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Professional Archaeological Services

Roussillon Park, Broyle Road, Chichester, West Sussex, PO19 6BL

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Non-Technical Summary

This document sets out the results of a Programme of Archaeological Investigation on land belonging to Roussillon Park, Broyle Road, Chichester, West Sussex, PO19 6BL (the Project Site). Permission has been granted for the development of 252 new dwellings with associated landscaping and services (Planning Application Number 10/03490/FUL).

The archaeological investigation was carried out in five phases, from February 2013 – November 2015. Phases Two, Three & Five revealed negative results.

Phase four revealed the remains of three human skeletons. Despite the poor preservation of the material, the results of the Osteological Report suggested that two of the inhumations (Sk 1 and Sk 5) could be tentatively confirmed as adult males. Furthermore, evidence of fastenings associated with male clothing in the region of Sk 1 and Sk 3 suggests that the individuals were likely to have been wearing breeches at the time of burial, a typical masculine dress on the mid-18th century. The correspondence of the burial location with the recorded position of a stone, observing the death of William Jackson and the punishment of six more members of the Hawkhurst Gang, suggests that the remains may represent members of the group. William Jackson is a likely candidate, since the stone records his nearby burial. Richard Mills, the elder and Richard Mills may also be represented, due to the record of their burial adjacent to the gallows on the Broile.

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1. Introduction

Project Background

- 1.1. This document sets out the results of a Programme of Archaeological Investigation on land belonging to Roussillon Park, Broyle Road, Chichester, West Sussex, PO19 6BL (hereafter referred to as the Project Site). Permission has been granted for the development of 252 new dwellings with associated landscaping and services (Planning Application Number 10/03490/FUL).
- 1.2. The work was carried out in response to Condition 22 of the Notice of Grant of Planning Permission (March 2011), which states the following; *'An archaeological investigation of each phase of development shall be carried out in accordance with a specification to be submitted to and agreed by the Local Planning Authority in writing before the commencement of any building works within that phase. The investigation shall be undertaken by an appropriately qualified archaeologist, and shall include the recording of findings and subsequent publication of results.'*
- 1.3. *Reason: This site is of archaeological significance and it is important that it is recorded by excavation before it is destroyed by development.'*
- 1.4. The programme of work was also informed by the document entitled *'Roussillon Barracks, Chichester, Archaeological Desk Based Assessment'* (Lee 2008).
- 1.5. The work was carried out in six phases, detailed below.
 - Pre-Condition - Archaeological Desk Based (Faber Maunsell, 2008)
 - Phase One - Trench Evaluation (Archaeology South-East, 2011)
 - Phase Two - Trench Evaluation (Absolute Archaeology, 2013)
 - Phase Three - Trench Evaluation (Absolute Archaeology, 2013)
 - Phase Four - Strip, Map & Sample (Absolute Archaeology LLP, 2014)
 - Phase Five- Trench Evaluation (Absolute Archaeology LLP, 2014 - 2015)
- 1.6. The Phase One trench evaluation was carried out by Archaeology South-East in 2011, on land to the north of the Project Site. The investigation revealed structures relating to the 19th-20th century



military use of the site, apart from an east-west aligned ditch, potentially representing an 18th century land division.

- 1.7. Subsequent Phases Two – Five were carried out by Absolute Archaeology, with the latter Phase managed by Heritage Planning Services Limited, under project reference HPS-114/15.
- 1.8. All fieldwork was completed by Absolute Archaeology under site code AARC97 from February 2013 to November 2015.

The Project Site

- 1.9. The Project Site is located close to the city of Chichester, West Sussex, 1.5km north of the centre and cathedral. The land became integrated into the urban sprawl in the 1960's and 70's.

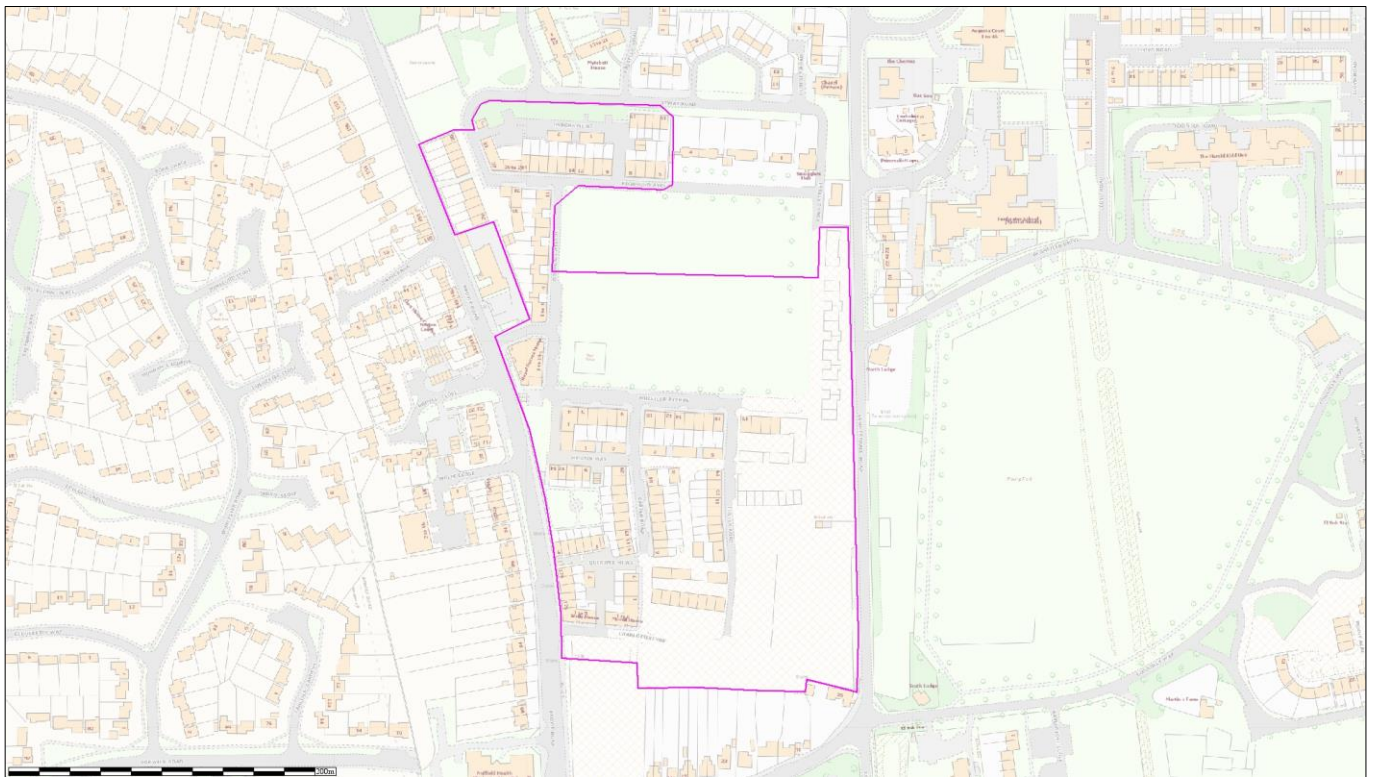


Figure 1 Project Site outlined in Pink

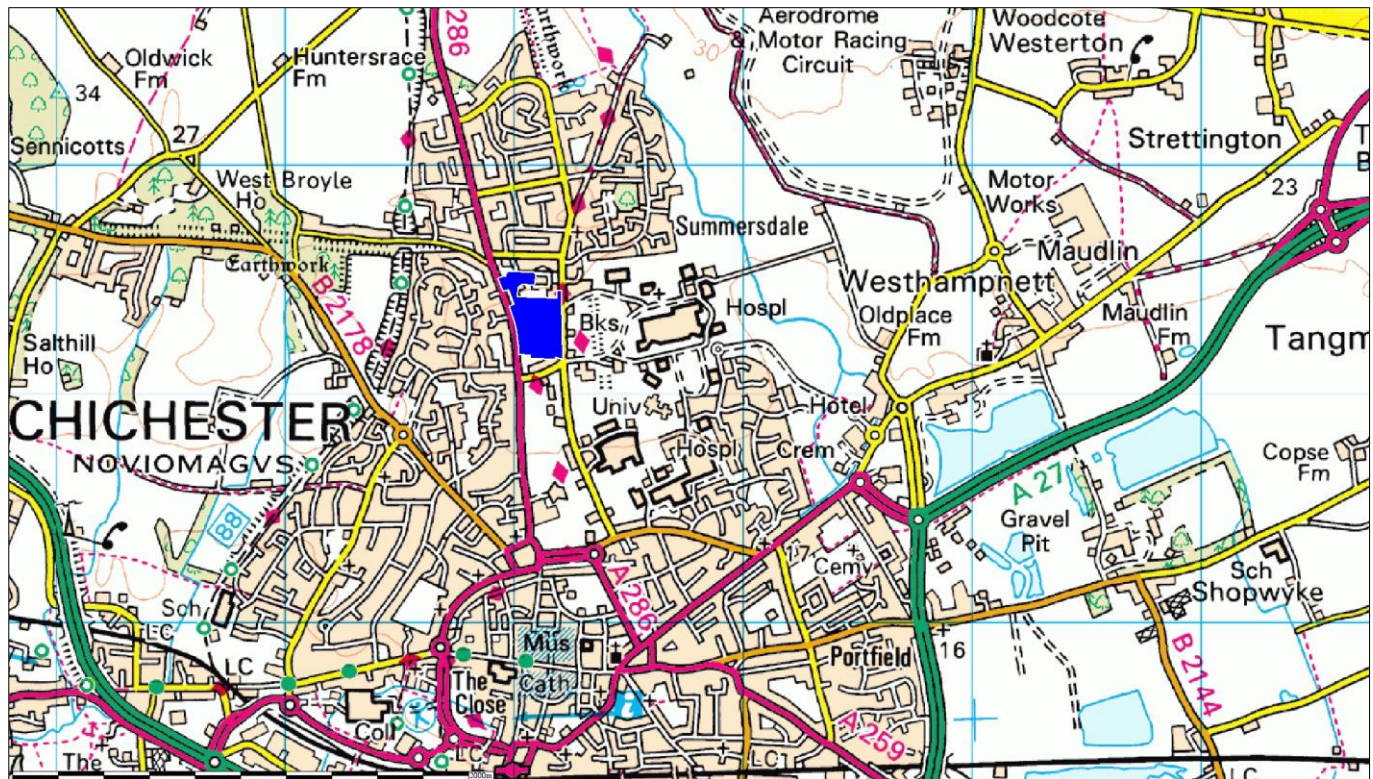


Figure 2 Project Site location in blue

1.10. Geologically the Project Site is defined by Head deposits, overlaying Lambeth Group strata, with London Clay formation to the South. The land is located c.29m aOD.

Archaeological/ Historical Background

1.11. The following information represents a summary taken from the document entitled *Roussillon Barracks, Chichester Archaeological Desk Based Assessment*, completed on behalf of Faber Maunsell, 2008 with supplementary data.

Prehistoric (800000 BC – AD 44)

1.12. Sporadic finds represent the early prehistoric period in the vicinity of the Project Site, with the discovery of a Palaeolithic axe in a garden on Brandy Hole Lane (c. 600m to the NW) and a Neolithic stone axe, in the vicinity of Spitalfield Lane, over 1km to the SE (Lee 2008: 9).

1.13. Bronze Age activity has been recorded c. 500m to the east of the site, in the vicinity of Garylingwell Hospital, where evidence for settlement was identified along with the remains of six cremation burials (Ibid).



1.14. The Iron Age is strongly represented in the vicinity of the Project Site, in the form of earthworks (entrenchments) which may follow the route of The Broadway, bordering the development area, 300m to the north. Excavations at Garylingwell Hospital may have identified a continuation of this defensive system (Lee 2008: 9). In addition, Iron Age settlement has been identified 1km to the north, bordering Broyle Road, where hut circles and ceramics have been identified (English Heritage Ref SJ80 NE8).

Romano-British (AD 44 – AD 410)

1.15. Archaeological investigations c. 700m to the south-east of the Project Site revealed evidence of early Roman-British settlement, in the form of a ditch (EH Ref 1333100), earthwork features, a hearth and a probable Roman Kiln (EH Ref 1336313). Evidence of settlement in the Roman period has also been identified in the vicinity of Garylingwell Hospital and adjacent to Broyle Road, 700m to the north of the Project Site. In addition, Archaeology South East identified a cremation cemetery adjacent to Broyle Road, 800m to the south (Lee 2008: 10).

