

Land of Former Post Office Depot Cattle Market Road Bristol

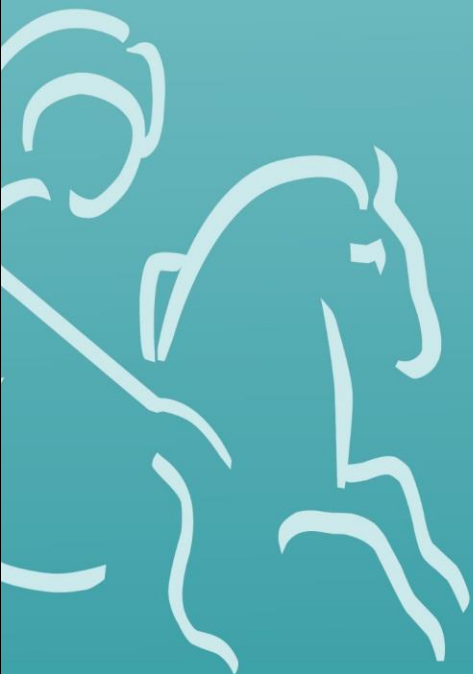
Archaeological Excavation



for:
Kier Construction and AECOM

CA Project: CR0395
CA Report: CR0395_1
OASIS ID: cotswold2-395169

October 2020



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Document Control Grid						
Revision	Date	Author	Checked by	Status	Reasons for revision	Approved by
A	12 May 2021	Liam Wilson/ Sharon Clough	Alex Thomson	Internal review	-	Alex Thomson

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Cirencester Building 11 Kemble Enterprise Park Cirencester Gloucestershire GL7 6BQ t. 01285 771 022	Milton Keynes Unit 8, The IO Centre Fingle Drive Stonebridge Milton Keynes Buckinghamshire MK13 0AT t. 01908 564 660	Andover Stanley House Walworth Road Andover Hampshire SP10 5LH t. 01264 347 630	Suffolk Unit 5, Plot 11 Maitland Road Lion Barn Industrial Estate Needham Market Suffolk IP6 8NZ t. 01449 900 120
e. enquiries@cotswoldarchaeology.co.uk			

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SUMMARY

Project name:	Land of Former Post Office Depot
Location:	Cattle Market Road, Bristol
NGR:	359914 172433
Type:	Excavation
Date:	12–26 October 2020
Planning reference:	19/05746/M
OASIS ID:	cotswold2-395169
Location of Archive:	To be deposited with Bristol’s Museums, Galleries and Archives
Site Code:	PODB20

In October 2020, Cotswold Archaeology carried out an archaeological excavation of land at the Former Post Office Depot, Cattle Market Road, Bristol. Two areas were excavated within the site.

Four burial pits containing twenty-one sets of confined, lime-coated human remains were identified in an area known to have been used as a cholera burial ground in 1832. An overlaying wall and a cobbled surface, possibly associated with a mid-19th century cattle market and 20th-century post office depot were also recorded.

1. INTRODUCTION

- 1.1. In October 2020, Cotswold Archaeology (CA) carried out an archaeological excavation of land at Former Post Office Depot, Cattle Market Road, Bristol (centred at NGR: 359914 172433; Fig. 1). This excavation was undertaken for Kier Construction and AECOM, who were acting on behalf of the University of Bristol.
- 1.2. Bristol City Council (BCC) has granted outline planning permission for a new mixed use University Campus (BCC planning ref: 17/06459/P). A Reserved Matters application (BCC ref: 19/05746/M) has been submitted to define the details of layout, scale, appearance and landscape. As the development has the potential to impact on known archaeological remains (see *Archaeological Background* below), a programme of targeted archaeological mitigation was recommended by Peter Insole, Principal Historic Environment Officer, BCC, and the scope of this excavation has been agreed with Peter Insole.
- 1.3. Give excavation was carried out in accordance with a *Method Statement* (MS) prepared by CA (2020) and approved by Peter Insole.
- 1.4. The excavation was also undertaken in line with *Standard and guidance for archaeological excavation* (ClfA 2014; updated October 2020), *Management of Research Projects in the Historic Environment (MoRPHE) PPN 3: Archaeological Excavation* (Historic England 2015) and *Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide* (Historic England 2015).

