fragment of lead window came, probably from the church.	1	6.8	59.3	8.0	1.9	-	Post-medieval

SF	Context	Find no.	Object type	Description	Qt	Wt. g	Length mm	Width mm	Thickness mm	Diameter mm	Date
			came								
47	U/S	-	Coffin handles	Without grip plates: a) Six rounded coffin handles. The drop-handle has a round or oval cross-section and is rounded in appearance with two short straight projections at either end which would have passed through the looped attachments on the grip plate. Range from 120mm to 147mm long. b) Three squared/angled coffin handles. The drop-handle is angled consisting of a long straight bar with round cross-section (which is sometimes expanded at the centre) bent to form two short arms, which are bent again to pass through the looped attachments on the grip plate. Range from 127mm to 160mm long.	6 3	350.0 204.0	120-147 127-160	- -	- -	- -	Post-medieval, late 17th century onwards
48	U/S	-	Coffin handles	With grip plates. a) Five iron handles with iron grip plates still attached. The grip plates are bone-shaped with an elongated oval central panel which tapers sharply at each end to oval-shaped terminals set at 90°. The drop-handle is angled consisting of a long straight bar (with round cross-section) bent to form two short arms, which are bent again to pass through the looped attachments on the grip plate. Occasionally surviving are the remains of double-spiked loop attachments which held the handle at the front and secured both the handle and plate to the coffin. One virtually complete, one almost complete and three fragmentary. Measurements are for the virtually complete example: plate – 200.0mm long, 61.3mm wide (max.), c 6.2mm thick; handle: c 141.0mm long, c 37.8mm drop, 238g. b) One incomplete iron handle with an incomplete iron grip plate still attached. Unlike the other examples, the grip plate appears to have tapered to a pointed terminal with the handle slightly rounded but with a short drop.	5 1	1,055 87.0	- -	- -	- -	- -	Post-medieval, late 17th century onwards
-	F2	65	Coffin nails	Two iron coffin nails with small rectangular-sectioned shanks usually covered in mineralised wood and, if present, small rectangular-shaped heads. Range from 45mm (clenched) to 56mm long.	2	11.6	45-56	-	-	-	Post-medieval, late 17th century onwards
-	F3	55	Coffin nails	Nine iron coffin nails with small rectangular-sectioned shanks usually covered in mineralised wood and, if present, small rectangular-shaped heads. Range from c 38-54mm long.	9	36.5	38-54	-	-	-	Post-medieval, late 17th century onwards
-	F3	64	Coffin nails	Sixteen iron coffin nails with small rectangular-sectioned shanks usually covered in mineralised wood and, if present, small rectangular-shaped heads. Range from c 39-72mm long.	16	114.0	39-72	-	-	-	Post-medieval, late 17th century onwards
-	F4	57	Coffin nails	a) Nine iron coffin nails with small rectangular-sectioned shanks usually covered in mineralised wood and, if present, small rectangular-shaped heads. Range from c 48-58mm long.	9	50.7	48-58	-	-	-	Post-medieval, late 17th century onwards

SF	Context	Find no.	Object type	Description	Qt	Wt. g	Length mm	Width mm	Thickness mm	Diameter mm	Date
				b) One iron coffin nail with flat round head, incomplete.	1	5.1	-	-	-	-	
-	F4	62	Coffin nails	Three iron coffin nails with small rectangular-sectioned shanks covered in mineralised wood and, if present, small rectangular-shaped heads. Range from c 45-48mm long.	3	11.4	45-48	-	-	-	Post-medieval, late 17th century onwards
-	F4	70	Coffin nails	Fifteen iron coffin nails with small rectangular-sectioned shanks usually covered in mineralised wood and, if present, small rectangular-shaped heads. Range from c 31-53mm long.	15	49.1	31-58	-	-	-	Post-medieval, late 17th century onwards
-	F5	73	Coffin nails	Two iron coffin nails with small rectangular-sectioned shanks covered in mineralised wood and small rectangular-shaped heads. Range from c 49-54mm long.	2	7.9	49-54	-	-	-	Post-medieval, late 17th century onwards
-	F5	81	Coffin nails	a) Two iron coffin nails with small rectangular-sectioned shanks covered in mineralised wood and small rectangular-shaped heads. Range from c 48-56mm long. b) Three slightly larger iron coffin nails with small rectangular-sectioned shanks covered in mineralised wood and small rectangular-shaped heads. Range from c 65-67mm long. c) Iron screw with round-sectioned shank covered in mineralised wood and a flat round head, c 70mm long.	2 3 1	11.2 36.8 27.3	48 & 54 65-67 70	- - -	- - -	- - -	Post-medieval, late 17th century onwards
-	F13	16	Coffin nails	a) 60 iron coffin nails, fragmentary and complete, with small rectangular-sectioned shanks usually covered in mineralised wood and, if present, small rectangular-shaped heads. Range from c 35-70mm long. b) Four iron coffin nails with flat or slightly domed round heads, one clenched at 90° c) 26 very fragmentary pieces of iron plate were also recovered from the feature (these have been discarded).	60 4 26	419.4 46.0 78.8	35-70 - -	- - -	- - -	- - -	Post-medieval, late 17th century onwards
-	F14	27	Coffin nails	a) 20 iron coffin nails, fragmentary and complete, with small rectangular-sectioned shanks usually covered in mineralised wood and, if present, small rectangular-shaped heads. Range from c 40-72mm long. Weight includes an iron stud corroded onto one of the nails. b) Three iron coffin nails with flat or slightly domed round heads. c) Four very fragmentary pieces of iron plate were also recovered from the feature (these have been discarded).	20 3 4	111 28 92	40-72 - -	- - -	- - -	- - -	Post-medieval, late 17th century onwards
-	F18	32	Coffin nails	Seventeen iron coffin nails with small rectangular-sectioned shanks usually covered in mineralised wood and, if present, small rectangular-shaped heads. Range from c 28-54mm long.	17	51.5	28-54	-	-	-	Post-medieval, late 17th century onwards
-	F18	33	Coffin nails	Five iron coffin nails with small rectangular-sectioned shanks usually covered in mineralised wood and, if present, small rectangular-shaped heads. Range from c 34-58mm long.	5	22.1	34-58	-	-	-	Post-medieval, late 17th century onwards
-	F19	31	Coffin nails	Two iron coffin nails with small rectangular-sectioned shanks usually	2	13.0	34-39	-	-	-	Post-medieval,

SF	Context	Find no.	Object type	Description	Qt	Wt. g	Length mm	Width mm	Thickness mm	Diameter mm	Date
				covered in mineralised wood and, if present, small rectangular-shaped heads. Range from c 34-39mm long.							late 17th century onwards
-	F20	39	Coffin nails	40 iron coffin nails, fragmentary and complete, with small rectangular-sectioned shanks usually covered in mineralised wood and, if present, small rectangular-shaped heads. Most ranged from c 85-120mm long (most over 95mm), with six smaller at c 50-60mm and eight fragments	40	1087	50-120	-	-	-	Post-medieval, late 17th century onwards
-	F21	41	Coffin nails	Five iron coffin nails. Four with a small rectangular-sectioned shank usually covered in mineralised wood and, if present, a small rectangular-shaped head. One appears to have a flat round head. Range from c 43-66 long.	5	58.5	43-66	-	-	-	Post-medieval, late 17th century onwards
-	F22	43	Coffin nails	Eight iron coffin nails with small rectangular-sectioned shanks usually covered in mineralised wood and, if present, small rectangular-shaped heads. Range from c 34-49mm long.	8	36.9	34-49	-	-	-	Post-medieval, late 17th century onwards
-	F22	44	Coffin nails	a) Eight iron coffin nails with small rectangular-sectioned shanks usually covered in mineralised wood and, if present, small rectangular-shaped heads. Range from c 47-59mm long. b) Iron screw with round-sectioned shank covered in mineralised wood and a flat round head, c 53mm long, 14.7mm diameter head. c) Large iron nail, shape largely obscured within corrosion, 106mm long	8 1 1	45.5 14.2 93.7	47-59 53 106	- - -	- - -	- - -	Post-medieval, late 17th century onwards
-	F23	47	Coffin nails	a) 22 iron coffin nails with small rectangular-sectioned shanks usually covered in mineralised wood and, if present, small rectangular-shaped heads. Range from c 27-76mm long. b) 34 very fragmentary pieces of iron plate were also recovered from the feature (these have been discarded).	22 34	177.0 159.4	27-76 -	- -	- -	- -	Post-medieval, late 17th century onwards
-	F24	45	Coffin nails & misc	a) Large iron coffin nail, large obscured in mud and corrosion, 68mm long. b) Two large corroded lumps of iron, probably coffin fittings/coffin nails but difficult to distinguish any detail, 71.2mm by 41.1mm by 24.9mm and 71.1mm by 41.2mm by 32.2mm	1 2	34.2 156.7	68 -	- -	- -	- -	Post-medieval, late 17th century onwards
-	F25	49	Coffin nails	Three iron coffin nails with small rectangular-sectioned shanks usually covered in mineralised wood and, if present, small rectangular-shaped heads. Range from c 42-53mm long.	3	20.5	42-53	-	-	-	Post-medieval, late 17th century onwards
-	F26	61	Coffin nails	Thirteen iron coffin nails with small rectangular-sectioned shanks usually covered in mineralised wood and, if present, small rectangular-shaped heads. Range from c 37-56mm long.	17	78.5	37-56	-	-	-	Post-medieval, late 17th century onwards
-	F26	68	Coffin nails	Nine iron coffin nails with small rectangular-sectioned shanks usually covered in mineralised wood and, if present, a small rectangular-shaped heads. Range from c 50-68mm long.	9	59.2	50-68	-	-	-	Post-medieval, late 17th century onwards
-	F27	51	Coffin nails	Three iron coffin nails with small rectangular-sectioned shanks usually covered in mineralised wood and, if present, small rectangular-shaped	3	16.0	64-71	-	-	-	Post-medieval, late 17th century