1.16. Furthermore, a potential Roman Road has been identified, running from the north gate of Roman Chichester (Noviomagus Regnensium), to Silchester (Callewa Atrebatum), potentially following the south-west /north-east route of modern day Norwich Road, 600m south-west of the Project Site (Wacher 1976: 254).

Saxon - Medieval (AD 410 – AD 1540)

1.17. There is very little recorded evidence for early Medieval activity in the vicinity of the Project Site. Lee highlights the site of Chichester Priory, 1km to the SSE and the discovery of a Saxon spearhead, 600m to the north (Lee 2008: 10).

1.18. Changes to the landscape in the mid to late Medieval period are more widely represented. The Project Site formed part of a deer park, granted to the Bishop of Chichester in the 16th century. The land is documented to have remained in the ownership of the church until the barracks were established on the site in the 18th century (Lee 2008: 10).

Post-medieval (AD 1540 – AD 1900)

1.19. The Project Site contains the recorded plot of the City gallows, which are the reported location of the hanging of members of the Hawkhurst Gang, a criminal group involved in smuggling along the



Sussex coast from 1735-1749 AD. A commemorative stone erected on the site in 1749 (now relocated to the south of the site, on Broyle Road), records the event and details the death of one member, William Jackson, who died in prison before his sentence could be carried out. The stone reads:

- 1.20. *"Near this place was buried the body of William Jackson, a prescribed smuggler, who upon a special commission of oyer and terminer held at Chichester on the 16th day of January 1748-9 was, with William Carter, attained for the murder of William Galley, a custom house officer and who likewise was together with Benjamin Tapner, John Cobby, John Hammond, Richard Mills the elder and Richard Mills the younger, his son, attained for the murder of Daniel Chater. But dying in a few hours after sentence of death was pronounced upon him he thereby escaped the punishment which the heinousness of his complicated crimes deserved and which was the next day most justly inflicted upon his accomplices. As a memorial to posterity and a warning to this and succeeding generations this stone is erected A.D. 1749."*
- 1.21. Whilst the stone records seven convictions, the history of the Royal Sussex Regiment documents that nine executions were carried out in January 1749. Along with William Jackson, the bodies of Richard Mills, the elder and Richard Mills, the younger were buried at the side of the gallows. Following their deaths, the bodies of the remaining principle murderers were subject to gibbeting (being hung in chains), two on the Portsmouth Road near Rake (William Carter and Henry Sheerman), two on Selsey Bill, one near Chichester at Rook's Hill and one at Horsmonden in Kent (Platt: 152 – 153). This additional punishment denied each individual their burial rights.
- 1.22. Soon after this event the laws changed with the introduction of the 1751 "*Act for the better preventing the horrid Crime of Murder*", or the "*Murder Act*", which mandated the dissection of the bodies of executed murderers or gibbeting for male murderers in particular cases. The act came into effect in 1752.
- 1.23. Cartographic evidence from 1772¹ records the location of the Broyle Road Gallows, which appear to be depicted in a similar style to those known as *Triple Tree* at Tyburn. The old Broyle Road can be seen to bisect the site, south-west to north-east and an obelisk is shown depicted to the north-west of the gallows (Figure 3).

¹ Plan of the Manor or Grange of the Broyle Being the Farm & Lands Called Broyle Farm near the County of Sussex the Estate of the Reverend Mr Matthias Doyly 1772.



Figure 3 1772 The Broyle farmlands with Project Site outlined in red. Gallows (south) and Obelisk (North) circled.

1.24. By the end of the 18th century the Project Site formed part of the Manor of the Broyle, comprising the farm and lands known as Broyle Farm. By 1846 the land belonged to the Military and Tithe records list the northern portion of the plot as The Barracks (Field 127), whilst the southern portion is named The Gallows Field (Field 126?), both plots are under the ownership of The Barrack Department (Figure 4).

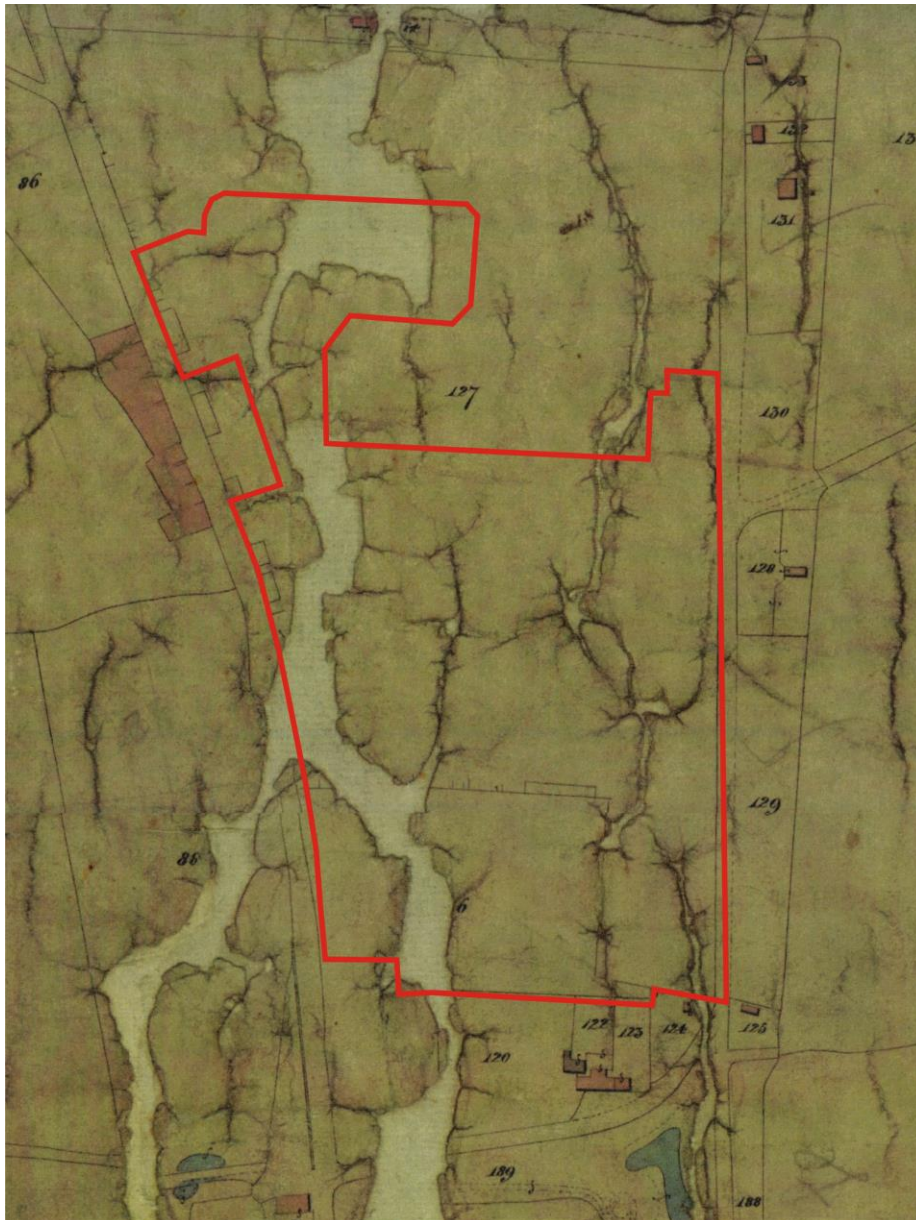


Figure 4 1846 Tithe Map (Project Site outlined in red)

1.25. With regards to the expansion of the site, records show that the northern portion was developed to provide permanent accommodation by 1859, by which time maps show that a hospital (to the south) and parade ground had been established. By 1875 some of the early timber structures were replaced with brick buildings (Figure 5).

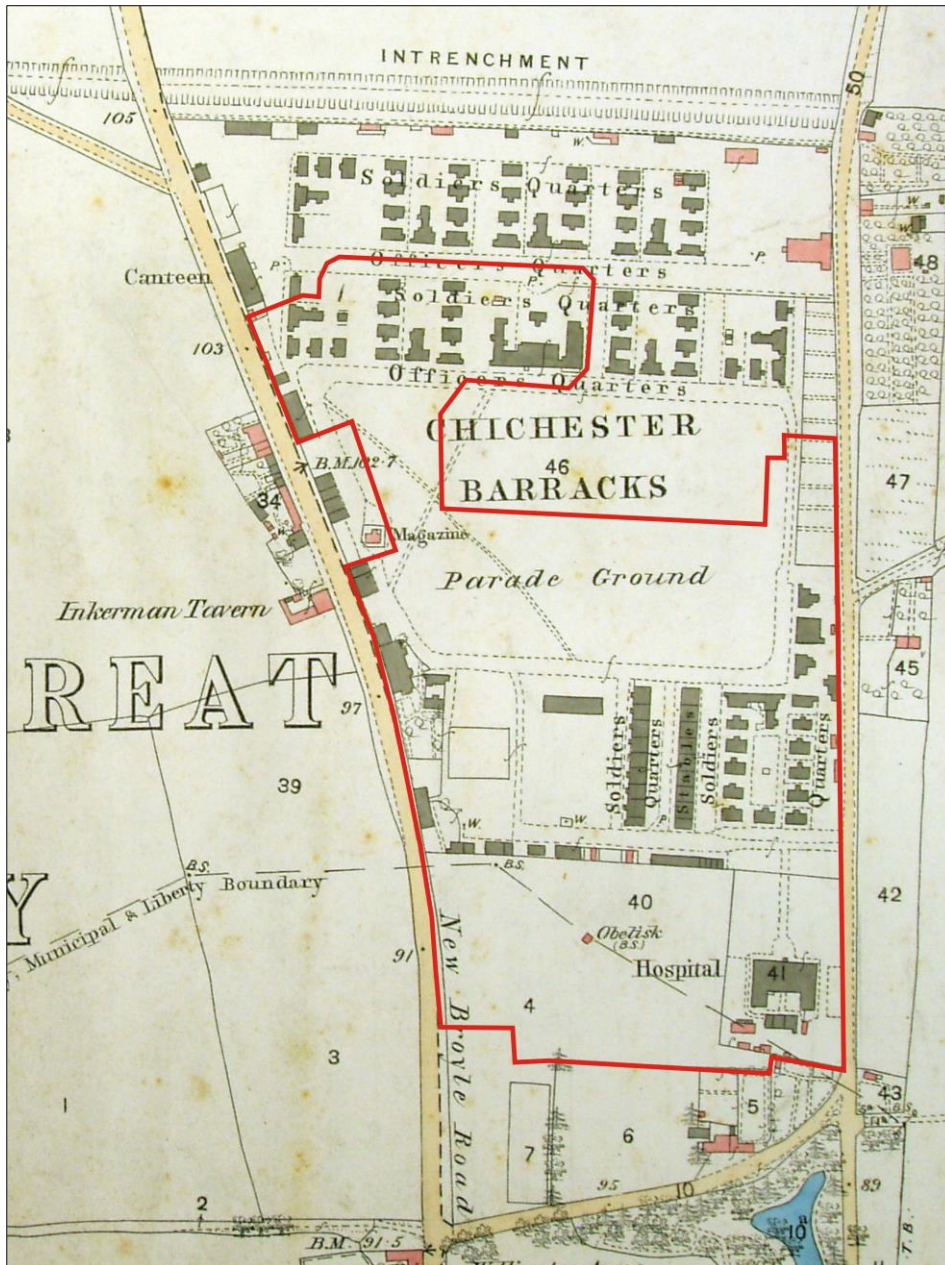


Figure 5 1875 Survey by Capt. W Wynne (Project Site outlined in red)

1.26. The second edition Ordnance Survey of 1912 depicts the Barracks with commemorative stone, obelisk and site of the former gallows marked to the south of the drill ground (Figure 6).