The site

- 1.5. The development area is approximately 2.16ha in extent and is occupied by the derelict former Post Office building and associated infrastructure. The former Cattle Market Inn and the Bristol Wood Recycling Project line the southern edge of the site, with Cattle Market Road/Feeder Road beyond. To the north and west of the site is Bristol Temple Meads station and associated railway infrastructure and to the east is the Floating Harbour. The site lies between 8m and 15m AOD, with the ground rising to the north.
- 1.6. The underlying bedrock geology of the area is mapped as sandstone of the Redcliffe Member, formed during the Triassic Period (BGS 2021). The sandstone is overlain by clay and silt Tidal Flat Deposits of the Quaternary Period (ibid.). During a preceding

watching brief, the observed undisturbed natural substrate consisted of a silty alluvial clay (CA 2018).

2. ARCHAEOLOGICAL BACKGROUND

- 2.1. The site has previously been the subject of numerous studies. This includes archaeological watching briefs (MOLA 2010; BWA 2017; CA 2018a), ground investigations (BWA 2014; Quantum Geotechnical 2015), a Heritage Impact Assessment (AHC 2017), a Historic Environment Assessment (MOLA 2017), an Environmental Statement (CPM 2004a), a Heritage Assessment (CDG 2012) and Archaeological Assessments (CMP 2004b; CA 2018b). Below is a summary of these documents and reference should be made to these documents for further detail.
- 2.2. No prehistoric or Roman evidence has been recorded within the site or its vicinity. The nearest Roman settlement is that of Abonae at Sea Mills, located c. 6km to the north-west (CA 2018b)
- 2.3. No Saxon or medieval remains have been recorded within the site. The site would have predominantly lain within marshland during the Saxon and medieval periods (ibid.). The medieval land surface has been identified during previous archaeological works in the area at approximately 7m AOD (CDG 2012).
- 2.4. During the later medieval period, drainage work was undertaken to enable the use of the area for pasture. Ashmead's map of 1828 shows some of these drainage ditches, suggesting that at least part of the area was still being drained and used for agricultural practices into the 19th century.
- 2.5. Development of the site occurred prior to the late 18th-century when extensive works were undertaken on Bristol's watercourses, including the creation of the Floating Harbour immediately to the east of site; this allowed for the development of the area of Temple Meads in the later 18th and 19th-century (CA 2018b). The land to the north of the site, across the river, was made up of smallscale industries such as lime kilns, glass works and coal merchants. However, the site itself remained undeveloped and outside of the main city until the early 19th-century (ibid.).
- 2.6. Cattle Market Road was constructed to the south of the site in the 1820s (as shown on Ashmead's 1828 map) and a Cattle Market, which occupied part of the western

half of the site, was opened in 1830, with other small-scale buildings occupying the site by the mid-1830s.

- 2.7. During 1832, the international cholera epidemic reached Bristol. St Peter's Hospital, located 1km north-west of the site, was hit by the disease in August of that year. St Peter's was both hospital and workhouse, with a reported 600 occupants living in a space designed for 100 residents (Smith 2017). Although the exact number of fatalities from St Peter's resulting from the cholera outbreak is unknown, documentary sources recorded 168 cases of the disease in the workhouse (ibid.).
- 2.8. During August 1832 a cholera burial ground was established within the current site and was likely sited here as a result of the rapid spread of the disease at St Peter's nearby (CA 2018b). The burial ground is shown on a land conveyance plan of 1836 (Fig. 2). As part of the burial process, quicklime was often used in burials relating to contagious disease. The lime, in theory, worked to speed up the decomposition, thus reducing the smells of decomposition (ibid.). Small areas of lime have been identified by previous investigation on the site, whilst human remains have been recorded at depths of approximately 2.4m below present ground level (BWA 2014; Quantum 2015; CA 2018a).
- 2.9. In 1839 construction of Bristol Temple Meads Railway Station was started (CA 2018b). The station was opened in 1840. The introduction of the railway signalled the start of more substantial re-development of the area. Subsequent expansion of the station coincided with the establishment of the first Post Office sorting office to the east of the station in the 1930s. The sorting office was in part sited over much of the projected area of the cholera burial ground and as such may have significantly truncated these remains. The Post Office continued to use the building until the 1990s, at which point the building was vacated.
- 2.10. Within the site, previous investigative works and associated archaeological watching briefs have been undertaken. In 2009 Museum of London Archaeology (MOLA) oversaw groundworks during the removal of five fuel tanks from the eastern area of the site (see Fig. 2 of the current report). No evidence of the burial ground was encountered, although there was no evidence to suggest the burial ground had been previously cleared (MOLA 2010). During 2014 a watching brief during ground investigation was undertaken by Bristol and West Archaeology. During these works, infant human remains were recorded at a depth of 2.2m bpgl (c. 5.5m AOD) in Trial