SF	Context	Find no.	Object type	Description	Qt	Wt. g	Length mm	Width mm	Thickness mm	Diameter mm	Date
				heads. Range from c 64-71mm long.							onwards
-	F29	76	Coffin nails	Four iron coffin nails with small rectangular-sectioned shanks usually covered in mineralised wood and, if present, a small rectangular-shaped head. Two are are clenched at 90°. The only straight and complete nail is 53mm long.	4	12.8	53	-	-	-	Post-medieval, late 17th century onwards
-	F29	77	Coffin nails	Four iron coffin nails with small rectangular-sectioned shanks usually covered in mineralised wood and, if present, small rectangular-shaped heads. Range from c 50-59mm long.	4	19.6	50-59	-	-	-	Post-medieval, late 17th century onwards
-	F30	80	Coffin nails	a) Six iron coffin nails with small rectangular-sectioned shanks usually covered in mineralised wood and, if present, small rectangular-shaped heads. Range from c 36-59mm long. b) Two larger iron coffin nails, shape largely obscured within corrosion, dirt and mineralised wood. One has an iron stud adhering to it.	6 3	45.9 36.4	36-59 -	- -	- -	- -	Post-medieval, late 17th century onwards
Discarded finds											
-	L1	-	Nail	Large iron nail shank, round-sectioned, head missing (115mm long)	1	58.1	115	-	-	-	Post-medieval/modern
-	L2	-	Nails and coffin nails	a) Seven iron coffin nails with small rectangular-sectioned shanks usually covered in mineralised wood and, if present, small rectangular-shaped heads. Range from c 36-59mm long. b) Three larger iron coffin nails with square-sectioned shanks and flat round heads, one complete 60mm long. c) One screw, round-sectioned, flat round head, 67mm long	7 3 1	43.2 50.1 21.0	36-59 60 67	- - -	- - -	- - -	Post-medieval/modern, late 17th century onwards
-	U/S	-	Coffin nails and studs	a) Fifteen iron coffin nails with small rectangular-sectioned shanks usually covered in mineralised wood and, if present, small rectangular-shaped heads. Range from c 46-61mm long. b) Three iron upholstery studs with domed round heads (c 17-18mm diameter) and short square-sectioned shanks, many have mineralised wood on the shanks, 14-16mm long	15 3	82.6 12.0	46-61 14-16	- -	- -	- c 17-18	Post-medieval/modern, late 17th century onwards

Appendix 7 - Depth of burials

Burial	Height AOD	Depth BCGL
F2	6.715m	1.125m
F3	7.205m	0.775m
F4	7.210m	0.870m
F5	7.195m	0.785m
F12	7.135m	0.685m
F13	7.225m	0.615m
F14	7.205m	0.635m
F15	7.065m	1.155m
F16	7.140m	0.680m
F17	7.065m	1.155m
F18	7.365m	0.615m
F19	7.355m	0.885m
F20	7.305m	0.635m
F21	7.245m	0.995m
F22	7.255m	0.685m
F23	7.245m	0.775m
F24	7.285m	0.955m
F25	7.315m	0.655m
F26	7.265m	0.715m
F27	7.285m	0.955m
F28	7.365m	0.875m
F29	7.135m	0.845m
F30	7.245m	0.715m

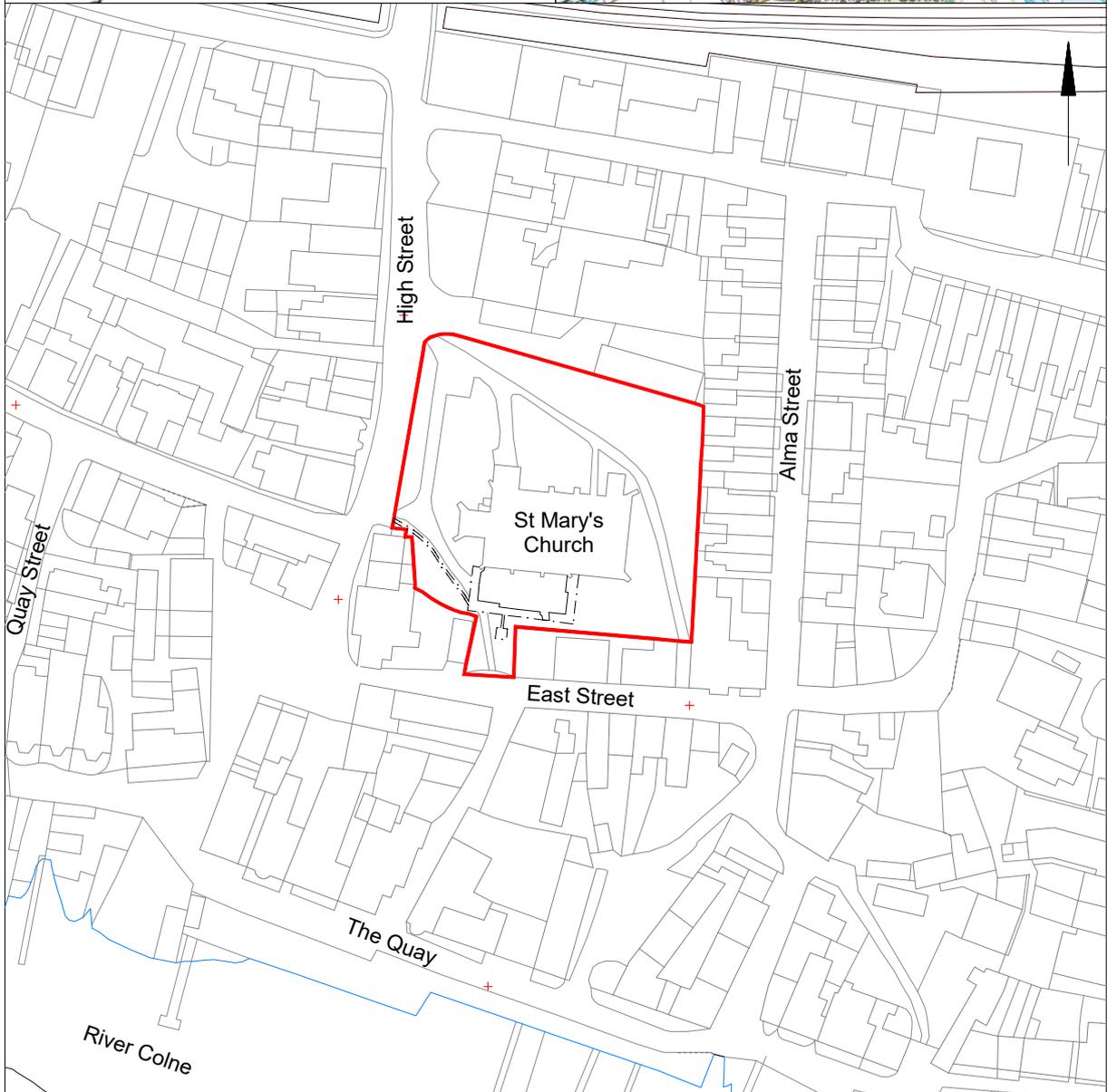
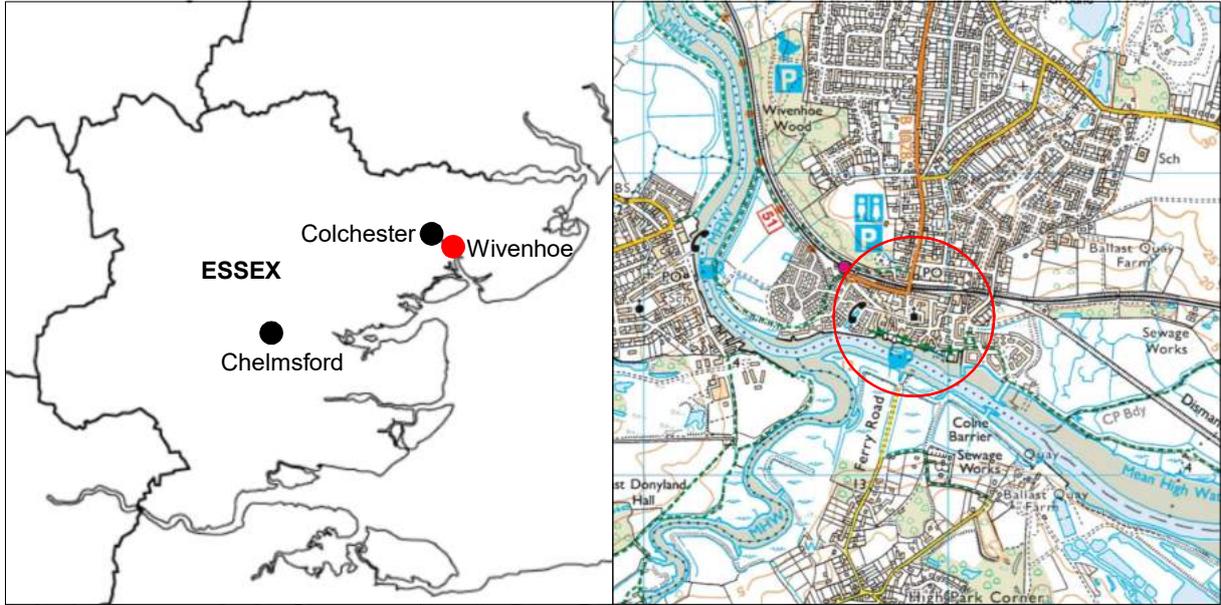


Fig 1 Site location.