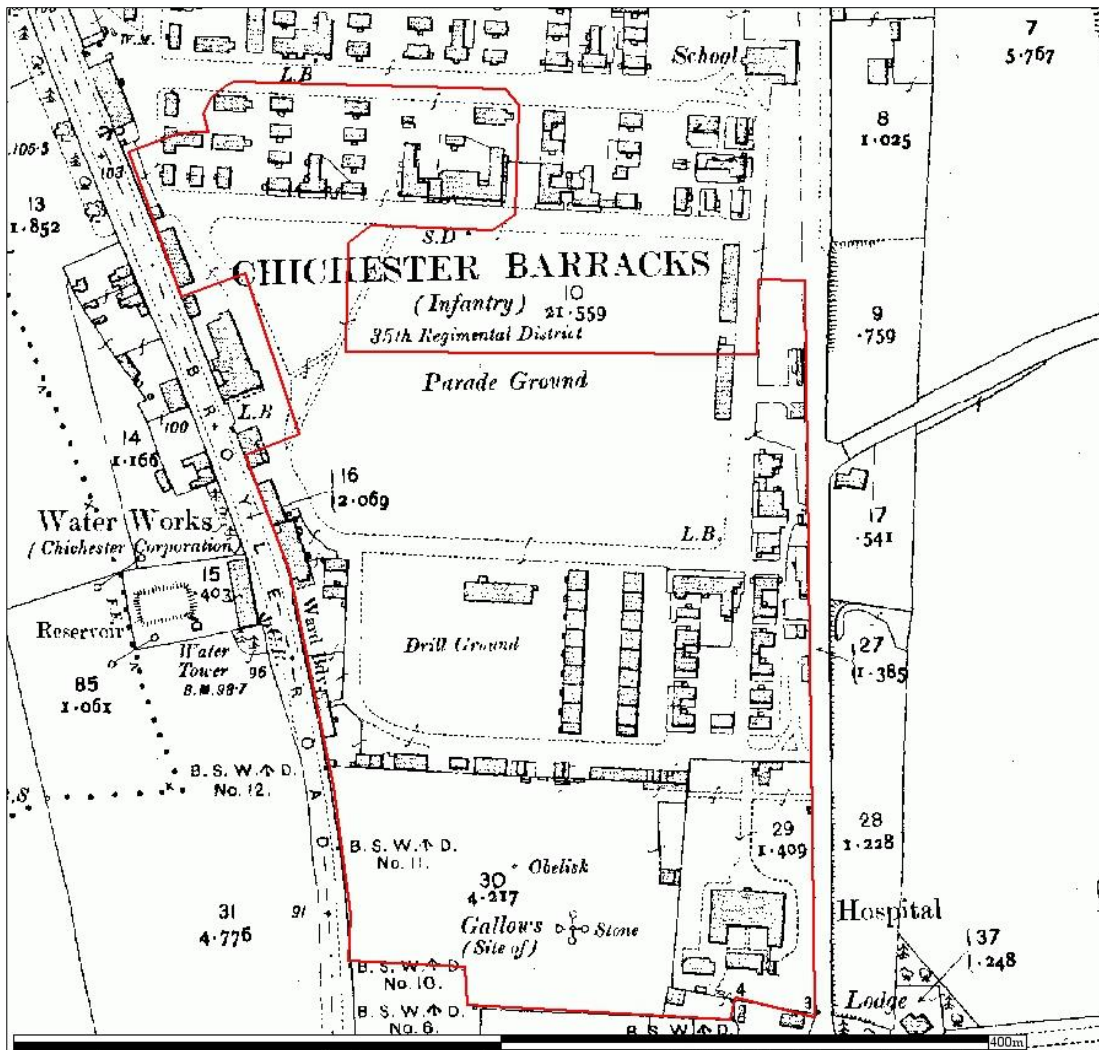


Figure 6 1912 2nd Revision Ordnance Survey (Project Site outlined in red)

2. Methodology

Trench Evaluation

- 2.1. All work was carried out in accordance with the CIFA *Standard and Guidance for an archaeological evaluation* (December 2014).
- 2.2. Broadly the archaeological investigation aimed to-
 - Seek to assess the potential for archaeological activity associated with the Project Site;
 - Establish the date, nature and extent of activity or occupation within the development area;



- Record and identify archaeological features and deposits to a level appropriate to their extent and significance;
- Establish the relationship of any remains found to the surrounding contemporary landscapes;
- Establish the potential for human burial in the vicinity of the Project Site;
- Undertake sufficient post-excavation assessment to interpret archaeological features and phasing identified during the investigation and to place these within their local and regional context;
- Create a site archive for deposition in a suitable repository.

2.3. All excavation by plant was carried out using a mechanical digger with a toothless/grading bucket.

2.4. Consultation with Chichester District Council Archaeology Service was undertaken throughout, allowing regular monitoring visits to be carried out.

3. Archive

3.1. A complete project archive has been prepared in accordance with *Guidelines for the preparation of excavation archived for long-term storage* (UKIC 1990).

3.2. The site archive contains all the data collected during the programme of work, including records and finds and has been quantified, ordered, indexed and checked for internal consistency.

3.3. The archive was prepared to the standards outlined in MoRPHE PPN 3 - Archaeological Excavation (English Heritage 2008), and in accordance with the guidelines published in *Guidelines for the preparation of Excavation Archives for long-term storage* (United Kingdom Institute for Conservation, 1990) and *Standards in the Museum care of archaeological collections* (Museum and Galleries Commission, 1994) and MoRPHE (2006).

3.4. All material recovered from the programme of excavation, together with the site archive will be deposited with The Novium, Tower Street, Chichester, PO19 1QH. All materials will be marked, packaged and presented in accordance with their standard requirements. Security copies of paper records in digital format will be maintained and stored at the Absolute Archaeology office prior to deposition.



- 3.5. All archive elements will be marked with the Site Code AARC97, and a full index will be prepared.
- 3.6. Full context lists, descriptions and trench photographs can be found in the appendices at the end of this report.

Reporting

- 3.7. Once approved, a copy of this report in paper and pdf format will be issued to the Historic Environment Record on the understanding that it will become a public document after an appropriate period of time (generally not exceeding six months). A copy of the report will be submitted to OASIS.

4. Results

- 4.1. The phases detailed in this section represent the stages of archaeological investigation. Corresponding building phases are detailed in Appendix 4.

Phase Two

- 4.2. Seven trenches were mechanically excavated in an area adjacent to Broyle Road, to the west of the Project Site. The programme of investigation was carried out from the 18th – 19th February 2013.

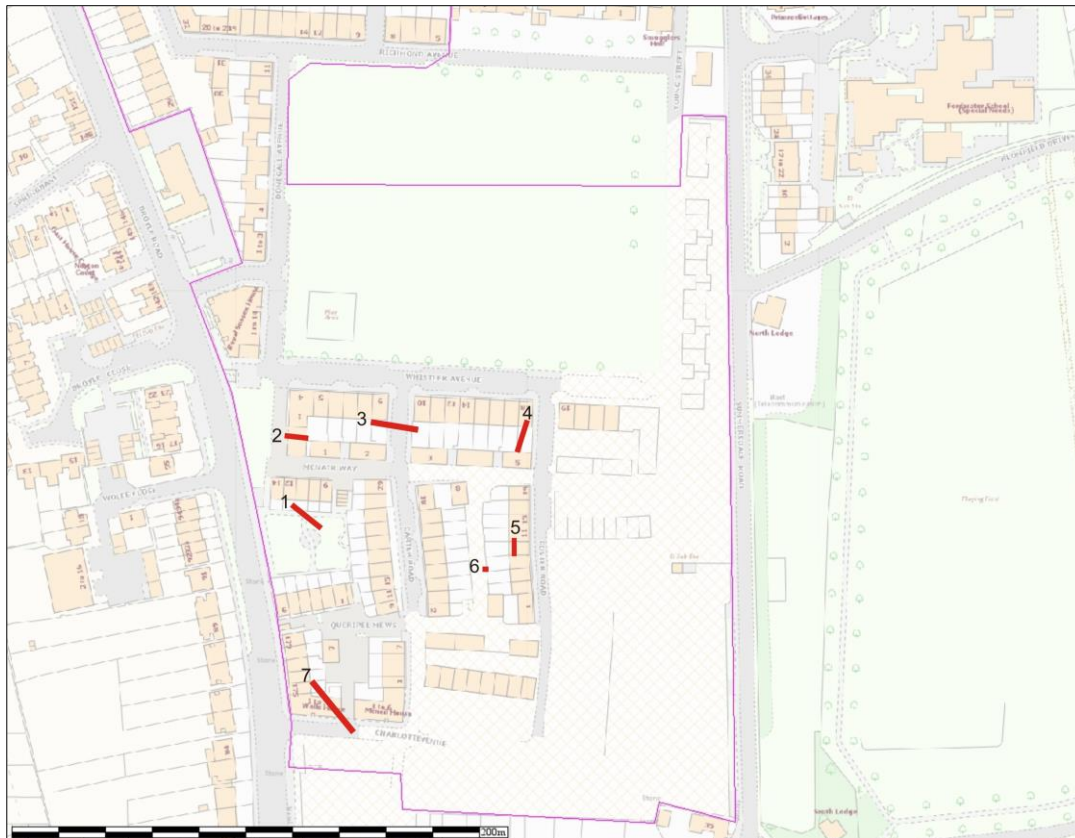


Figure 7 Trench Location Plan

Trench One

4.3. Trench One was excavated to the west of the Project Site, to a depth of 560mm. The mechanical reduction revealed 200mm of dark greyish brown redeposited topsoil (100), sealing 20th century demolition material at the north-west end of the trench. The rubble looked to be associated with the recent clearance of Post Medieval structures from the site and it is suggested that a footing had been extracted from this location, leaving demolition material in the construction cut. The base of the trench was defined by a truncated natural gravel deposit (103), which was most likely levelled to facilitate previous periods of development in this area of the Project Site.

Trench Two

4.4. Trench Two was excavated to the east of the Project Site, to a depth of 500mm. The mechanical reduction revealed 200mm of redeposited topsoil (200), sealing truncated natural gravels (201).



Trench Three

- 4.5. Trench Three was excavated to the north of the Project Site, to a depth of 360mm. The mechanical reduction revealed 200mm of redeposited topsoil (300), sealing a demolished 20th century red brick structure [303], identified in the south facing section. Two courses of the structure were visible, surviving to a length of 4.6m. The nature of the structure was not ascertained. The foundation of [303] was seen have been cut into the truncated natural gravels (305).

Trench Four

- 4.6. Trench Four was excavated to the east of the Project Site, to a depth of 600mm. The mechanical reduction revealed 200mm of redeposited topsoil (400), sealing a deep area of demolition material mixed with topsoil, to the NNE end of the trench [401]. The activity has again been interpreted as disturbance as a result of the recent clearance of the Project Site. Again the demolition was seen to be contained within a possible construction cut/robber trench, which could be seen to cut through the truncated natural gravels (405). The width of this trench was reduced, due to the location of a modern service ditch.

Trench Five

- 4.7. Trench Five was located to the east of the Project Site, to a depth of 500mm. It was apparent during the reduction of the ground level in this area, that the stratigraphy had already been disturbed across this region of the site. The entirety of the trench was defined by modern demolition material, similar to context [401]. Communication with the site staff confirmed that a large basement had recently been removed from this corner of the development site and therefore the trench was abandoned.

Trench Six

- 4.8. Trench Six was planned to be excavated to the south-east on the Project Site, to investigate the area to the south of Trench Five. Following the results of the adjacent trench, it was decided to excavate a sondage in this area to assess the level of disturbance. The results confirmed in excess of 750mm of modern demolition material (600), resulting from the recent removal of Post Medieval basements from this area of the site. Further investigation was not carried out.



Trench Seven

4.9. Trench Seven was located to the south of the Project Site, to a depth of 600mm. The mechanical reduction revealed 200mm-300mm redeposited topsoil (700), sealing a deep area of demolition material and redeposited topsoil, to the north-west end of the trench [701]. The activity has again been interpreted as disturbance as a result of the recent clearance of the Project Site. Again the demolition was seen to be contained within a possible construction cut/robber trench [702], which could be seen to cut through the truncated natural gravels (703).

Phase Three

4.10. A trench evaluation was carried out on the 4th June 2013. The archaeological investigation comprised the reduction of a soakaway, excavated under archaeological supervision.