Pit 5 (BWA 2014). Two coffins were recorded c. 150mm apart in an east/west alignment, with deposits of lime within the coffins (ibid.). A further ground investigation survey was undertaken in 2015 by Quantum Geotechnical. A watching brief was undertaken during these works by Bristol and Region Archaeological Services, the report of which was unavailable at time of writing. The geotechnical report notes that human remains (bone fragments) relating to the cholera burial site was identified at a depth of approximately 2.80m (c. 5.5m AOD) in TP1 (Quantum 2015).

2.11. Two phases of archaeological watching brief were undertaken by Cotswold Archaeology during geotechnical works in 2018 and 2020 (CA 2018 and forthcoming). During the first phase of works two test pits in the eastern part of the site contained human burials at between 5.7m and 6.68m AOD, with a third test pit containing a feature that was highly likely to represent another burial. The burials were sealed by between 1.35m and 2.6m of modern made ground. Within the centre of the site a possible remnant cemetery soil was identified (CA 2018a).

3. AIMS AND OBJECTIVES

3.1. The general objectives of the archaeological excavation were to:

- identify, investigate and record any significant buried archaeological deposits/features at the site prior to their destruction by the proposed development;
- recover and analyse any artefactual evidence;
- report on and publish the archaeological results at a level appropriate to their significance; and
- compile a stable, ordered, accessible project archive.

3.2. The specific objective of the mitigation was to investigate and record any remains associated with the cholera burial ground known to have existed on the site, prior to the proposed development groundworks.

4. METHODOLOGY

4.1. Two excavation areas were opened within the site (Fig. 2):

- Area 1 (c. 5m5m):
- Area 2 (c. 8.8mx5.7m):

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- 4.2. The excavation areas were located to investigate features recorded by the previous archaeological watching brief (see *Archaeological background*, above).
- 4.3. The excavation areas were set out on OS National Grid co-ordinates using Leica GPS. Overburden was stripped from the excavation areas by a mechanical excavator fitted with a toothless grading bucket. All machining was conducted under archaeological supervision to the top of the first archaeological horizon, which was the level at which the cemetery horizon was first encountered, or to the top of the alluvial substrate.
- 4.4. All efforts were made to ensure archaeological features/deposits were investigated, planned and recorded in accordance with *CA Technical Manual 1: Fieldwork Recording Manual*; however due to heavy suspected creosote contamination this was not possible in all cases.
- 4.5. Levels of contamination varied, but all encountered skeletal remains were affected to some degree. Due to the contamination (which emitted high levels of hydrocarbons) it was decided on grounds of health and safety that the standard archaeological approach to cleaning and recording the remains in situ would not be possible in all cases. In such instances remains were removed by machine under careful archaeological supervision and given sufficient time for disturbed hydrocarbons to dissipate prior to remains recovery in a well-ventilated area.
- 4.6. Deposits were assessed for their palaeoenvironmental potential in accordance with *CA Technical Manual 2: The Taking and Processing of Environmental and Other Samples from Archaeological Sites*.
- 4.7. Artefacts were processed in accordance with *CA Technical Manual 3: Treatment of Finds Immediately after Excavation*.
- 4.8. CA will make arrangements with Bristol's Museums, Galleries and Archives for the deposition of the project archive and, subject to agreement with the legal landowner(s), the artefact collection. A digital archive will also be prepared and deposited with the Archaeology Data Service (ADS). The archives (museum and digital) will be prepared and deposited in accordance with Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives (CIfA 2014; updated October 2020).

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- 4.9. A summary of information from this project, as set out in Appendix D, will be entered onto the OASIS online database of archaeological projects in Britain.

5. RESULTS

- 5.1. This section provides an overview of the excavation results. Detailed summaries of the recorded contexts are given in Appendix A. Details of the artefactual material recovered from the site are given in Section 6 and Appendix B. A specialist report on the burials has been prepared in Section 7. Details of the relative heights of the principal deposits and features expressed as metres Above Ordnance Datum (m AOD) are given in Appendix C.
- 5.2. The alluvial substrate, consisting of a light brownish-grey silty-clay, was encountered in both trenches at a depth of c. 5.83m AOD. Archaeological features were only identified in Trench 1. The stratigraphic sequence identified in Trench 2 consisted of 2.1m of made-ground deposits and modern surfacing overlying the alluvial substrate.