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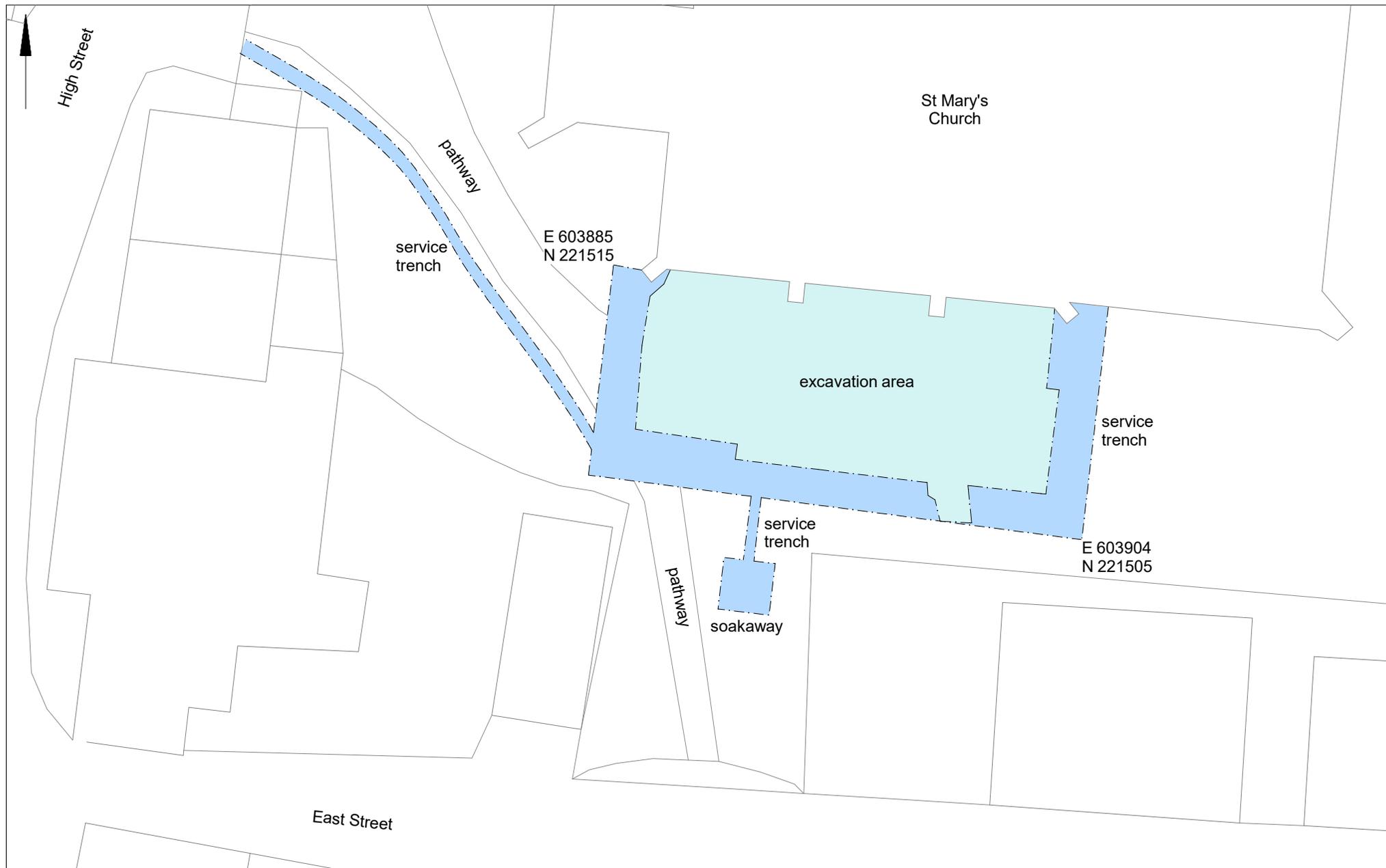


Fig 2 Detailed plan of site showing excavation areas.

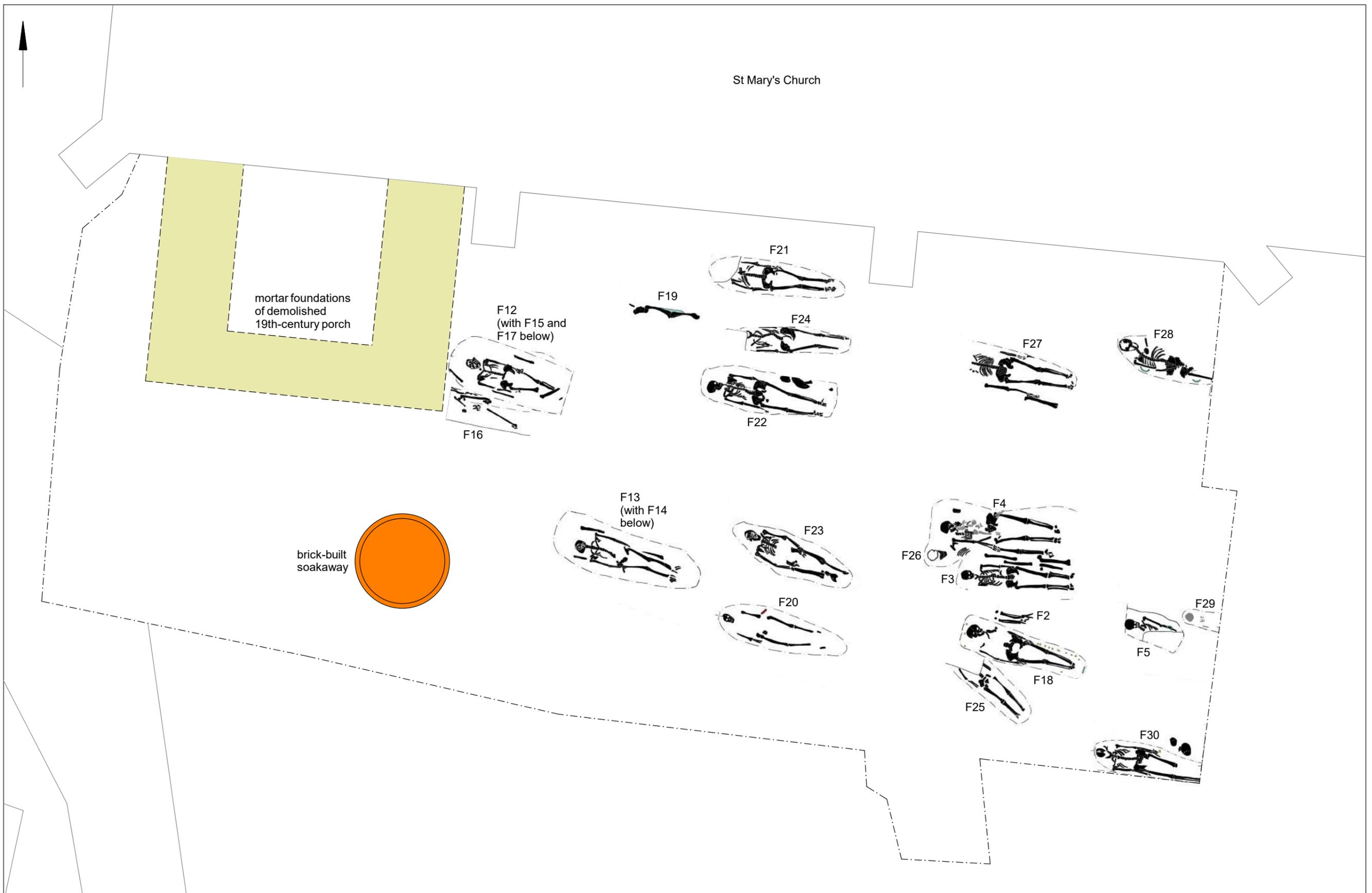


Fig 3 Detailed plan of excavation area showing burials.

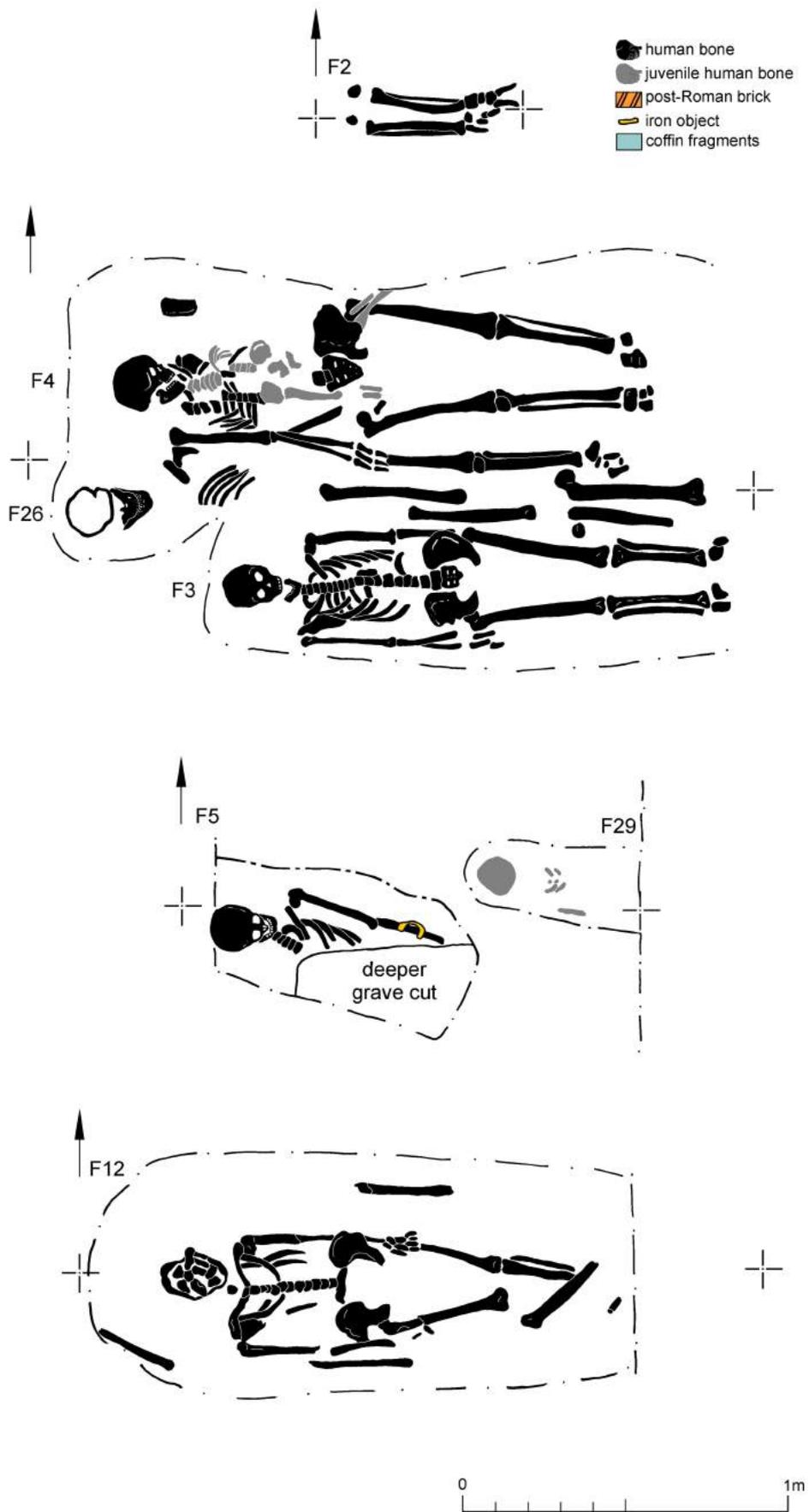


Fig 4 Grave plans.