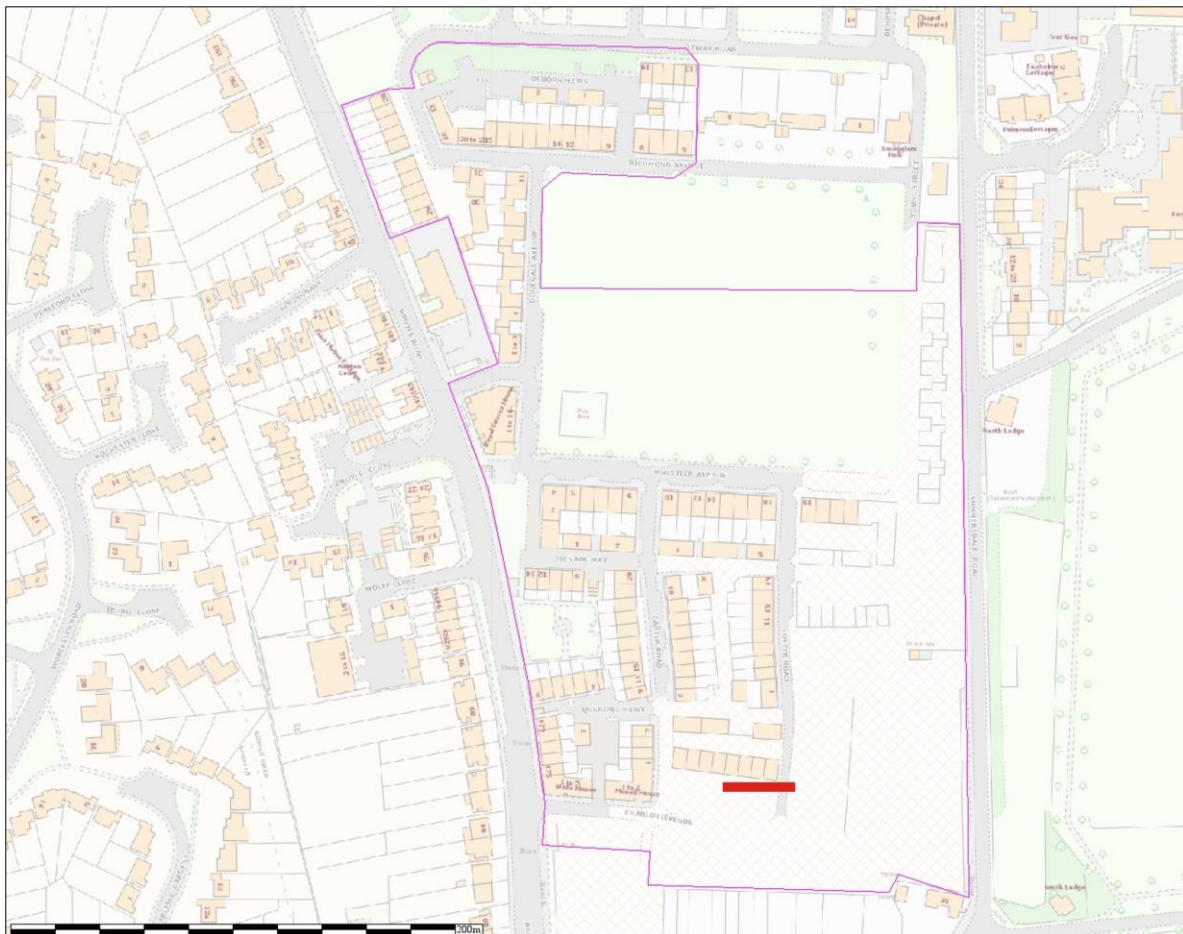


Figure 8 Soakaway location in red

4.11. The soakaway trench was orientated east-west and measured 32m (l) x 3m (w), to a depth of 500mm. The excavation revealed 50mm of tarmac (1), overlaying a loosely cemented tar and

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aggregate make up layer (2). The modern hard landscaping could be seen to seal a Modern courtyard surface [3], preserved in patches throughout the trench. This surface comprised rough, irregular limestone paving stones, set into a truncated subsoil layer (4). Excavation continued to reveal the natural gravels below.

Phase Four

Strip, Map & Record

- 4.12. Monitoring visits were carried out in July 2013 and June 2014 in order to observe groundwork in the vicinity of Phase Four.
- 4.13. Monitoring carried out in June 2014 revealed truncated natural gravels (101), sealed beneath a modern tarmac surface. As identified in Phases Two and Three, the stratigraphy had been reduced to the depth of the natural gravels during previous periods of landscaping and development. The gravel was seen to be cut by grave [103].
- 4.14. Initial investigation indicated the presence of five potential inhumations, however post excavation assessment revealed the remains of three human skeletons labelled SK1, SK2 & SK5. The burials appeared to be interred in a single grave cut, which had been severely truncated to a depth of 500mm. The grave was orientated north-south (location 486116:106181) Figure 9.

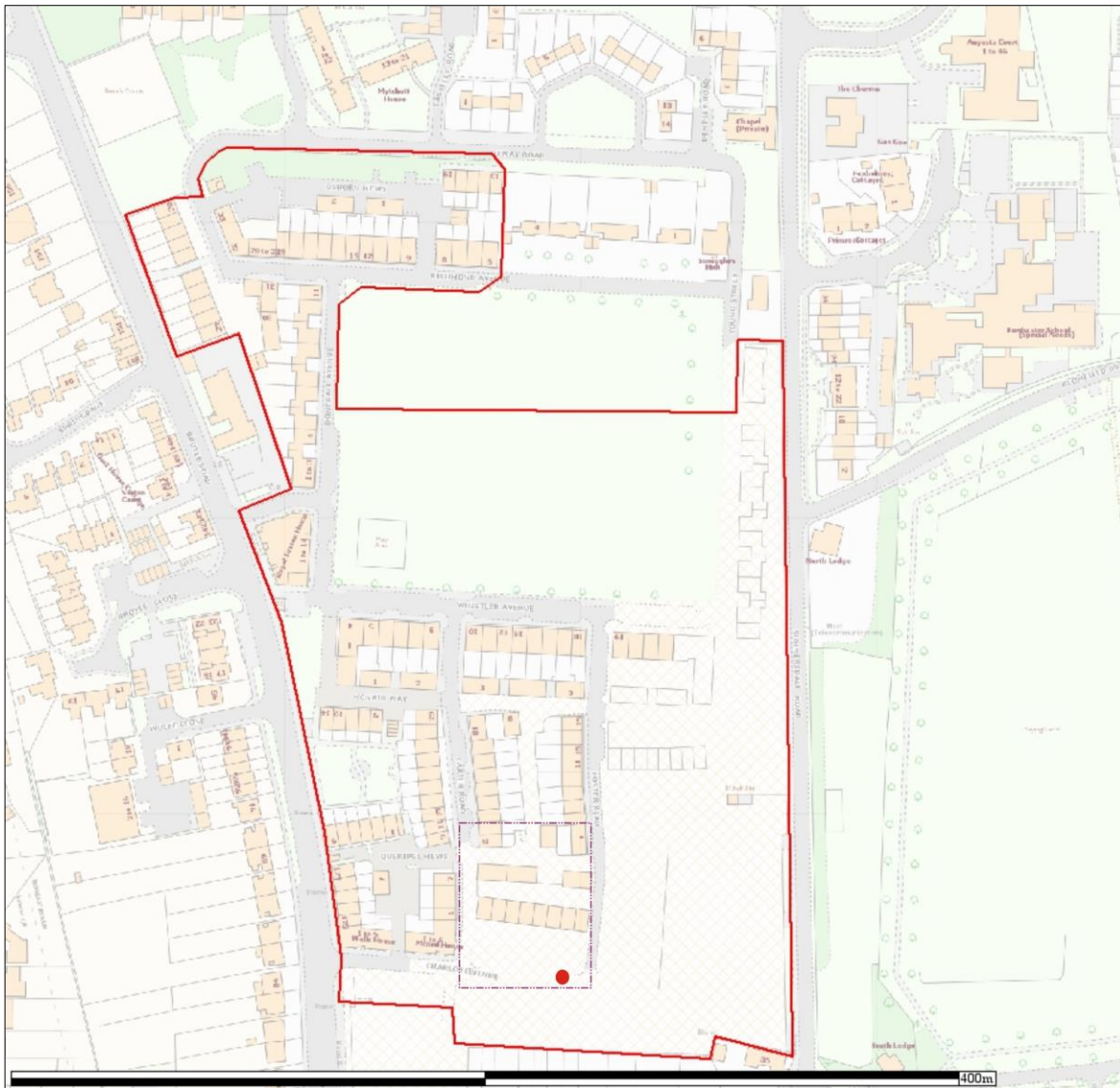


Figure 9 Strip, Map & Record area outlined in purple. Burial location represented by red circle.



Photo 1 South facing view of SK1, Sk3 & Sk5 (Scales 1 x 1m & 1 x 500mm)

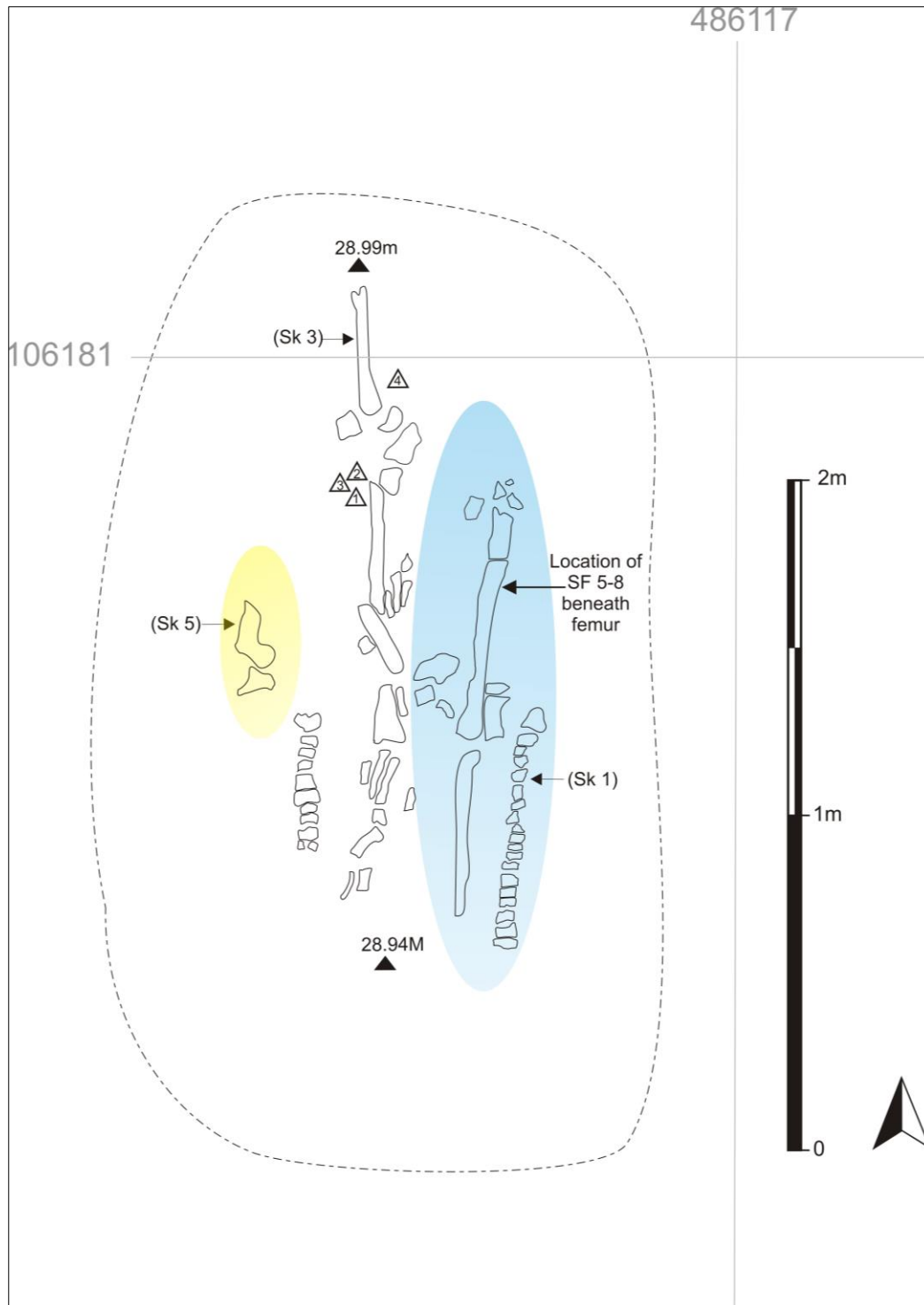


Figure 10 Plan showing relative location of burials. SK1 (shaded blue), SK3 (not shaded), SK5 (shaded yellow).

Radiocarbon Dating

4.15. The distal shaft of the humerus belonging to SK3 was submitted for radiocarbon dating. The radiocarbon date was returned as 185 + 31 BP. This was calibrated to a date range at 95.4%



probability of 1650 -1695 cal AD (20.3%), 1726 – 1814 cal AD (52.2%), 1838-1843 cal AD (0.5%), 1852-1868 cal AD (1.7%) and 1917 cal AD > (20.6%).

Finds

4.16. A collection of eight copper alloy buttons was recovered from the patella region of SK1 and SK3 (SF 1-8). The location and nature of the finds suggests that they represent fastenings for breeches (trousers stopping just below the knee), which were in fashion in the 18th century. Although the buttons are badly corroded, x-radiography of the artefacts revealed the preservation of a woven fabric, which appears to have absorbed the corroding metal, seen as a faint halo around small finds 1, 4, 7 and 8 (Figure 11).