Trench 1 (Figs. 2-8)

Phase 1: Burial ground

- 5.3. Truncating the alluvial substrate, four north-east/south-west aligned burial pits 1011, 1015, 1048 and 1051, containing a total of 21 coffined sets of human remains, were identified in Trench 1.
- 5.4. Burial pit 1011 was observed in the south-eastern corner of the excavation area. It measured 1.9m in length, 1.15m in width and 0.6m in depth, containing fill 1009 and four sets of coffined human remains, three adults and one adolescent, coated with lime in a double stack (Fig. 5).
- 5.5. Burial pit 1015 was recorded immediately to the north of burial pit 1011. It measured 1.85m in length, 1.2m in width and 0.7m in depth, containing fill 1013 and four sets of coffined human remains, three adults and one child, coated with lime in a double stack (Fig. 6).
- 5.6. Burial pit 1048 was identified in the south-western corner of the excavation. It measured 2m in length, 1.8m in width and 1.1m in depth, containing fill 1047 and eight sets of coffined human remains, six adults, one adolescent and two children, coated with lime in a triple stack (Fig. 7).

5.7. Burial pit 1051 was observed immediately to the north of burial pit 1048, and measured 1.95m in length, 1.2m in width and 0.7m in depth. It contained fill 1020 and five sets of confined human remains, one adult and four children, coated with lime in a triple stack (Fig. 8).

5.8. In all instances the burial pits were sealed by silty-clay cemetery soil horizon 1007.

Phase 2: Cattle market and Post office depot

5.9. Burial horizon 1007 was truncated in the north-western part of the trench by construction cut 1006, for north/south aligned stone wall 1005. Wall 1005 measured 1.65m in length, 0.3m in width and 0.2m in height, surviving to two courses and consisting of undressed blue-grey limestone blocks. The wall was butted by construction backfill 1004, which was sealed by demolition deposit 1003, measuring at least 1.65m in length, 1.1m in width and 0.2m in thickness.

5.10. Demolition deposit 1003 was sealed by made ground 1002, which was in turn covered across the full extent of the trench by cobbled surface 1001, measuring 0.35m in thickness. Cobbled surface 1001 was subsequently sealed by modern concrete levelling 1000.

6. THE FINDS

6.1. All finds recovered relate to the Cholera Burial Ground of 1832. Coffins and coffin furniture were observed with only a small representative sample retained. Within the coffins pieces of clothing associated with the remains were recovered, along with a single clay pipe. Recording of the artefacts was limited due to the presence of heavy residual contamination.

Coffins (by Sharon Clough; Fig. 10)

6.2. The excellent level of preservation at the site meant that the coffins all survived. The ground conditions though precluded extensive examination and recording and only a sample of wood was recovered for analysis. General photographs of the coffins and where appropriate the method of construction, were taken. It was noted where any coffin fittings were observed and their type.

6.3. Each individual had been placed in their own coffin and all the coffins survived within the cholera pits, this totalled 21 coffins (Figure 3). The water-logged ground conditions had preserved the wood to such an extent that the coffins had retained

structural integrity. On a few occasions when the lid was removed the coffin it was found to be full of water and no soil had penetrated.

- 6.4. The coffins were constructed of single planks of soft wood known as 'deal' which was imported from the Baltic or North America at this time. As Bristol was a port, access to imported woods would have been straightforward.
- 6.5. The coffins were all single-break shape (hexagonal form, shaped at the shoulder area) and where the weight of the clay soil had compressed the long side of the coffin the wet wood had bowed to create a "fish-tail" look. The break (or shoulder) in the long side was created using three incised lines or kerfs running the depth of the coffin side, so only a single plank was needed. The planks were then nailed at the corners where they joined, and the lid nailed down
- 6.6. The coffins were sized according to the occupant, indicating that although there was a short time frame for burial, there was consideration for an appropriately sized container. Haste and cost though were indicated by the lack of coffin furniture. Only a single ring-grip was provided at the head and foot panels for some coffins. Contemporary coffins observed at another workhouse cemetery in Bristol had ring-grips along the sides (Clough pers comm), so the omission here is testament to the haste and need for low cost.
- 6.7. The ring grips were made of iron, plain circular loops and 55mm diameter (to the outer edges, 6mm thick) dimensions for adult (SK1057) and 39mm diameter (4mm thick) for child (SK1043) (Fig. 10).
- 6.8. The excellent preservation did provide further insight with preserved organic remains. This was preserved straw, which was seen particularly at the head and foot end, but also under the torso area. It was so well preserved as to see the individual fibers (Fig. 10). Saw dust is traditionally used inside coffins and has been observed at many post-medieval cemetery sites. Saw dust acts to cushion the body, soak up any fluids and is a by product of the coffin making. This is possibly the first instance that straw has been observed and this may be due to the unique preservation and hasty burial due to the cholera epidemic. The straw would cushion the body as the coffin was moved around, and may like sawdust, soak up some fluids. Sawdust was also observed in some coffins, so why straw was selected for some and not others remains unknown.