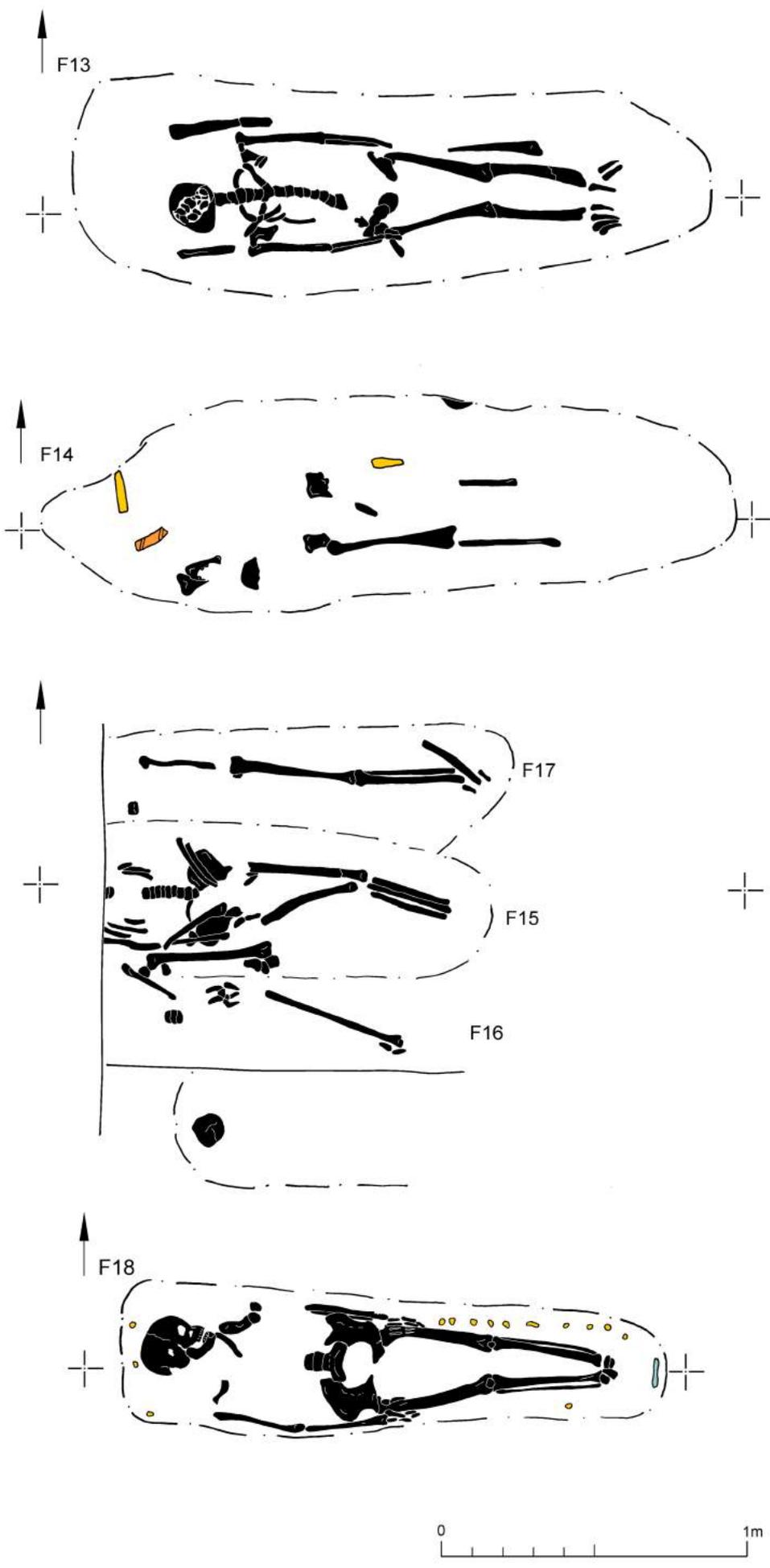


Fig 5 Grave plans.

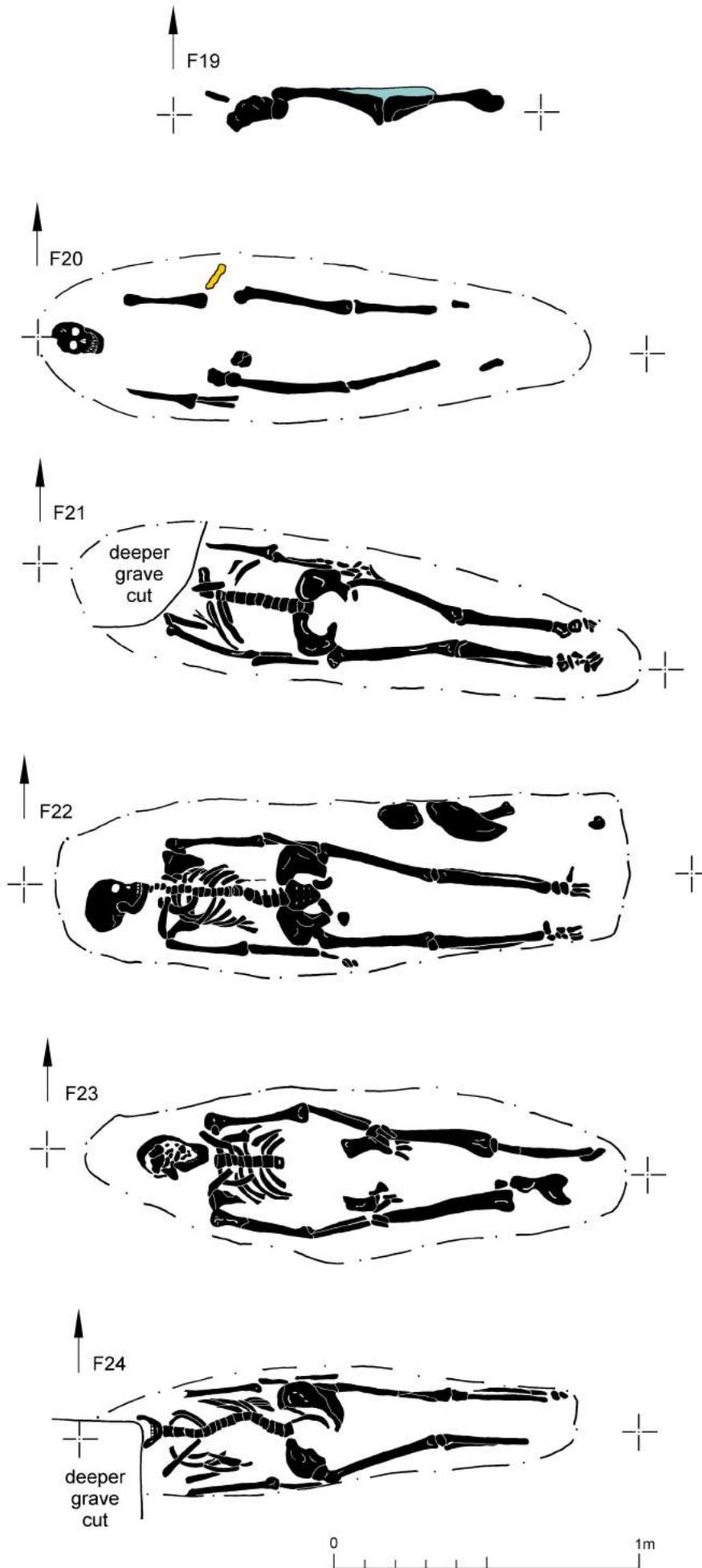


Fig 6 Grave plans.

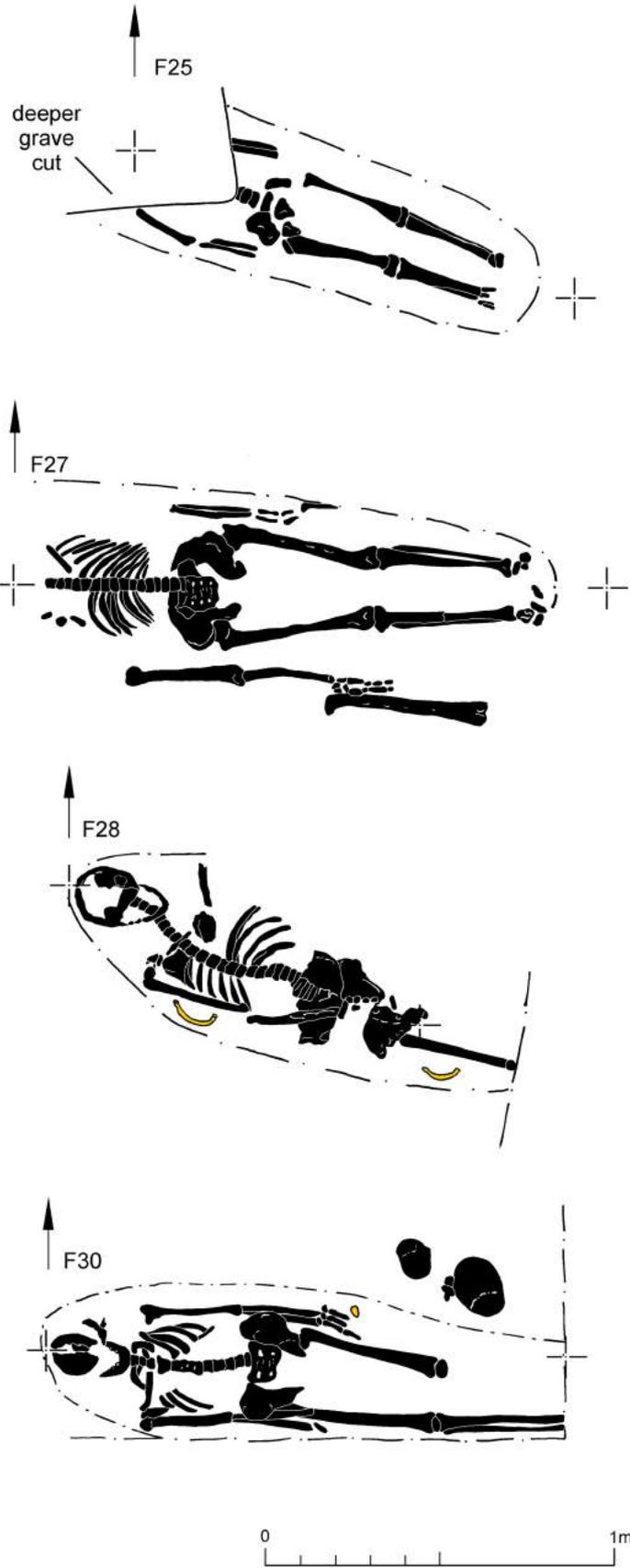


Fig 7 Grave plans.



Fig 8 Coffin furniture and small finds from F2 (1), F3 (2), F4 (3) and F13 (4-6).