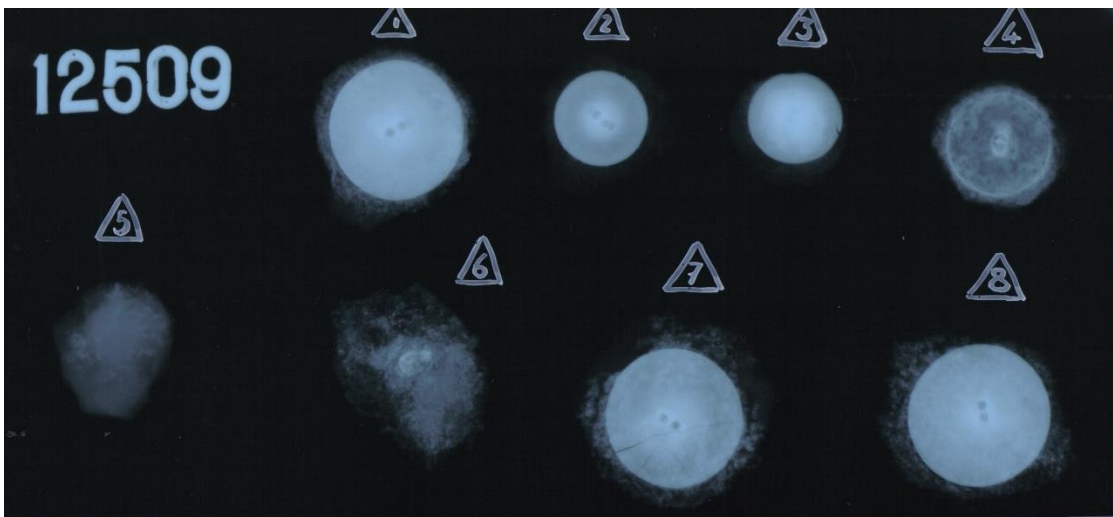


Figure 11 Small Finds 1-8 X-Ray Plate (90kv / 30 seconds)

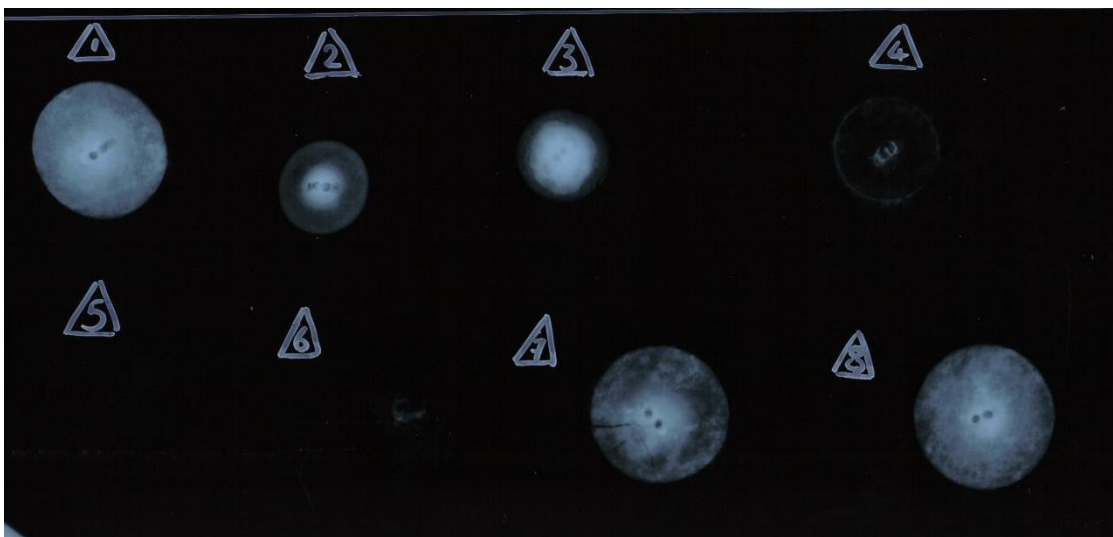


Figure 12 Small Finds 1-8 X-Ray Plate (90kv / 2 minutes)



5. OSTEOLOGICAL REPORT ~ Amanda Bailey MSc

- 5.1. During the Post Medieval period the City gallows were situated just to the south of the area from which the human remains were recovered. The skeletal material was uncovered at a depth of 500mm in what may have been a single grave cut with no evidence for coffins. Alignment was north-south with the heads being towards the south and the remains were in an extended position. Although initial observation appeared to suggest five skeletons, detailed examination of all the skeletal material post-excavation revealed that the remains represented a minimum number of individuals (MNI) of three. Copper objects later identified as buttons were recovered below and adjacent to the legs of the skeletal remains. These have been dated to the Post Medieval period.
- 5.2. The results of the osteological analysis of the three skeletons recovered from the site are presented here.
- 5.3. The remains were examined using standard anthropological methods following the guidelines for the recording of human remains set out by BABAO and the Chartered Institute for Archaeologists (CIfA) (Brickley & McKinley, 2004). The results reflect palaeodemographic (age at death, sex, stature and skeletal anomalies) and palaeopathological data.



METHODS

Examination of the material

5.4. The skeletal elements belonging to each skeleton were identified and laid out on a workbench in standard anatomical position. A macroscopic osteological examination was then undertaken and an inventory of the presence or absence of all elements produced. Digital photos were taken of any significant palaeopathology. Coding systems, where possible, were based on the guidelines in Brickley and McKinley (Brickley & McKinley, 2004) and Buikstra and Ubelaker (Buikstra & Ubelaker, 1994). The reconstruction of elements from fragments was undertaken where it would add to the information to be gained e.g. skull or pelvis for sexing.

Assessment of Preservation and Completeness

- 5.5. An overall preservation was assigned to each skeleton using the coding system of Brickley & McKinley (2004, p.16) based on the integrity of the cortices and joint surfaces, where good (Grade 0 – 1) indicated that the majority of cortices and joint surfaces were free from any erosion and poor (grade 4 – 5+) indicated that the majority of surfaces were affected by erosion and/or many elements were fragile or crumbling.
- 5.6. Completeness was unrelated to preservation and was recorded on the basis of the percentage of the skeleton that was present, 75 – 100% being the most complete.

Determination of Sex

- 5.7. The methods used to determine the sex of skeletal remains are observations of morphological differences in the skull and pelvis. An additional method is the measurement of the dimensions of postcranial elements, although poorly preserved skeletal remains cause problems when assigning sex using this method. None of these methods can be applied accurately unless a skeleton is fully mature (Cox & Mays, 2000). The pelvis is considered the most reliable element for sex determination (Buikstra & Ubelaker, 1994, p. 16) with greater weight given to the traits of the pelvis and in particular the pubic bone (Phenice, 1969).
- 5.8. In the remains examined here neither the skull nor the pubic bone were available for analysis therefore where the sex is tentatively indicated it is on the basis of examination of the sciatic notch from the pelvis and measurements of particular postcranial elements that have been shown to have strong sexual differences, such as measurements of the diameters of the heads of the humerus and



femur (Brickley & McKinley, 2004). For these limb bones single or combined measurements can accurately identify the sex in 80 – 90% of individuals (White & Folkens, 2000). For this report measurements of the head of the femora were used following Bass (1995). The diameter of the incomplete femoral heads indicated a dimension below which the maximum diameter could not have fallen and therefore allowed an inference of the sex in two cases.

Estimation of Age at Death

- 5.9. Methods employed to age subadults (those younger than 18 years) are based on epiphyseal fusion, diaphyseal length and the development and eruption of the dentition (Scheuer & Black, 2000).
- 5.10. Various methods are used in an attempt to estimate the age at death of an adult and to improve accuracy several methods should ideally be used. These rely on well-preserved portions of the pelvis, the fourth ribs, the cranium and the dentition. Unfortunately, in the remains examined here none of these elements were available. Therefore, in the absence of any unfused elements (in this case long bones and vertebrae) the remains were estimated as being those of skeletally mature individuals or adults, although they may have been slightly less than 18 years of age.

Metrical Analysis

- 5.11. No elements were complete enough to allow metrical analysis and the estimation of stature in these remains.

Non-Metric Traits

- 5.12. Non-metric traits are variations in the normal morphology of skeletal elements that are not related to disease or activity. These may take the form of extra bone (bony spurs, ossicles within cranial sutures), ossification or fusion failure (septal aperture of the humerus, metopism) or variations in foramina (Buikstra & Ubelaker, 1994). The significance of these traits in contemporary studies is based on the suggestion that they show familial inheritance (*ibid.*) however whether one or many genes control the expression of these traits and how much environmental factors influence their expression is uncertain (Brothwell, 1981). (For example, auditory exostoses are closely related to exposure to cold water (White & Folkens, 2000)).



5.13. In general traits recorded are those cranial and postcranial non-metric traits listed in the IFA guidelines (Brickley & McKinley, 2004). They are noted as being present, absent or unobservable (missing or damaged bone).

Dental Status

5.14. The dentition often survives when other elements of the skeleton have deteriorated and is important because it reflects age at death, diet, health and disease. The dentition was examined for dental pathologies such as apical cavities, caries, periodontal disease and calculus.

Palaeopathology

5.15. All skeletal elements were examined for signs of pathology. Any lesions noted were examined using a 10x magnifying glass and described using standard anatomical terminology. Where possible a diagnosis was made with reference to standard texts ((Aufderheide & Rodriguez-Martin, 1998), (Ortner, 2003)). It should be noted that poor preservation, fragmentation and incompleteness of remains will lead to the loss of evidence for many disease processes.



RESULTS

Position and MNI

- 5.16. Alignment of the remains was north-south with the heads being towards the south of the site. Despite post-depositional disturbance of the skeletal elements they were in an extended rather than a crouched position. There was no evidence to suggest burial within coffins. Post-Medieval copper buttons were found below or adjacent to the femora of SK1 and SK3 and may have been from clothing worn by the individuals when buried. No other grave goods were recovered.
- 5.17. Although initial observation appeared to suggest five skeletons detailed examination of all the skeletal material, including the scattered disarticulated bones, post-excavation revealed that the remains represented a minimum number of individuals (MNI) of three.

Preservation and Completeness

- 5.18. All three skeletons were extremely poorly preserved, most elements being Grade 5 (Brickley & McKinley, 2004, p. 16). The surfaces were heavily eroded and the elements were fragmented, many being unidentifiable. The elements were highly porous and light as a result of mineral dissolution and many had disappeared altogether. The depth of the burials and the gravel within the surrounding soil would have contributed to the poor survival of these remains. Irrespective of the acidity of the soil, groundwater is probably the most influential agent in bone degradation (Nielsen-Marsh, Gernaey, Turner-Walker, Hedges, Pike, & Collins, 2000). The burial environment would have had fluctuating hydrological conditions where the movement of groundwater would have accelerated the degradation of the bone chemically and also mechanically by abrasion from gravels.
- 5.19. As well as soil staining on the surface of many elements, green copper staining was noted on the posterolateral surface of the middle of the shaft of the right femur from SK3 (Plate 1). Copper objects, later identified as buttons, were recovered below this element and these have been dated to the Post-Medieval period.



Plate 1. Posterolateral shaft of right femur from SK3 showing copper staining.

5.20. Each skeleton was less than 25% complete with mainly the lower limbs and parts of the pelvis being present. Some fragments of thoracic and lumbar vertebrae were also identified and SK3 had bones from the arms and hands.