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- 6.9. The presence of straw indicates that it was readily available to those involved in burying the cholera victims and that sawdust was not available. It may indicate a disconnect between the coffin maker and the placing of the body in the coffin, necessitated by the contagious cholera. Perhaps the coffins were delivered to the workhouse to order, as from documentary evidence coffins were made under contract, rather than as seen elsewhere at some workhouses the coffins being made in the workshops by the inmates.
- 6.10. Undertaking as a business or trade started to take off after 1769 when stamping metal plates for coffin furniture was patented in London. There were at least two coffin furniture manufacturers in Bristol (Hoile 2019) active at this time, though more general ironmongers may also have produced items for coffins. This led to more elaborate coffins developing, with increasing amounts of decoration and symbolism. The more elaborate the coffin the wealthier the occupant, so a simple wooden box was a further indication of a person's class in society. Non-conformists though, as in all areas of their lives, opted for a simple plain coffin.
- 6.11. Cemeteries from poor areas and particularly from the north of England have also found ring grips from (now decayed) coffins. St Peter's churchyard, Blackburn, Lancashire, burials dating 1821-c1857 found a third of the burials excavated had ring grips (or 'rope rings' as they describe them) (Ginnever 2017). They were also found at Swinton Unitarian Burial Ground, Greater Manchester (Gibson forthcoming), Redearth, Lancashire (Gibson and Griffiths 2011) and St Augustine-the-Less, Bristol (Boore 1998). The confluence in Lancashire of this type may suggest a regional preference, though with the use at a workhouse in Bristol an alternative explanation may be that the Lancashire ones are pauper burials, those buried and paid for by the Parish, or the cheapest option available from the local supplier.
- 6.12. The coffins used to contain the dead from cholera from the workhouse of St Peter in Bristol are the most basic type, single planks of pine held together by nails with the addition of simple plain iron ring grips. They contained straw and no evidence for a pitch or tar lining. This type of coffin is the cheapest and most basic available at the time and has been noted in other cemeteries where the poor are buried. They reflect the status of the individuals from the workhouse and the haste needed to bury the victims of the cholera epidemic within 24 hours.

Clothing and Fabric (by Sharon Clough; Fig. 9)

- 6.13. The waterlogged nature of the burial ground provided anaerobic conditions within the coffins which enabled organic materials to survive. This meant that in several instances fabric from clothing was present, which rarely survives the normal burial environment. This is particularly exceptional given that the coffins were single plank construction, as it is more commonly found that fabric survives only within the more elaborate double or triple shell coffins recovered from crypts and vaults (upper class individuals). Though the items were not complete, it does give an insight into the clothing of the poorest members of Bristol society in 1832. Due to the contamination however, the fabric was not closely examined for weave or other analysis
- 6.14. Fabric from clothing was identified on the following individuals:
- SK1016 – older adult male
 - SK1033 - mature adult male
 - SK1043 – child 9-11y
 - SK1057 – older adult female
- 6.15. SK1016 the fabric was in small strips and one larger piece. There was also a possible string located at the level of 12th rib (waist).
- 6.16. SK1033 had three buckles with leather straps found in the waist/pelvis area. These were small buckles, so probably from braces, the kind which were used to hold up trousers. There was also a prosser button (white ceramic, it is not clear where it came from but was found near the braces (Fig. 9).
- 6.17. SK1043 had the largest quantity of surviving fabric, all from the chest and right arm area. The largest pieces had buttonholes, two panels and with a finished edge and so may be from a waist coat or front buttoning shirt. The fabric was quite dense and so probably a flannel-type. The right arm was still draped in fabric on the humerus , though the shape and edges were not so clear (Fig. 9).
- 6.18. SK1057 a long piece of fabric fine and strong was found in association with SK1057. It had sewn edges, but the shape did not lend to an interpretation as to what it may have been a part of. A leather strap end was also found similar in size to the buckles of SK1033 but thicker leather and no metal fittings (Fig. 9).
- 6.19. Uniforms were provided by the workhouse as described in documents from the beginning of the workhouse in 1698 and 1699:

“and that they carryed away with them their Working Clothes and Blue Peticoats with one spare Shift and two Spare Aprons ..” -Oct 20 1698

“There being a Boy presented to this Court in a habit Proposed for the Boys to ware that are to be Taken into this house being a blue Coat with Tin Buttons a blue westcoat with Clasps white Breeches blue stockens and blue Capps “ June 21 1699

*“Clothing.....its coarseness distinguishes the wearers as surely as a badge. The shoes were made chiefly by out-of-work shoemakers who applied for relief, and the grey clothing was a product of the Hospital”
(Butcher 1932)*

- 6.20. Later the preference for blue clothes has changed to grey and the uniforms are distinguished by an illustrated button:

“The present dress is grey, with tin stamp buttons, bearing the impression of a beehive. The clothing used, and given to the poor, is made at St. Peter’s Hospital: the raw articles only being purchased. Great part of the shoes is made by journeymen, in want of employ, and applying to the Hospital for relief.....Linen drapery, woollen drapery, hosiery, hats, shoes and leather” (Johnson 1826)

- 6.21. Only one button was recovered and as preservation was excellent metal objects would have been expected to survive (e.g., the buckles on SK1033). There was also a notable absence of shoes, the leather of which would have preserved since the leather on SK1033’s strap ends were present.

- 6.22. The evidence suggests that the individuals were dressed, probably in everyday clothes, but not necessarily the uniform described in 1826 (Johnson). The shoes, being a valuable and reusable item, may have been removed prior to burial. It is possible, that since the uniform belonged to the workhouse (you could be accused of theft if you left wearing it), it was removed prior to burial and they were buried in their own clothes they had arrived at the workhouse in. Though, due to the fear of contagion from the cholera victims, how much the bodies were handled prior to burial is unknown. A reference from a newspaper (Oxford University and City Herald Saturday 18th August 1832) to stopping up the ears and noses with pitched cloth and being wrapped in the same, suggests some postmortem arranging. It maybe that only the outer workhouse uniform (jacket with the buttons for instance) was removed, leaving the body clothed in (for the men) shirt and trousers.

Clay Tobacco Pipe (by Luke Brannlund)

- 6.23. Two sherds of clay tobacco pipe, representing one nearly complete pipe, were recovered from coffin fill 1047. This was dating using the standard Atkinson and Oswald typology to 1810 – 40 (Type 24: Oswald 1975). As these were often considered disposable items, it is most likely that this example dates from the 1830's. The pipe is complete with the exception of the mouthpiece, suspected to have broken post-deposition, and has clearly been smoked. No makers mark was observed.

7. HUMAN REMAINS REPORT

Historic Research (by Sharon Clough)

- 7.1. The arrival of the cholera epidemic to Bristol in 1832 is well documented and discussed in numerous publications (e.g. Hardiman 2005). What is not so well detailed is the creation of the burial ground specifically to inter those who died from Cholera at the St Peter's hospital and the exact numbers of those who died and were buried there. Research using the newspaper reports from the time has pieced together a timeline and possible number of deaths and burials. A wider investigation into burial of paupers, types of coffins and typical funerary activities was also undertaken to place the burials in their context.
- 7.2. St Peter's hospital was opened in 1698 under the old poor law and it was to accommodate the poor and include 'lunatics' and 'idiots'. The building was adjacent to St Peter's Church from which it took its name, though it was also known locally as "The Mint", as the building had once been the location for provincial coin production. Although it included some characteristics of what we would consider a hospital, provision for the elderly and sick paupers and those with mental health disorders, it was a workhouse under the control of the Corporation of the Poor. Later in 1823 it was also designated a county lunatic asylum, as it had specific wards to accommodate 'lunatics'.
- 7.3. The Tudor building was not designed to accommodate large numbers of inmates which averaged at 420 in 1820. The ramshackle building was badly laid out, badly ventilated and insanitary. The building lay adjacent to the river, which after the conversion to the floating harbour in 1809 transformed it into a stagnant pool of water. As such the workhouse was subject to recurrent epidemic fevers. The number of inmates rose steadily so by 1826 there were 532 and in 1832 there were 600. There were increasing concerns about the poor house and accommodation for the lunatics

before 1832, but all attempts to alleviate the situation were resisted by the ratepayers to the expenditure. So, by the time the cholera epidemic arrived in Bristol the problems at the workhouse from overcrowding and insanitary conditions were well known.