Fig 9 Coffin furniture and small finds from F13.

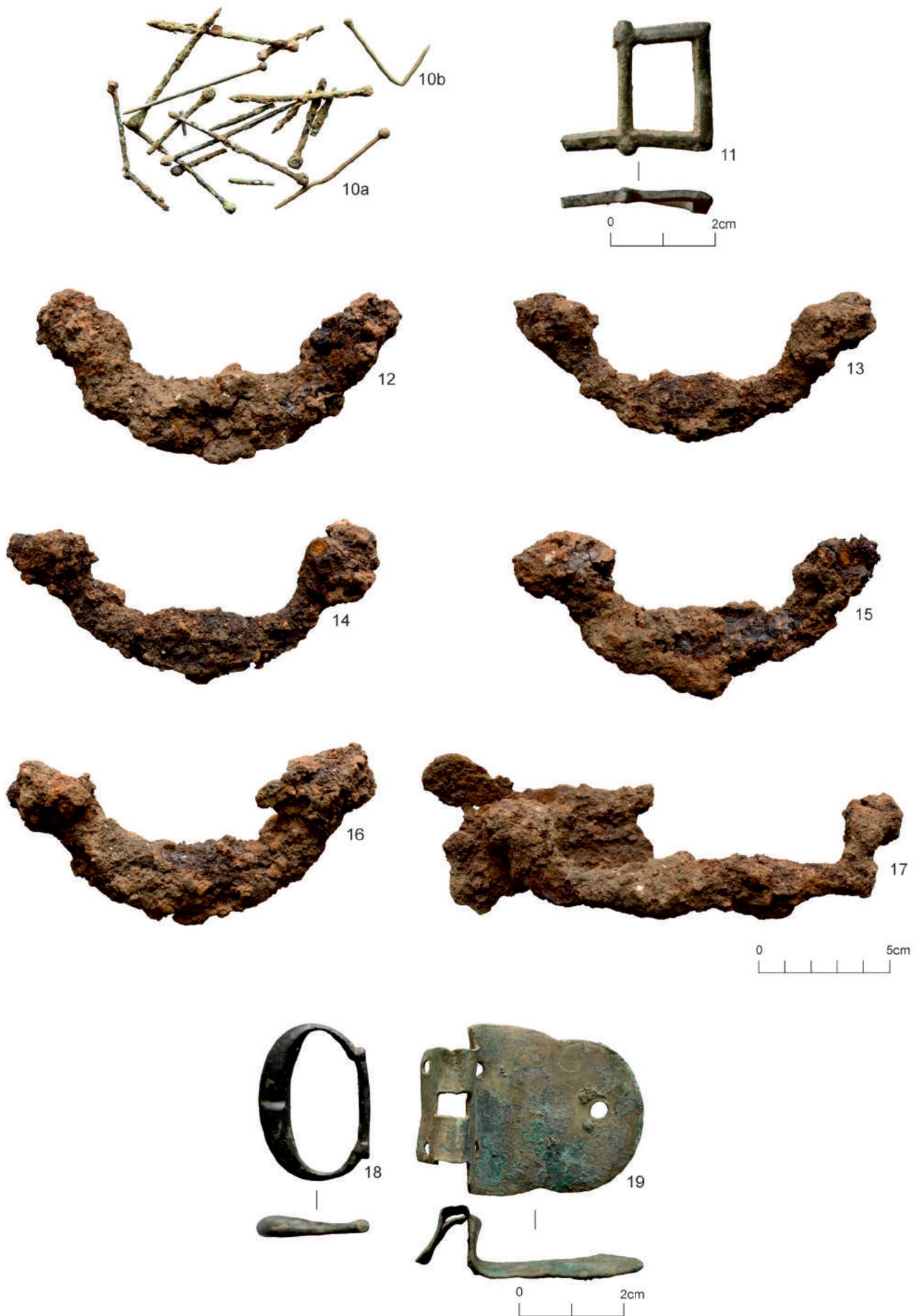


Fig 10 Coffin furniture and small finds from F18 (10-11) and F20 (12-19).

Essex Historic Environment Record/ Essex Archaeology and History

Summary sheet

Address: St Mary's Church, High Street, Wivenhoe, Essex, CO7 9BD	
Parish: Colchester	District: Colchester
NGR: TM 03896 21512 (centre)	Site code: CAT project ref.: 2020/10b CHER ref: ECC4568 OASIS ref: colchest3-404874
Type of work: Excavation	Site director/group: Colchester Archaeological Trust
Date of work: 14th - 28th January and May 2021	Size of area investigated: 177m squared
Location of curating museum: Colchester Museum	Funding source: Developer
Further seasons anticipated? no	Related CHER/SMR number: MCC10041, MCC3175 & MCC8980
Final report: CAT Report 1687	
Periods represented: 17th-20th century	
Summary of fieldwork results: <i>An archaeological excavation was carried out at St Mary's Church, Wivenhoe, Essex in advance of the construction of an extension to house a meeting room and ancillary facilities. During the excavation 24 inhumation burials were uncovered, along with a large amount of disarticulated human bone, representing the remains of at least another 45 skeletons. Finds of a 17th-20th century date, including substantial amounts of coffin furniture, were retrieved from the inhumations. As the site has been a burial ground since the 14th century, however, it seems likely that some of the disarticulated remains could be of an earlier date.</i>	
Previous summaries/reports: CAT Report 1551	
CBC monitor: Dr Simon Wood	
Keywords: burial	Significance: *
Author of summary: Mark Baister	Date of summary: July 2021

**Written Scheme of Investigation (WSI)
for an archaeological excavation at
St Mary's Church, High Street, Wivenhoe,
Essex, CO7 9BD.**

NGR: TM 03896 21512 (centre)

District: Colchester

Planning reference: 162526

Commissioned by: Ben Downie (Inkpen Downie)

On behalf of: PCC St Mary's Church, Wivenhoe

Diocese: Chelmsford

Curating museum: Colchester

CHER project code: ECC4568

CAT project code: 2020/10b

Oasis project ID: colchest3-404874

Site manager: Chris Lister

CBC monitor: Rik Hoggett

Diocesan Archaeological Advisor: Debbie Priddy

This WSI written: 14/10/2020 (revised)



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Site location and description

The proposed development site is located at St Mary's Church, High Street, Wivenhoe, Essex (Fig 1). The church is situated towards the southern edge of Wivenhoe, approximately 75m north of the River Colne. Site is centred at National Grid Reference NGR TL 03896 21512.

Proposed work

The development comprises the demolition of the existing south porch and erection of new extension for meeting room and ancillary facilities.

Archaeological background (Fig 1)

The following archaeological background is extracted from CAT Report 2136 and draws on the Colchester Archaeological Trust report archive, the Colchester Historic Environment Record (ECC and MCC numbers) accessed via the Colchester Heritage Explorer (www.colchesterheritage.co.uk):

The CHER shows that the development site is located within the churchyard (CHER no. MCC10041) and abutting the Church of St Mary the Virgin (CHER no. MCC3175 & MCC8980), a 14th century church with 19th century alterations.

An assessment of the site in 1977 (Rodwell & Rodwell) concluded that the church was: 'Dull and uninteresting after 19th century rebuilding. Graveyard has been devastated and largely cleared with headstones leaned carelessly against boundary walls though a few monuments are in situ. Archaeological potential unknown, could be high.'

A number of listed buildings dating from the 15th to the 19th centuries surround the church and churchyard.

Archaeological monitoring and an archaeological test-pit evaluation (two test-pits) was carried out at the site in April 2018 (ECC4146 and ECC4148, CAT Report 1551). Groundworks abutting the church revealed no archaeological remains, although a layer of mortar which forms part of the church's foundation was exposed. The test-pits revealed ten inhumation burials and a quantity of disarticulated bone. The large concentration of coffin furniture present amongst these remains indicates that these individuals were interred from the late 17th century onwards, and there is a high likelihood that further earlier burials underlie those uncovered here. A 19th-century wall foundation which was probably the remains of a funerary monument was also uncovered.

Planning background

A planning application was made to Colchester Borough Council in October 2016 (application no.162526) proposing the *demolition of the existing south porch and erection of new extension for meeting room and ancillary facilities*. The project is also part of an approved DAC Faculty.

Following the results of the evaluation of the site a requirement for further archaeological excavation was recommended by the Colchester Borough Council Archaeological Advisor (CBCAA). The recommended archaeological work is based on the guidance given in the *National Planning Policy Framework* (MHCLG 2019).

Requirement for work (Figs 1-3)

The required archaeological work is for an archaeological excavation following demolition of the existing extension down to ground level. Details are given in a Project Brief written by CBCAA (CBC 2020).

Specifically,

The archaeological work will comprise of excavation in advance of groundworks across the footprint of the new building and any groundworks that have the potential to damage and disturb the archaeological remains. The original design involved a foundation slab with deeper beams, this was later revised to remove the beams. The proposed slab foundation comprises of 530mm of layers. The formation depth is expected to reach the uppermost height of burials recorded in TP4, but be above those in TP3 (see Fig 3 for foundation depth compared to the heights of burials recorded in the test pits). Excavation will include a 200mm (min.) buffer area between formation level and uppermost archaeological horizon, to prevent damage to any underlying and fragile archaeological remains. A layer of terram and clean sand will be laid between the archaeological remains and the formation level for the slab foundation. See human remains section for recording of burials.

If unusual, significant or unexpected remains are encountered the CBCAA and DAA will be informed immediately. Amendments to the brief, and this WSI, may be required to ensure adequate provision for archaeological recording.

In the exceptional circumstances that important, well-preserved mosaic floors (or similar remains) are discovered, which cannot otherwise be avoided by the development (and satisfactorily preserved in situ), a contingency will be required for the block-lifting of these archaeological remains, e.g. well-preserved mosaic remains and/or exceptional burnt remains related to the Boudiccan destruction of AD 60/61, and for subsequent conservation and presentation. A decision about the need for conservation and lifting of important archaeological remains will be made in consultation with specialist stakeholders (e.g. Historic England, Colchester Museum and Norfolk Museums Service, Conservation and Design Services).

General methodology

All work carried out by CAT will be in accordance with:

- professional standards of the Chartered Institute for Archaeologists, including its *Code of Conduct* (CIfA 2014a, b)
- Standards and Frameworks published by East Anglian Archaeology (Gurney 2003, Medlycott 2011)
- relevant Health & Safety guidelines and requirements (CAT 2019)
- the Project Brief issued by the CBCAA (CBC 2020).