5.21. Plates 2 - 4 show the elements recovered from SK1, SK3 and SK5 (excluding disarticulated material).



Plate 2. SK1 Elements present



Plate 3. SK3 Elements present

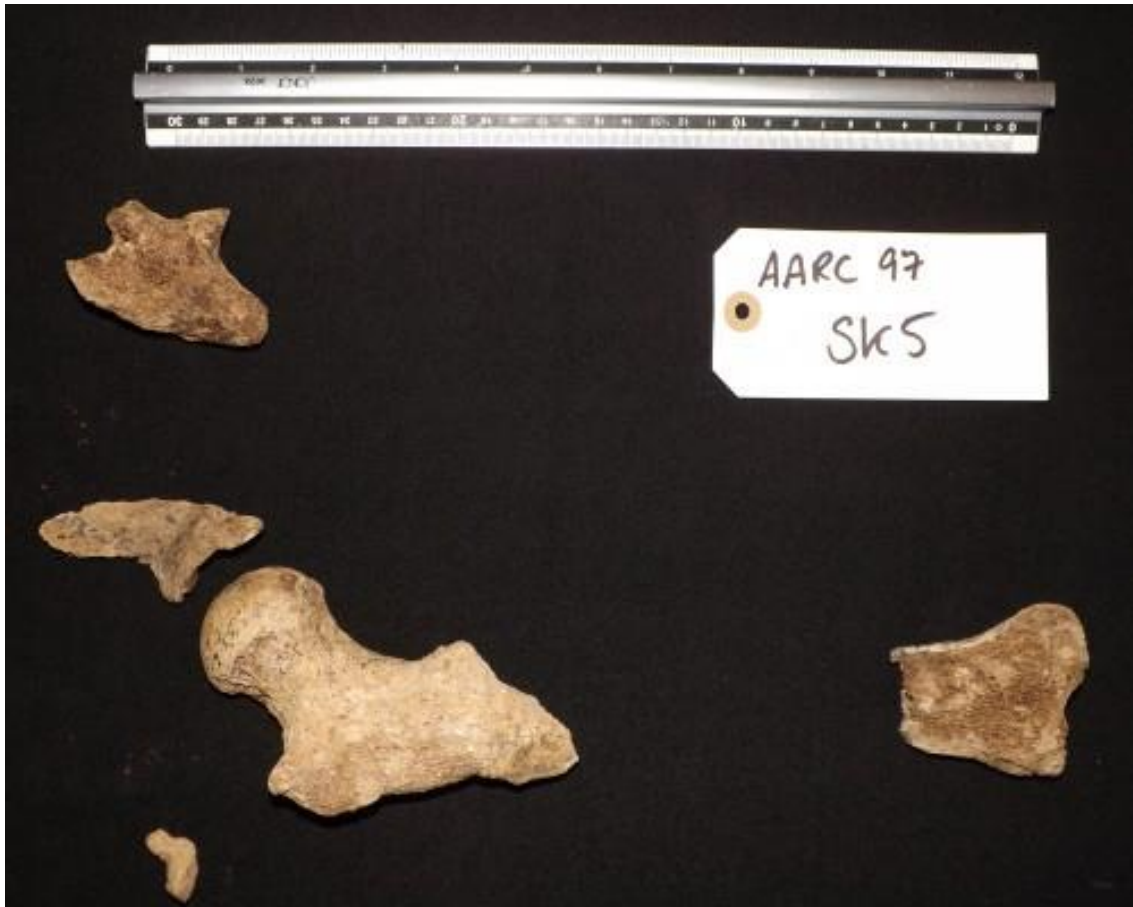


Plate 4. SK5 Elements present

Sex and Age-at-death

5.22. Two of the skeletons from Roussillon Barracks were possible males.

5.23. SK1 had a fragment of sciatic notch which was an obtuse angle and the diameter of the femoral head fragment was 47.85mm, implying that the complete head diameter would have been greater than this (>48mm indicates male (Bass, 1995)). SK5 had a fragment of femoral head with a diameter of 50.36mm, also strongly suggesting male. The general size and robusticity of the elements added further support to the assessment.

5.24. All elements present had fused completely, indicating that these were not the remains of an immature individual. However, the proximal femur can fuse as early as 16 years (Buikstra & Ubelaker, 1994) and no other later fusing elements were available.



Non-metric traits

5.25. The distal septal aperture was noted as being absent in the left humerus of SK3.

Dental Status

5.26. Amongst the disarticulated material two permanent teeth were recovered with a fragment of mandible. The alveolar bone was too eroded to observe any evidence for periodontal disease. A right permanent lower first molar and second pre-molar was identified and no evidence of pathology was noted however both were poorly preserved and there had been exfoliation of some enamel.

Palaeopathology

Osteophytosis

5.27. Osteophytes were noted in two of the individuals.

5.28. Osteophytes are growths of new bone found around the margins of joints (Rogers and Waldron, 1995). Osteophytes alone do not signify pathology in a joint although they are associated with osteoarthritis and degenerative disc disease, and instead appear to be part of the ageing process. Osteophytes of the vertebral bodies are associated with ageing (Rogers *et al.*, 1987:192), can be seen as early as the 3rd decade and are seen in 60% of females and 80% of males by 60 years (Ortner, 2003:549). The presence of osteophytes in these individuals was recorded and graded following Buikstra and Ubelaker (1994:121).

5.29. SK1 had minor osteophytes on the inferior margin of the left superior facet joint of a lower lumbar vertebra. SK3 had minor osteophytes at both hips joints visible on the margin of the left acetabulum (hip socket) and the inferior margin of the right femoral head. In the disarticulated material moderate osteophytes were observed at the margin of the right glenoid fossa (socket of the shoulder joint). This is a less common joint to be affected by degenerative changes (Waldron, 2009).

Enthesophytes

5.30. Amongst the disarticulated material there were enthesophytes/ossification (with some extensive spicule formation) present on the superior aspect of the root of the spinous process (SP) of an unidentifiable thoracic vertebra.



5.31. Enthesophytes are outgrowths of new bone that occur at the insertion points of tendons or ligaments. They are part of the spectrum of enthesal changes which are seen at the sites of attachments of ligaments and tendons to bone and range from pitting and porosity to new bone formation (nodular or spicules) which can be exuberant (Knusel & Villotte, 2013). They may be associated with repetitive muscular exertion and have been used as an indicator of activity, but they are also associated with other diseases such as Diffuse Idiopathic Skeletal Hyperostosis (DISH) (Aufderheide and Rodriguez-Martin, 1998). At what point they are considered a response to repetitive movements and when they become a sign of pain and pathology is not clear. For this report, the presence of enthesophytes was recorded and graded following Buikstra and Ubelaker (1994:121).

5.32. The new bone seen here was at the area of approximation of the SP of the vertebra above and would have been at the enthesis of the interspinous ligament which runs between adjacent SPs. The new bone had smooth margins, was nodular and irregular, and extended 5mm postero-superiorly from the surface of the SP. It would have formed a nodular "U" shaped margin around the tip of the SP above (Plate 5).

5.33. This indicates that there was some enthesitis (inflammation of the enthesis) and ossification at this area of the spine. This may have been the result of injury (direct blow) or of strain to these structures from repeated movements or indirect injury. Some spondyloarthropathies (inflammatory diseases affecting the spine), such as Ankylosing Spondylitis, lead to progressive ossification of the interspinous ligament amongst other soft tissues, and affects multiple joints in the spine (Rogers & Waldron, 1995). However, the exact cause of this lesion cannot be determined from an isolated vertebral fragment.



Plate 5. Posterior view (left) and inferior view (right) of thoracic vertebra showing extra bone growth at enthesis of interspinous ligament.

Osteochondroma

- 5.34. The distal end of the right femur of SK5 had a 3 mm diameter peduncular exostosis (new bone formation), continuous with the cortex, extending 5mm caudally, away from the joint surface, on the posterior of the medial supracondylar surface. It had a smooth rounded caudal end. Because of its location on the metaphysis of a long bone, in particular the femur, and the direction of growth, a differential diagnosis for this lesion is osteochondroma.
- 5.35. An osteochondroma is a primary benign bone tumour that is found on the external surface of bones. It is a bony exostosis (bony growth), covered in cartilage which extends from the surface of, commonly, the distal femur and proximal humerus and tibia (Waldron, 2009). It begins during the growing period of the skeleton, most developing before the age of 30, and is found on the surfaces of the metaphyses of the bones (Aufderheide & Rodriguez-Martin, 1998; Ortner, 2003). The cortex of the tumour is continuous with that of the surrounding bone. Radiography would be required to confirm the continuity of the cortex and distinguish this from myositis ossificans traumatica (MOT), which can look similar to these lesions.



Plate 6. Lateral view of exostosis on medial distal right femur of SK5. (Distal is left)

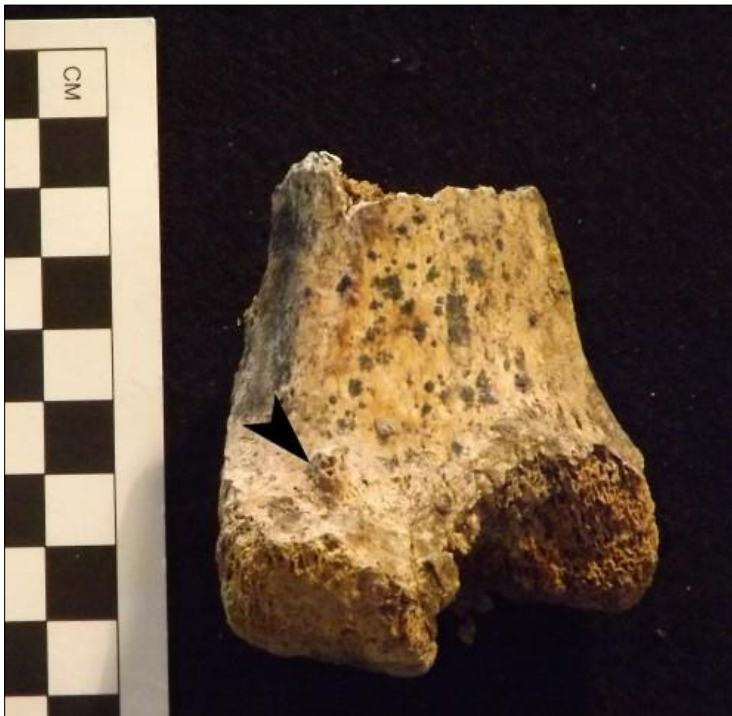


Plate 7 Posterior view of distal right femur of SK5 showing exostoses (arrowhead).

Conclusion

Table 1 Summary of osteological data from Roussillon Barracks



Criteria	Summary	
Preservation	Extremely poor, grade 5 (Brickley & McKinley, 2004) Porous, fragmented and eroded	
Completeness	< 25%	
MNI	3	
Age	Adults	
Sex	Two possible Males	
Stature	No metrical data available to estimate	
Non-metric traits	None observable	
Dentition	Two permanent teeth recovered (lower right first molar and second premolar) No pathology observed	
Pathology	Joint Disease	Osteophytosis bilateral hips, right shoulder
	Spinal	Osteophytosis facet joint of lumbar vertebra Interspinous ligament ossification/enthesophytes in thoracic spine
	Neoplastic	Possible Osteochondroma right distal femur

5.36. The skeletal remains recovered from the site of the Roussillon Barracks, Chichester were extremely poorly preserved and incomplete. As such very little evidence had survived to enable more than an estimation of the age-at-death and sex of these individuals. Evidence of most diseases or trauma affecting bone would also have been destroyed.

Phase Five

5.37. Nine trenches were mechanically excavated in an area to the east of the Project Site. The programme of investigation was carried out in three phases from October 2014 – November 2015.

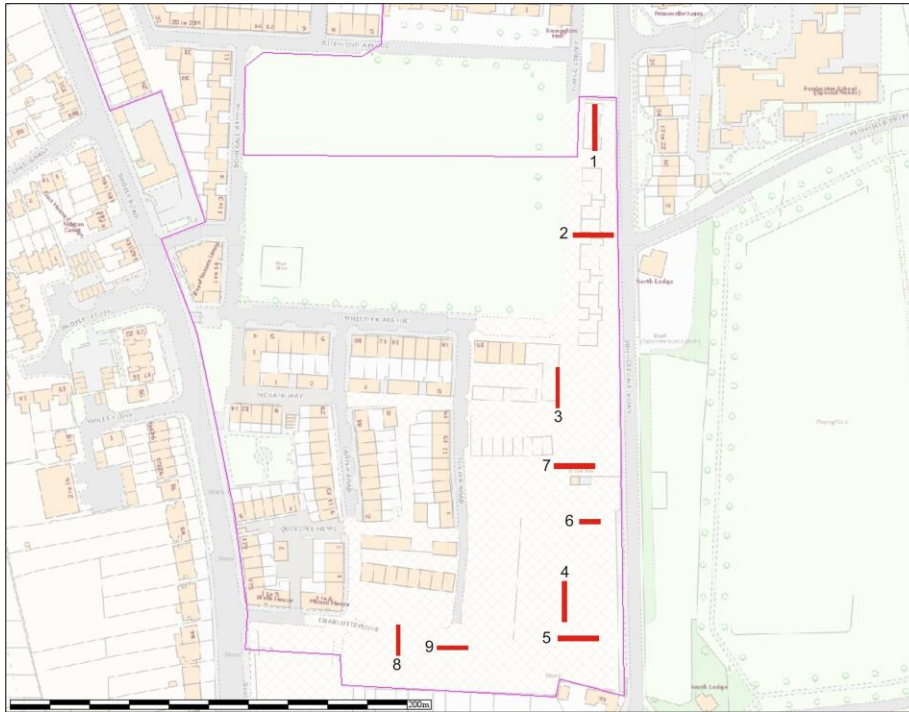


Figure 13 Trench Layout

Trench One

5.38. Trench One was excavated to a depth of 500mm. The mechanical reduction revealed 500mm of truncated natural gravels (100), which was most likely levelled to facilitate previous periods of development in this area of the Project Site.

Trench Two

5.39. Trench Two was excavated to a depth of 1m. The mechanical reduction revealed 500mm of made ground (200) sealing truncated natural gravels (201).

Trench Three

5.40. Trench Three was excavated to a depth of 1m. The mechanical reduction revealed 500mm of made ground (300), sealing truncated natural gravels (301).



Trench Four

5.41. Trench Four was excavated to a depth of 1m. The mechanical reduction revealed 300mm of reinforced concrete [400], representing the 20th century hardstanding. This was seen to seal 500mm of made ground (401) with was overlaying truncated natural gravels (402).

Trench Five

5.42. Trench Five was excavated to a depth of 1m. The mechanical reduction revealed 300mm of reinforced concrete [500], representing the 20th century hardstanding. This was seen to seal 500mm of made ground (501), with was overlaying truncated natural gravels (502).

Trench Six

5.43. Trench Six was excavated to a depth of 500mm. The mechanical reduction revealed 300mm of reinforced concrete [600], representing the 20th century hardstanding. This was seen to seal 150mm of made ground (601) which was overlaying truncated natural gravels (602).

Trench Seven

5.44. Trench Seven was excavated to a depth of 800mm. The mechanical reduction revealed 200mm of 20th century reinforced concrete hardstanding [700], sealing 500mm of made ground (801). This was seen to be cut by the construction trench for a modern brick wall [703] (now truncated below ground level). The base of the trench was represented by truncated natural gravels (702), signifying the levelling of ground for an earlier phase of development, probably contemporary with the construction of wall [703].

Trench Eight

5.45. Trench Eight was excavated to a depth of 1m. The mechanical reduction revealed imported topsoil (800), sealing truncated natural gravels (801).

Trench Nine

5.46. Trench Nine was excavated to a depth of 400mm. The mechanical reduction revealed imported topsoil (900), sealing truncated natural gravels (901).



Finds

The results of Phase Five were negative and no artefacts were recovered as a result the trench evaluation.

6. Discussion

- 6.1. The results of Phase Two, Phase Three & Phase Five investigations were negative. The Project Site could be seen to have been severely truncated, to the depth of the natural gravels across the entirety of the development area. This is due to the levelling of the site during subsequent phases of expansion during the military occupation. It is likely that shallow features would have been obliterated as a result.
- 6.2. Furthermore, no residual material finds were recovered from the spoil, which was monitored throughout.
- 6.3. The results of Phase Four confirmed the presence of three burials to the south of the Project Site. Despite the poor preservation of the material, the results of the Osteological Report suggested that two of the inhumations (Sk 1 and Sk 5) could be tentatively confirmed as adult males. Furthermore, evidence of fastenings associated with male clothing in the region of Sk 1 and Sk 3 suggests that the individuals were likely to have been wearing breeches at the time of burial, a typical masculine dress on the mid-18th century.
- 6.4. The orientation of the grave cut being north-south suggests the denial of the Christian burial rite to face east during the resurrection, indicating that this marks the burial site of those considered beyond the community of the church.
- 6.5. The even distribution of the skeletal remains and the apparent correspondence between the locations of the pelvic regions, favours the theory that all three bodies were interred at the same time and in a single grave.
- 6.6. Radiocarbon dating of the bones returned a 52.2 % probability of a date range of 1726 – 1814 AD once calibrated.



6.7. The position of the human remains was georeferenced to the 2nd revision Ordnance Survey map, which records the location of the memorial stone detailing the burial William Jackson and the hanging of William Carter, Benjamin Tapner, John Cobby, John Hammond, Richard Mills the elder and Richard Mills the younger. The results are detailed on Figure 14, where the location of the burials is marked by the red circle.

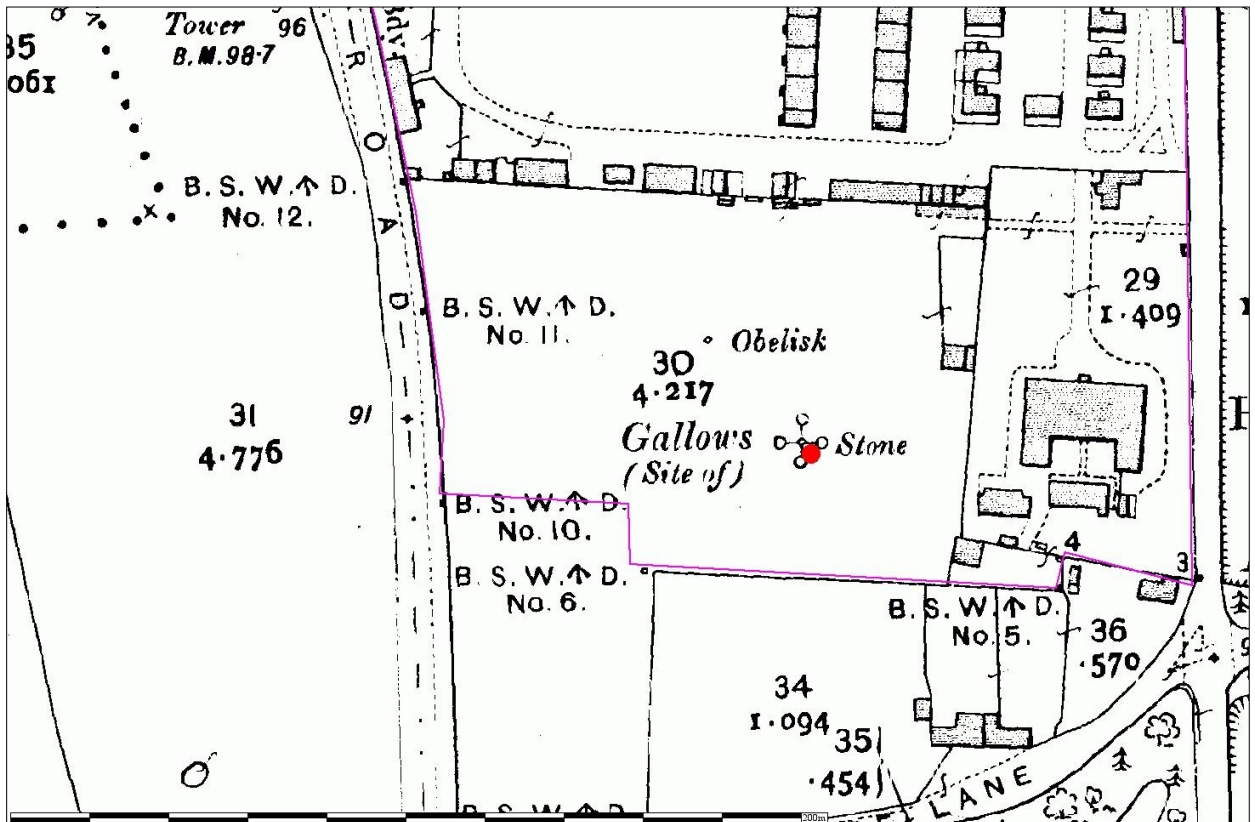


Figure 14 Detail of 1912 2nd Ed Ordnance Survey Map. Red circle marks burial locations.

6.8. The location of the burials can be seen to occupy the position of the marked location of the memorial stone.

7. Conclusion

7.1. Although the identity of the skeletal material remains non conclusive, the radiocarbon date and corresponding evidence of clothing would appear to favour an 18th century date. Furthermore, the orientation of the burials, suggesting the denial of the sanctity of Christian ritual, supports the notion that the inhumation represents the remains of individuals put to death as a criminal punishment. As does the indication of a single shared grave.



- 7.2. The correspondence of the burial location with the recorded position of the stone observing the death of William Jackson and the punishment of six members of the Hawkhurst Gang suggests that the remains may represent members of the group. William Jackson is a likely candidate, since the stone records his nearby burial. Richard Mills, the elder and Richard Mills may also be represented, due to the record of their burial adjacent to the gallows on the Broile (Waugh 146: 1985).
- 7.3. Further evidence of archaeological activity was not identified on the Project Site and it is concluded that shallow features have been truncated and destroyed due to the continued redevelopment of the site throughout the Post Medieval and Modern periods.



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Internet Source

<http://www.royalsussex.org.uk/the-roussillon-regiment/roussillon-barracks/>



9. Appendix

Appendix 1 Context Information Phase Two

Trench Number: 1							
Description: Machine excavated linear evaluation trench.					Orientation	NW-SE	
					Depth	560mm NW	
					Width	2m	
					Length	16m	
Contexts (100)-(104)							
Context Number	Type	Depth/ Height	Width	Length /Diameter	Colour (Munsell Ref)	Findings	Recorded Date
100	Redeposited Topsoil	200mm	>2m	>16m	Dark Greyish Brown	-	19.02.2013
101	20 th Century Demolition Material	360mm	>2m	>3m	-	-	19.02.2013
102	Cut-Robber Trench	360mm	>2m	>3m	-	-	19.02.2013
103	Truncated Natural Gravels	-	>2m	>16m	-	-	19.02.2013
104	Cut-Event levelling of Project Site	-	-	-	-	-	19.02.2013



Trench Number: 2							
Description: Machine excavated linear evaluation trench.					Orientation	WNW-ESE	
					Depth	500mm	
					Width	2m	
					Length	10m	
Contexts (200)-(202)							
Context Number	Type	Depth/ Height	Width	Length /Diameter	Colour (Munsell Ref)	Findings	Recorded Date
200	Redeposited Topsoil	200mm	>2m	>10m	Dark Greyish Brown	-	19.02.2013
201	Truncated Natural Gravels	>300mm	>2m	>10m	-	-	19.02.2013
202	Cut-Event levelling of Project Site	-	-	-	-	-	19.02.2013



Trench Number: 3							
Description: Machine excavated linear evaluation trench.					Orientation	ESE-WNW	
					Depth	370mm WNW	
					Width	2m	
					Length	20m	
Contexts (300)-(306)							
Context Number	Type	Depth/ Height	Width	Length /Diameter	Colour (Munsell Ref)	Findings	Recorded Date
300	Redeposited Topsoil	200mm	>2m	>20m	Dark Greyish Brown	-	19.02.2013
301	Cut-Modern Service	-	1m	>2m	-	-	19.02.2013
302	Fill of [301]	-	1m	>2m	Dark Greyish Brown	-	19.02.2013
303	Brick Structure	200mm	-	4.6m	-	-	19.02.2013
304	Construction Cut	-	-	>4.6m	-	-	19.02.2013
305	Truncated Natural Gravels	-	-	-	-	-	19.02.2013
306	Cut-Event levelling project site	-	-	-	-	-	19.02.2013



Trench Number: 4							
Description: Machine excavated linear evaluation trench.					Orientation	NNE-SSW	
					Depth	600mm NNE	
					Width	1.5m	
					Length	14.5m	
Contexts (400)-(406)							
Context Number	Type	Depth	Width	Length /Diameter	Colour (Munsell Ref)	Finds	Recorded Date
400	Redeposited Topsoil	200mm	>2m	>16m	Dark Greyish Brown	-	19.02.2013
401	20 th Century Demolition Material including cemented red brick and redeposited topsoil	>400mm	>1.5m	>1m	-	-	19.02.2013
402	Cut-Robber trench for (401)	>400mm	>1.5m	>1m	-	-	19.02.2013
403	Structure	-	-	-	-	-	19.02.2013
404	Structure	-	-	-	-	-	19.02.2013
405	Truncated Natural Gravels	-	-	-	-	-	19.02.2013
406	Cut-Event levelling project site	-	-	-	-	-	19.02.2013



Trench Number: 5							
Description: Machine excavated linear evaluation trench.					Orientation	NNE-SSW	
					Depth	1.1m Sondage	
					Width	1.6m	
					Length	6.5m	
Contexts (500)							
Context Number	Type	Depth	Width	Length /Diameter	Colour (Munsell Ref)	Finds	Recorded Date
(500)	Fill	>1.1mm	>1.6 m	>6.5m	-	-	19.02.2013