Professional CAT field archaeologists will undertake all specified archaeological work, for which they will be suitably experienced and qualified.

Notification of the supervisor/project manager's name and the start date for the project will be provided to CBCAA and DAA one week before start of work.

Unless it is the responsibility of other site contractors, CAT will study mains service locations and avoid damage to these.

At the start of work (immediately before fieldwork commences) an OASIS online record <http://ads.ahds.ac.uk/project/oasis/> will be initiated and key fields completed on Details, Location and Creators forms. At the end of the project all parts of the OASIS online form will be completed for submission to CHER. This will include an uploaded .PDF version of the entire report.

A unique HER event number will be obtained from the CBCAA prior to the commencement of fieldwork. The curating museum will be notified of the details of the project and the event code, which will be used to identify the project archive when depositing at the end of the project.

Staffing

The number of field staff for this project is estimated as follows: one supervisor a project osteologist and one archaeologist for up to 10 days.
In charge of day-to-day site work: Ben Holloway/Mark Baister

Excavation methodology

Where appropriate, modern overburden and any topsoil stripping/levelling will be performed using a mechanical excavator equipped with a toothless ditching bucket under the supervision and to the satisfaction of a professional archaeologist. If no archaeologically significant deposits are exposed, machine excavation will continue until natural subsoil is reached.

All archaeological features and deposits revealed will be excavated by hand in an archaeologically controlled and stratigraphic manner, in order to establish their extent, form, date, function and relationship to other features

There will be sufficient excavation to give clear evidence for the period, depth and nature of any archaeological deposit. For linear features 1m wide sections will be excavated across their width to a total of 10% of the overall length. Discrete features, such as pits, will have 50% of their fills excavated, although certain features may be fully excavated. Complex archaeological structures such as walls, kilns, ovens or burials (see human remains section) will be carefully cleaned, planned and fully recorded, but where possible left *in situ*. Only if it can be demonstrated that the complex structure/feature is likely to be destroyed by groundworks, and only then after discussion with the CBCAA and DAA, will it be removed.

Fast hand-excavation techniques involving (for instance) picks, forks and mattocks will not be used on complex stratigraphy.

If required, a provision shall be made for shoring to facilitate the ability in excavate deep archaeological deposits.

Complex archaeological structures such as walls, kilns or ovens will be carefully cleaned, planned and fully recorded, but where possible left *in situ*. Only if it can be demonstrated that the complex structure/feature is likely to be destroyed by groundworks, and only then after discussion with the CBCAA, will it be removed.

Trained CAT staff will use a metal detector to scan all areas of investigation and spoil heaps. CAT senior site staff Mark Baister and Ben Holloway have both been trained in the use of metal-detectors and used them for more than five years. CAT also works in partnership with Geoff Lunn as a metal-detecting advisor. Geoff has over four years experience detecting and has worked with CAT to recover finds from recent excavations including the Mercury Theatre site in Colchester, and who has also worked with the Colchester Archaeological Group, Suffolk Archaeology, Access Cambridge Archaeology, The Citizen Project (MOLA) and others. Individual records of excavated contexts, layers, features or deposits will be entered on proforma record sheets. Registers will be compiled of finds, small finds and soil samples.

Individual records of excavated contexts, layers, features or deposits will be entered on proforma record sheets. Registers will be compiled of finds, small finds and soil samples.

All features and layers or other significant deposits will be planned, and their profiles or sections recorded. A representative section will be drawn to include ground level and the depth of machining. The normal scale will be site plans at 1:20 and sections at 1:10, unless circumstances indicate that other scales would be appropriate.

The photographic record will consist of general site shots, and shots of all archaeological features and deposits. A photographic scale (including north arrow) shall be included in the case of detailed photographs. Standard "record" shots of contexts will be taken on a digital camera. A photographic register will accompany the photographic record. This will detail as a minimum feature number, location, and direction of shot.

Individual records of excavated contexts, layers, features or deposits will be entered on proforma record sheets. Registers will be compiled of finds, small finds and soil samples.

Site surveying

The excavation area and any features will be surveyed by Total Station or GPS, unless the particulars of the features indicate that manual planning techniques should be employed. Normal scale for archaeological site plans and sections is 1:20 and 1:10 respectively, unless circumstances indicate that other scales would be more appropriate.

The site grid will be tied into the National Grid. Corners of excavation areas will be located by NGR coordinates.

Environmental sampling policy

The number and range of samples collected will be adequate to determine the potential of the site, with particular focus on palaeoenvironmental remains including both biological remains (e.g. plants, small vertebrates) and small sized artefacts (e.g. smithing debris), and to provide information for sampling strategies on any future excavation. Samples will be collected for potential micromorphological and other pedological sedimentological analysis. Environmental bulk samples will be 40 litres in size (assuming context is large enough).

CAT has an arrangement with Val Fryer/Lisa Gray whereby any potentially rich environmental layers or features will be appropriately sampled as a matter of course. CAT staff will process samples (unless of a complex nature) and the flots will be sent to VF/LG for reporting.

Sampling strategies will address questions of:

- the range of preservation types (charred, mineral-replaced, waterlogged) and their quality
- concentrations of macro-remains
- and differences in remains from undated and dated features
- variation between different feature types and areas of site

Provision will be included (where necessary) for column or core samples to be taken, for the assessment and/or full analysis of those samples, and for absolute dating of the sequence.

Provision will also be made (where necessary) for the identification and absolute dating of suitable deposits of charred remains. Should VF/LG make a recommendation that suitable samples not datable by other means (ie associated finds) be submitted for absolute dating, then these samples will be sent to the SUERC Radiocarbon Dating Laboratory at Glasgow University for analysis.

Should any complex, or otherwise outstanding deposits be encountered, VF/LG will be asked onto site to advise. Waterlogged 'organic' features will always be sampled. In all cases, the advice of VF and/or the Historic England Regional Advisor in Archaeological Science (East of England) on sampling strategies for complex or waterlogged deposits will be followed, including the taking of monolith samples.

Human remains

CAT follows the policy of leaving human remains *in situ* unless there is a clear indication that the remains are in danger of being compromised as a result of their exposure or unless advised to do so by the project osteologist or CBCAA.

During this project any burials encountered within the formation level and buffer zone will excavate 100%. If burials are encountered below this (once depth has been tested and confirmed), they will be left *in situ* with grave cuts recorded in plan.

Burials will be excavated and recorded following CiFA (2017) and Historic England guidelines (HE 2017 and 2018).

A DoJ licence has been applied for ahead of the works (licence number 20-0214) and the CBCAA will be notified immediately if any human remains are encountered during the excavation. Human remains removed from site for analysis this may involve scientific analysis, such as radiocarbon dating (see finds section).

On completion and approval of the final report the human remains will be reburied in consecrated ground at the church.

Following HE guidance (HE 2018) if the human remains are not to be lifted, the project osteologist should be available to record the human remain in situ (i.e. a site visit). Conditions laid down by the DoJ license will be followed. If it seems that the remains are not ancient, then the coroner, the client, and the CBCAA will be informed, and any advice and/or instruction from the coroner will be followed.

Photographic record

Will include both general and feature-specific photographs, the latter with scale and north arrow. A photo register giving context number, details, and direction of shot will be prepared on site, and included in site archive. Digital site photographs will be supplied as both a jpeg and in raw uncompressed format (TIFF), with metadata will be embedded into the raw file as per HE guidelines (HE 2015a).

Finds

All significant finds will be retained.

All finds, where appropriate, will be washed and marked with site code and context number. CAT may use local volunteers to assist the CAT Finds Officer with this task.

Most of our finds reports are written internally by CAT Staff under the supervision and direction of Philip Crummy (Director) and Howard Brooks (Deputy Director). This includes specialist subjects such as:

ceramic finds (pottery and ceramic building material): Matthew Loughton

animal bones: Alec Wade (or Adam Wightman, small groups only)

small finds, metalwork, coins, etc: Laura Pooley

non-ceramic bulk finds: Laura Pooley

flints: Adam Wightman

environmental processing: Bronagh Quinn

project osteologist (human remains): Meghan Seehra

or to outside specialists:

animal and human bone: Julie Curl (*Sylvanus*)

environmental assessment and analysis: Val Fryer / Lisa Gray

radiocarbon dating: SUERC Radiocarbon Dating Laboratory, Glasgow

conservation/x-ray: Laura Ratcliffe (LR Conservation) / Norfolk Museums Service,
Conservation and Design Services

Other specialists whose opinion can be sought on large or complex groups include:

flint: Hazel Martingell

prehistoric pottery: Stephen Benfield / Nigel Brown / Paul Sealey

Roman pottery: Stephen Benfield / Paul Sealey / Jo Mills / Val Rigby /
Gwladys Monteil

Roman brick/tile: Ernest Black / Ian Betts (MOLA)

Roman glass: Hilary Cool

small finds: Nina Crummy

other: EH Regional Adviser in Archaeological Science (East of England).

All finds of potential treasure will be removed to a safe place, and the coroner informed immediately, in accordance with the rules of the Treasure Act 1996. The definition of treasure is given in pages 3-5 of the Code of Practice of the above act. This refers primarily to gold or silver objects.

Requirements for conservation and storage of finds will be agreed with the appropriate museum prior to the start of work, and confirmed to CBCAA and DAA.

A contingency will be made in the budget for scientific assessment/analysis. This can include soil micromorphological assessment, absolute dating in the event that archaeomagnetic and/or (more probably) radiocarbon dating is required, if burning is encountered or human remains (in which case it might be necessary to lift a small sample for absolute dating) or Isotope/DNA analysis. The Historic England Regional Science Advisor will be consulted for advice on this.

Post-excavation assessment

Once fieldwork has finished the need for a post-excavation assessment will be discussed and agreed with CBCAA. This may include discussion as to whether there is a need for and extent scientific analysis of appropriate contexts including analysis relating to the study of human remains (such as absolute dating, see finds section)

If a post-excavation assessment is required by CBCAA or DAA, it will be normally be submitted within 2 months of the end of fieldwork, or as quickly as is reasonably practicable and at a time agreed with CBCAA and DAA. Post-excavation assessments and updated project designs will be prepared in accordance with Historic England principals of MoRPHE (HE 2015b) and East Anglian Archaeology notes (2015). It will be a clear and concise assessment of the archaeological value and significance of the results, and will identify the research potential in the context of the Regional Research Framework. It will include an Updated Project Design, with a timetable, for analysis, dissemination and archive deposition. This will include an inventory of the archive and any statement of retention and discard strategy based on specialist advice. CAT has a non-site specific finds retention strategy approved by Colchester Museum (CAT 2016).