Trench Number: 6							
Description: Machine excavated linear evaluation trench.					Orientation	E-W	
					Depth	750mm	
					Width	1.6m	
					Length	2m	
Contexts (600)							
Context Number	Type	Depth	Width	Length /Diameter	Colour (Munsell Ref)	Finds	Recorded Date
(600)	Fill	>750mm	>1.6 m	>2m	-	-	19.02.2013



Trench Number: 7							
Description: Machine excavated linear evaluation trench.					Orientation	NW-SE	
					Depth	600mm	
					Width	2m	
					Length	28m	
Contexts (700)-(704)							
Context Number	Type	Depth	Width	Length /Diameter	Colour (Munsell Ref)	Finds	Recorded Date
(700)	Redeposited Topsoil	200mm-300mm	>2m	>28m	Dark Greyish Brown	-	19.02.2013
(701)	20 th Century Demolition Material including cemented red brick and redeposited topsoil	>600mm	>2m	>1.1m	-	-	19.02.2013
[702]	Cut-Robber trench for (401)	>600mm	>2m	>1.1m	-	-	19.02.2013
(703)	Truncated Natural Gravels	-	-	-	-	-	19.02.2013
(704)	Cut-Event levelling project site	-	-	-	-	-	19.02.2013

Appendix 2 Context Information Phase Three



Trench Number: 1 Soakaway Trench							
Description: Machine excavated linear evaluation trench.					Orientation	E-W	
					Depth	<500mm	
					Width	3m	
					Length	32m	
Contexts (1) – (5)							
Context Number	Type	Depth /Height	Width	Length /Diameter	Colour (Munsell Ref)	Finds	Recorded Date
1	Tarmac	500mm	>3m	>32m	-	None	4.06.2013
2	Aggregate Make Up	130mm	>3m	>32m	-	None	4.06.2013
3	Limestone Paving (Surface)	100mm	>1m	>3m	-	Post Med Galvanised Wire Not Retained	4.06.2013
4	Subsoil	<200mm	>3m	>32m	Mid Yellowish Brown	None	4.06.2013
5	Natural Gravels	-	>3m	>32m	-	None	4.06.2013

Appendix 3 Context Information Phase Five

Trench Number: 1							
Description: Machine excavated linear evaluation trench.					Orientation	N-S	
					Depth	500mm	
					Width	1.8m	
					Length	20m	
Contexts (100)							
Context Number	Type	Depth /Height	Width	Length /Diameter	Colour (Munsell Ref)	Finds	Recorded Date
100	Truncated Natural Gravels	>500mm	>1.8m	>20m	-	-	21.10.2014



Trench Number: 2							
Description: Machine excavated linear evaluation trench.					Orientation		E-W
					Depth		1m
					Width		1.8m
					Length		20m
Contexts (200) – (201)							
Context Number	Type	Depth /Height	Width	Length /Diameter	Colour (Munsell Ref)	Finds	Recorded Date
200	Made Ground	500mm	>1.8m	>20m	-	-	21.10.2014
201	Truncated Natural Gravels	>500mm	>1.8m	>20m	-	-	21.10.2014

Trench Number: 3							
Description: Machine excavated linear evaluation trench.					Orientation		N-S
					Depth		1m
					Width		1.8m
					Length		20m
Contexts (300) – (301)							
Context Number	Type	Depth /Height	Width	Length /Diameter	Colour (Munsell Ref)	Finds	Recorded Date
300	Made Ground	500mm	>1.8m	>20m	-	-	21.10.2014
301	Truncated Natural Gravels	>500mm	>1.8m	>20m	-	-	21.10.2014



Trench Number: 4							
Description: Machine excavated linear evaluation trench.					Orientation	N-S	
					Depth	1m	
					Width	1.8m	
					Length	20m	
Contexts (400) – (402)							
Context Number	Type	Depth /Height	Width	Length /Diameter	Colour (Munsell Ref)	Findings	Recorded Date
400	Reinforced Concrete	300mm	>1.8m	>20m	-	-	21.11.2015
401	Made Ground	500mm	>1.8m	>20m	-	-	21.11.2015
402	Truncated Natural Gravels	>200mm	>1.8m	>20m	-	-	21.11.2015

Trench Number: 5							
Description: Machine excavated linear evaluation trench.					Orientation	E-W	
					Depth	1m	
					Width	1.8m	
					Length	10m	
Contexts (500) – (502)							
Context Number	Type	Depth /Height	Width	Length /Diameter	Colour (Munsell Ref)	Findings	Recorded Date
500	Reinforced Concrete	300mm	>1.8m	>20m	-	-	21.11.2015
501	Made Ground	500mm	>1.8m	>20m	-	-	21.11.2015
502	Truncated Natural Gravels	>200mm	>1.8m	>20m	-	-	21.11.2015



Trench Number: 6							
Description: Machine excavated linear evaluation trench.					Orientation	N-S	
					Depth	500mm	
					Width	1.8m	
					Length	10m	
Contexts (600) – (602)							
Context Number	Type	Depth /Height	Width	Length /Diameter	Colour (Munsell Ref)	Findings	Recorded Date
600	Reinforced Concrete	300mm	>1.8m	>10m	-	-	21.11.2015
601	Made Ground	150mm	>1.8m	>10m	-	-	21.11.2015
602	Truncated Natural Gravels	>50mm	>1.8m	>10m	-	-	21.11.2015

Trench Number: 7							
Description: Machine excavated linear evaluation trench.					Orientation	E-W	
					Depth	800mm	
					Width	1.8	
					Length	20m	
Contexts (700) – (704)							
Context Number	Type	Depth /Height	Width	Length /Diameter	Colour (Munsell Ref)	Findings	Recorded Date
700	Reinforced Concrete	200mm	>1.8m	>20m	-	-	21.11.2015
701	Made Ground	500mm	>1.8m	>20m	-	-	21.11.2015
702	Truncated Natural Gravels	>100mm	>1.8m	>20m	-	-	21.11.2015
703	Structure Truncated 20 th century brick wall	600mm	200mm	-	-	-	21.11.2015
704	Construction Cut for (703)	-	>200mm	-	-	-	21.11.2015



Trench Number: 8							
Description: Machine excavated linear evaluation trench.					Orientation	NNW - SSE	
					Depth	1m	
					Width	1.8m	
					Length	15m	
Contexts (800) – (801)							
Context Number	Type	Depth /Height	Width	Length /Diameter	Colour (Munsell Ref)	Finds	Recorded Date
800	Topsoil	300mm	>1.8m	>15m	-	-	21.11.2015
801	Truncated Natural Gravels	>700mm	>1.8m	>15m	-	-	21.11.2015

Trench Number: 9							
Description: Machine excavated linear evaluation trench.					Orientation	ESE- WNW	
					Depth	400mm	
					Width	1.8m	
					Length	15m	
Contexts (900) – (901)							
Context Number	Type	Depth /Height	Width	Length /Diameter	Colour (Munsell Ref)	Finds	Recorded Date
900	Topsoil	200mm	>1.8m	>15m	-	-	21.11.2015
901	Truncated Natural Gravels	>200mm	>1.8m	>15m	-	-	21.11.2015

Appendix 4 Building Phases

Building Phase	Archaeological Phase	Trench Numbers
1	1	Archaeology South-East
2	2	1, 2, 3 (Partial), 7
3	2, 3 & 4	3 (Partial), 4, 5, 6 & Soakaway / Strip, Map & Record
4	5	1, 2, 3, 7
5	5	4, 5, 6, 8, 9



Appendix 5 Phase Two Photographs

Photograph 1: Trench 1 SE Facing View (Scales 1 x 1m & 1 x 2m)





Photograph 2: Trench 1 SW Facing Section (1 x 500mm & 1 x 2m)



Photograph 3: Trench 2 ESE Facing View (Scales 1 x 1m & 1 x 2m)





Photograph 4: Trench 2 NNE Facing Section (1 x 500mm & 1 x 2m)



Photograph 5: Trench 3 ESE Facing View (Scales 1 x 1m & 1 x 2m)





Photograph 6: Trench 3 SSW Facing Section (Scales 1 x 300mm & 1 x 2m)



Photograph 7: Trench 4 NNE Facing View (Scales 1 x 1m & 1 x 2m)





Photograph 8: Trench 4 WNW Facing View (Scales 1 x 500mm & 1 x 2m)



Photograph 9: Trench 5 NNE Facing View (Scales 1 x 1m & 1 x 2m)





Photograph 10: Trench 5 ESE Facing Section (Scales 1 x 1m & 1 x 2m)



Photograph 11: Trench 6 West Facing View (Scales 1 x 500mm & 1 x 1m)





Photograph 12: Trench 7 NW Facing View (Scales 1 x 1m & 1 x 2m)



Photograph 13: Trench 7 NE Facing Section (Scales 1 x 1m & 1 x 2m)





Appendix 6 Phase Three Photographs

Photograph 14: West Facing View of Natural Gravels (Scales 2 x 2m)



Photograph 15: Detail of Surface [3] (Scales 1 x 300mm & 1 x 500mm)





Photograph 16: North Facing Section of Soakaway Trench (Scales 1 x 500mm & 1 x 2m)





Appendix 7 Phase Four Photograph

Photograph 17 North facing view of ground reduction





Appendix 8 Phase Five Photographs

Photograph 18 South facing view trench 1A (scales 1 x 2m & 1 x 1m)



Photograph 19 South facing view trench 1B (scales 1 x 2m & 1 x 1m)





Photograph 20 West facing section Trench 1B (Scales 1 x 2m & 1 x 600mm)



Photograph 21 West facing view of Trench 2 (Scales 1 x 2m & 1 x 1m)





Photograph 22 North facing section Trench 2 (Scales 1 x 2m & 1 x 1m)



Photograph 23 South facing view of Trench 3 (Scales 1 x 2m & 1 x 1m)





Photograph 24 West facing section Trench 3 (Scales 1 x 2m & 1 x 1m)



Photograph 25 South facing view of Trench 4 (Scales 1 x 2m & 1 x 1m)





Photograph 26 West facing section of Trench 4 (Scales 1 x 2m & 1 x 1m)



Photograph 27 East facing view of Trench 5 (Scales 1 x 2m & 1 x 1m)





Photograph 28 South facing section Trench 6 (Scales 1 x 2m & 1 x 500mm)



Photograph 29 East facing view Trench 6 (Scales 1 x 2m & 1 x 1m)





Photograph 30 West facing view Trench 7 (Scales 1 x 2m & 1 x 1m)



Photograph 31 North facing section Trench 7 (Scales 1 x 2m & 1 x 1m)





Photograph 32 NNE facing view of Trench 8 (Scales 1 x 2m & 1 x 1m)



Photograph 33 WNW facing section Trench 8 (Scales 1 x 2m & 1 x 800m)





Photograph 34 ESE facing view Trench 9 (Scales 1 x 2m & 1 x 1m)



Photograph 35 SSW facing section Trench 9 (Scales 1 x 2m & 1 x 400mm)





Appendix 9 Skeleton Catalogue

SK	Elements	Sex	Age	C	P	Pathology	Other
1	Incomplete right and left femora and pelvis fragments and left tibia. Only fragments of thoracic and lumbar vertebra, portion of sacrum and rib fragments.	? Male (Obtuse angle of sciatic notch and femoral head diameter > 47.85mm)	Adult. (Complete fusion of epiphyses present)	4	5	Osteophytosis left superior facet joint of lower lumbar vertebra	
3	Incomplete right femur, tibia, pelvis? ulna and hand. Incomplete left humerus, radius and ulna, femur and tibia. Left pelvis fragment. Only lumbar and thoracic vertebral fragments, many unidentifiable, and a portion of sacrum.	?	Adult. (Complete fusion of epiphyses present)	4	5	None visible	Distal septal aperture absent Copper staining on posterolateral mid-shaft of right femur
5	Incomplete right femur, fragments of right and left pelvis and possible right scaphoid.	? Male (femoral head diameter > 50.36mm)	Adult. (Complete fusion of epiphyses present)	4	4	Osteophytosis bilateral hip joints ?Osteochondroma right distal femur	
Disarticulated material							
Minimum number of individuals (MNI) including the disarticulated material is still 3.		No juvenile elements identified. Some elements identifiable as adult. Mastoid process of right temporal bone suggests Male.			5	Moderate osteophytosis of right glenoid fossa. Ossification/enthesophytes at site of interspinous ligament in thoracic segment	

C = Completeness. Blank = missing, 1 = >75% present, 2 = 50-75% present, 3 = 25-50% present, 4 = <25% present.

P = Preservation. Grades from IFA report. (Brickley and McKinley, 2004:16). 1 – 2 = Good, 5 = extremely poor



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