Where archaeological results do not warrant a post-excavation assessment, preparation of the normal site report will begin.

Results

Notification will be given to CBCAA and DAA when the fieldwork has been completed.

An appropriate archive will be prepared to minimum acceptable standards outlined in *Management of Research Projects in the Historic Environment* (HE 2015b).

The report will be submitted within 6 months of the end of fieldwork, with a copy supplied to CBCAA as a PDF.

The report will contain:

- Location plan of groundworks. At least two corners of which will be given 10 figure grid references.
- Section/s drawings showing depth of deposits from present ground level with Ordnance Datum, vertical and horizontal scale.
- Archaeological methodology and detailed results including a suitable conclusion and discussion and results referring to Regional Research Frameworks (Medlycott 2011).
- All specialist reports or assessments.
- A concise non-technical summary of the project results.
- An inventory of the archive and any statement of retention and discard strategy based on specialist advice. CAT has a non-site specific finds retention strategy approved by Colchester Museum (CAT 2016).

An EHER summary sheet will also be completed within four weeks and supplied to CBCAA.

Results will be published, to at least a summary level (i.e. round-up in *Essex Archaeology & History*) in the year following the archaeological field work. An allowance will be made in the project costs for the report to be published in an adequately peer reviewed journal or monograph series

Archive deposition

It is a policy of Colchester Borough Council that the integrity of the site archive be maintained (i.e. all finds and records should be properly curated by a single organisation), with the archive available for public consultation. To achieve this desired aim it is assumed that the full archive will be deposited in Colchester Museums *unless otherwise agreed in advance*. (A full copy of the archive shall in any case be deposited).

By accepting this WSI, the client agrees to deposit the archive, including all artefacts, at Colchester & Ipswich Museum.

The requirements for archive storage will be agreed with the curating museum.

If the finds are to remain with the landowner, a full copy of the archive will be housed with the curating museum.

The archive (excluding human remains) will be deposited with Colchester & Ipswich Museum or an alternate repository (approved by COLEM, CBCAA and DAA) within 3 months of the completion of the final publication report, with a summary of the contents of the archive supplied to CBCAA. Digital archives will be curated with the Archaeology Data Service, or similar accredited digital archive repository, that safeguard the long-term curation of digital records. CAT has an agreement with the Bishop of Colchester to allow the reburial of the human remains to be reburied within consecrated ground.

The CBCAA will be notified of the archiving timetable throughout the project and once deposition has occurred.

A digital / vector drawing of the site be given to the CBCAA for integration into the HER.

Monitoring

CBCAA and DAA will be responsible for monitoring progress and standards throughout the project, and will be kept regularly informed during fieldwork, post-excavation and publication stages.

Notification of the start of work will be given to CBCAA and DAA one week in advance of its commencement.

Any variations in this WSI will be agreed with CBCAA and DAA prior to them being carried out. CBCAA and DAA will be notified when the fieldwork is complete.

The involvement of CBCAA and DAA shall be acknowledged in any report or publication generated by this project.

Education and outreach

The CAT website (www.thecolchesterarchaeologist.co.uk) is updated regularly with information on current sites. Copies of our reports (grey literature) can be viewed on the website and downloaded for free. Staff regularly give lectures to groups, societies and schools (a fee may apply). CAT also works alongside the Colchester Archaeological Group

(providing a venue for their lectures and library) and the local Young Archaeologists Club. CAT archaeologists can be booked for lectures and information on fees can be obtained by contacting the office on 01206 501785. Where possible, if there are positive results CAT will liaise with the school to allow for site visit(s) and/or talks from staff.

References

Note: CAT reports, except for DBAs, are available online in PDF format at <http://cat.essex.ac.uk>

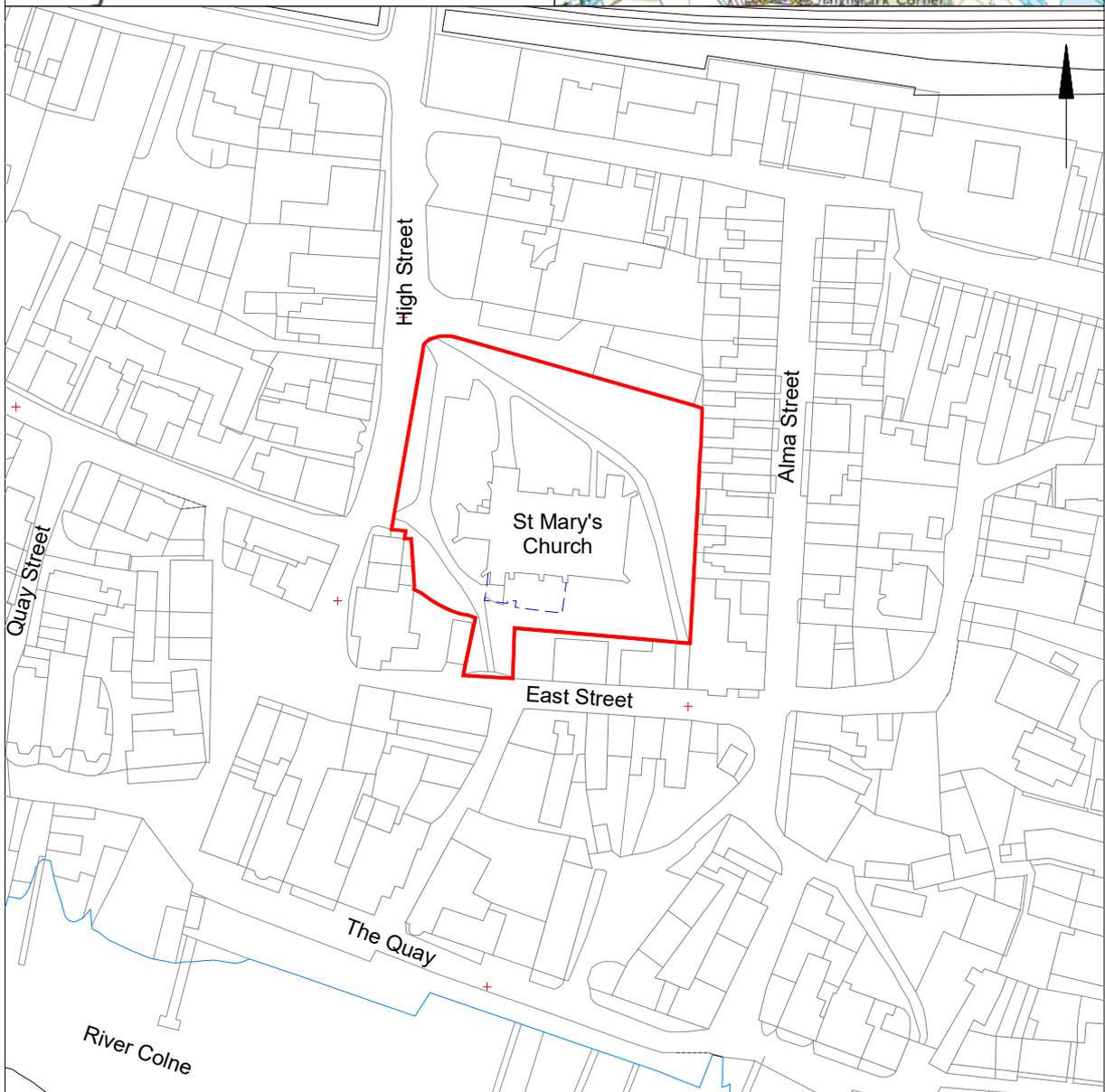
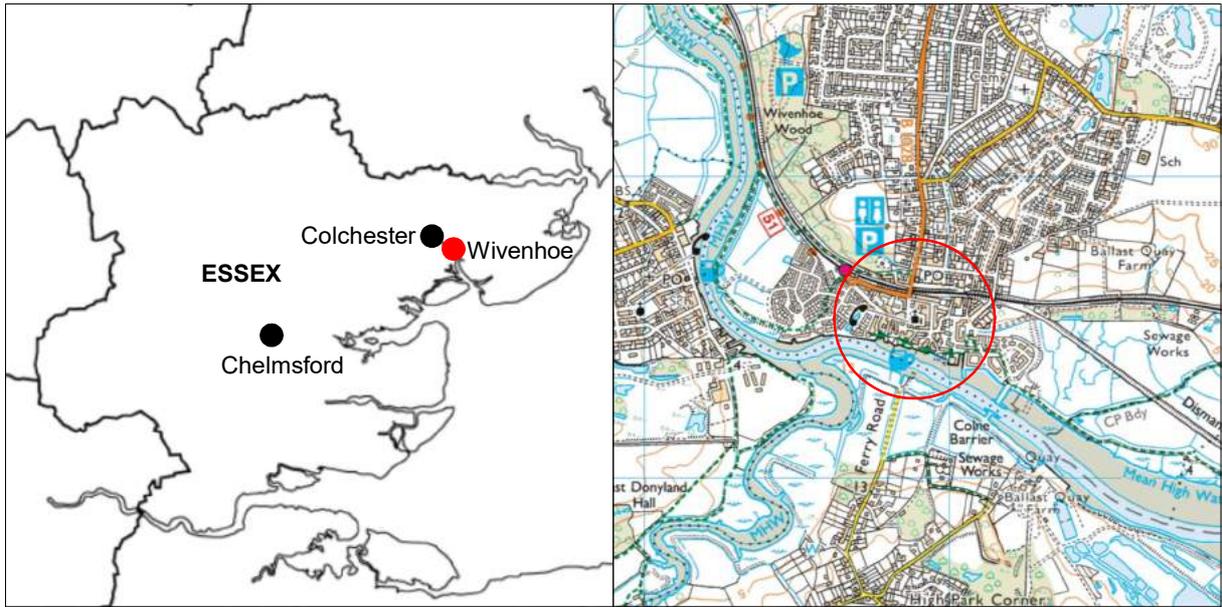
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| CifA | 2014b | <i>Standard and guidance for the collection, documentation, conservation and research of archaeological materials</i> |
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| Medlycott, M | 2011 | <i>Research and archaeology revisited: A revised framework for the East of England</i> . East Anglian Archaeology Occasional Papers 24 (EAA 24) |
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Fig 1 Site location, proposed development dashed blue



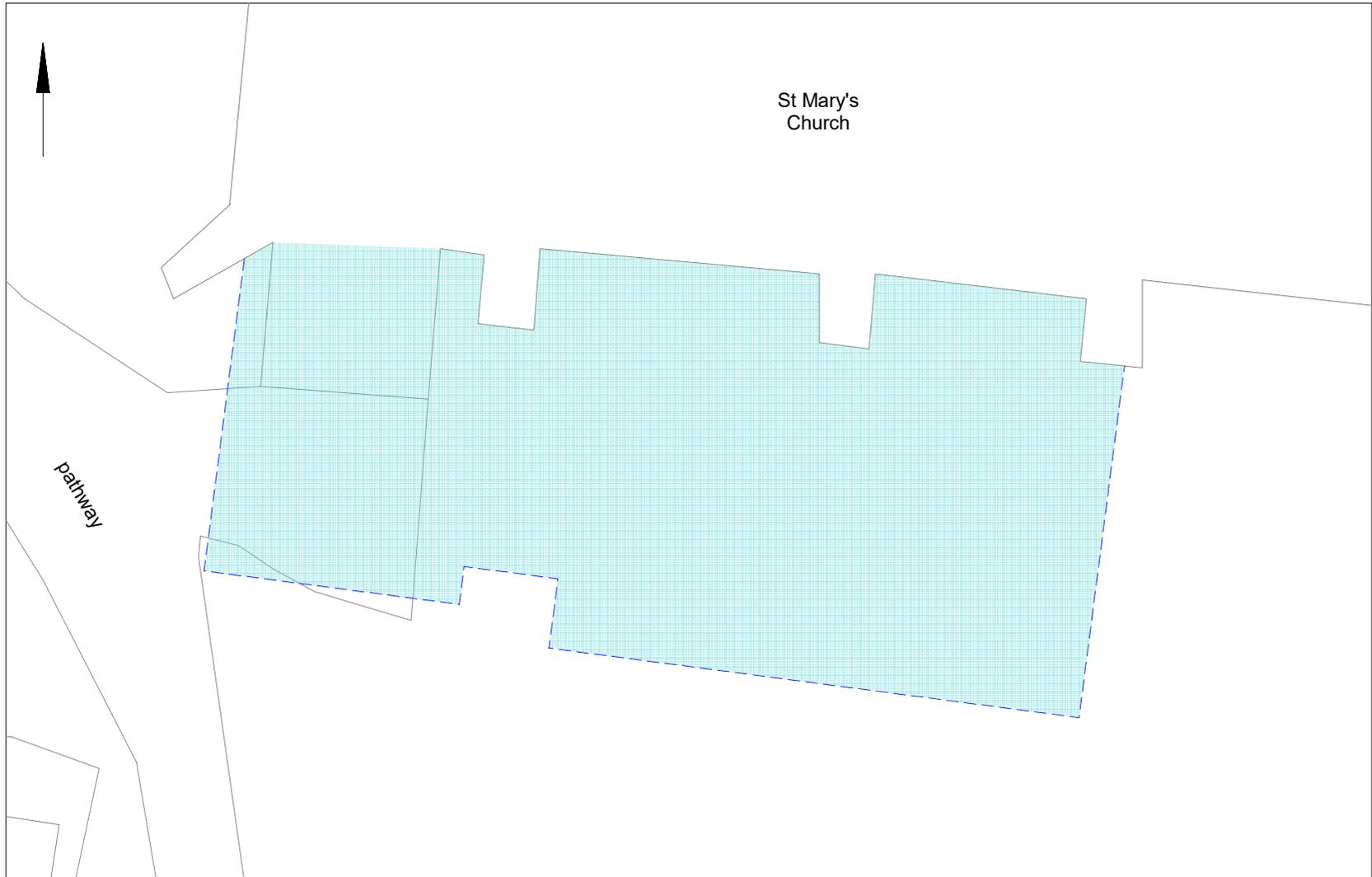


Fig 2 Excavation area for proposed extension.

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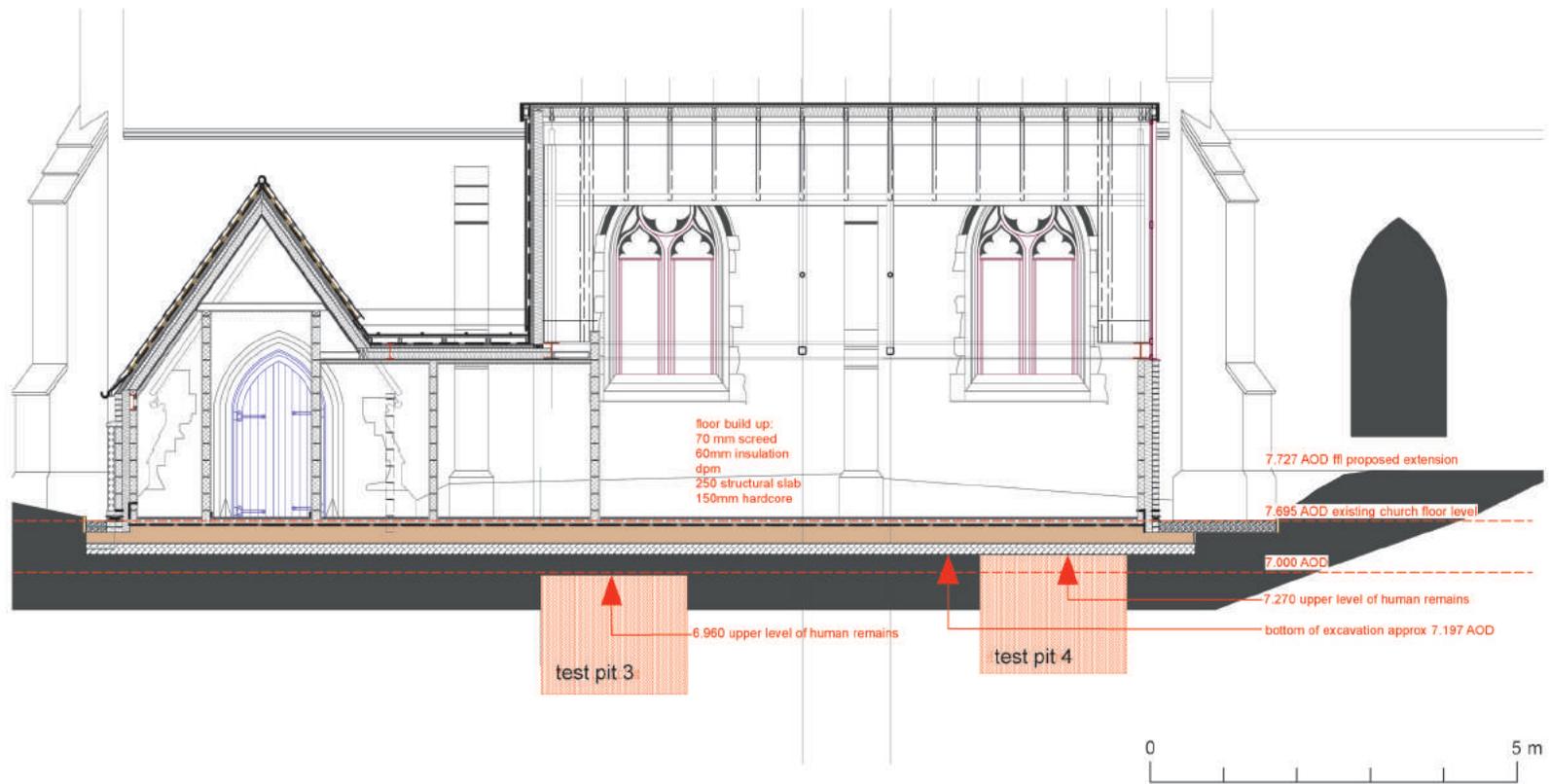


Fig 3 Architectural design showing depth of the proposed flat slab foundation in relation to the evaluation test pits and height of human remains recorded.

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OASIS ID: colchest3-404874

Project details

Project name	Archaeological excavation at St Mary's Church, High Street, Wivenhoe, Essex, CO7 9BD.
Short description of the project	An archaeological excavation was carried out at St Mary's Church, Wivenhoe, Essex in advance of the construction of an extension to house a meeting room and ancillary facilities. During the excavation 24 inhumation burials were uncovered, along with a large amount of disarticulated human bone, representing the remains of at least another 45 individuals. Finds of a 17th-20th century date, including substantial amounts of coffin furniture, were retrieved from the inhumations. As the site has been a burial ground since the 14th century, however, it seems likely that some of the disarticulated remains could be of an earlier date.
Project dates	Start: 14-01-2021 End: 05-08-2021
Previous/future work	Yes / Not known
Any associated project reference codes	162526 - Planning Application No.
Any associated project reference codes	2020/01b - Contracting Unit No.
Any associated project reference codes	ECC4568 - HER event no.
Type of project	Recording project
Site status	Conservation Area
Current Land use	Other 4 - Churchyard
Monument type	GRAVE Post Medieval
Significant Finds	HUMAN REMAINS Post Medieval
Investigation type	""Open-area excavation""
Prompt	National Planning Policy Framework - NPPF

Project location

Country	England
Site location	ESSEX COLCHESTER WIVENHOE St Mary's Church, High Street, Wivenhoe, Essex
Postcode	CO7 9BD
Study area	112 Square metres
Site coordinates	TM 03896 21512 51.854357287561 0.961062993237 51 51 15 N 000 57 39 E Point

Project creators

Name of Organisation	Colchester Archaeological Trust
Project brief originator	CBC Archaeological Officer
Project design originator	Emma Holloway
Project director/manager	Chris Lister
Project supervisor	Mark Baister
Type of sponsor/funding body	Parochial Church Council
Name of sponsor/funding body	PCC St Mary's Church, Wivenhoe

Project archives

Physical Archive Exists?	No
Digital Archive recipient	Colchester Museum
Digital Archive ID	ECC4568
Digital Contents	"Survey"
Digital Media available	"Survey","Text"
Paper Archive recipient	Colchester Museum
Paper Archive ID	ECC4568
Paper Contents	"Ceramics","Survey","other"
Paper Media available	"Photograph","Plan","Report","Section","Survey "

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Archaeological excavation at St Mary's Church, High Street, Wivenhoe, Essex, CO7 9BD January and May 2021
Author(s)/Editor(s)	Baister, M Seehra, M
Other bibliographic details	CAT Report 1687
Date	2021
Issuer or publisher	Colchester Archaeological Trust
Place of issue or publication	Colchester
Description	A4 bound report with clear plastic front and opaque black card back.
URL	http://cat.essex.ac.uk/summaries/CAT-1687.html
Entered by	Mark Baister (mb@catuk.org)
Entered on	5 August 2021

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