- 7.4. The Cholera epidemic arrived in Bristol July 11th 1832 and reached the workhouse by sometime before July 24th when the first death was recorded. The rapid arrival and subsequent speed of deaths increased the horror of the epidemic. Of the 105 cases reported between 11 July and 10 August, 71 were in St. Peter's Hospital, here there was a total of 168 cases of cholera which subsided by August 20th (last recorded death).
- 7.5. The overcrowding in the workhouse contributed to the high rate, for example it was reported that the girls' ward had 10 beds and 58 inmates, eight of them in one bed; the boys' ward had between 70 and 80 boys in 18 beds (Bath Chronicle and Weekly Gazette Thursday 23rd August 1832).
- 7.6. It was not just the sheer number of deaths which had to be dealt with and burial space found that caused the new burial ground to be opened. Over crowding in the St Peter's church yard and other churchyards in the immediate area, was already a problem. In addition, there was in the minds of the people a link between cholera and the surgeon's need to obtain fresh corpses for dissection. The government's introduction of the Anatomy Act in 1832 did little to help matters, it made it legal for doctors to dissect the bodies of the unclaimed dead, which was essentially those from the workhouse. Also, there was amongst the general populace a fear of being buried alive. One of the more unpleasant characteristics of cholera was that in its 'cold stage' it could render the victims comatose and surprisingly deathlike, but it was still possible for them to recover.
- 7.7. Feelings ran high so that there was reported Monday and Tuesday evenings (August 6th and 7th 1832), "*large bodies of persons congregated together in Peter's street, Castle street and its neighbourhood to witness the removal of the victims to cholera from the hospital.... Tuesday in consequence of some evil minded persons circulating reports that the medical men were not acting fairly by the cholera patients that they were causing their deaths by giving them laudanum and it was likely that many were never buried, but became subjects for dissection. The populace absolutely followed the corpses to St Philip's churchyard and insisted upon having the coffins opened*

which was complied with in order to prevent a riot and disorder. The next day, Wednesday, in order to avoid the same the guardians of the poor had the deceased removed earlier in the day as there was a large assemblage of people in front of the hospital' (Hereford Times Saturday 11 August 1832).

7.8. The lack of burial space and the mob in the streets led to the need for a new burial ground. A piece of land was acquired at the new cattle market adjacent to the Scavengers' yard, Temple Meads (location and area marked on 1836 conveyance plan). More importantly it was immediately accessible from the river. Bodies could be loaded on to a boat straight from the workhouse rowed down river to avoid the mobs in the streets, then unloaded again straight into the burial ground. The newspaper reports that "Thursday morning the inclosure of a piece of ground was commenced adjoining the new cattle market, as a place for burial for the persons who die of cholera at the Mint" (Bristol Times and Mirror Saturday 11th August)

7.9. This would be the 9th August 1832 by which time according to the news reports there had already been 51 deaths. It is not possible to know whether burial started in the new ground before the 9th of August, but if we assume not, then there would be 43 burials in the new ground. Numbers reported are sometimes difficult to understand, as it is reported there were 71 deaths at the workhouse in total, but adding up the numbers from reports, there are 94 (Table 1). It is likely that those prior to August 9th (or 8th) were interred in St Philips or St James's graveyards, so the final number in the new cholera burial ground is less than the total number of deaths. The paper also reports that two thirds of the victims were under 20 years of age or over 60 years (Bristol Times and Mirror 11th August 1832).

Table 1: reported deaths in date order

Date	Number of deaths reported
July 24 th – August 4 th	10
August 4 th	4
August 5 th	15
August 6 th	7
August 7 th	6 (day of the mob)

August 8 th	9
August 9 th	12 (new ground)
August 10 th	8
August 11 th -17 th	20
August 18 th -20 th	3
Total 208 cases and 94 deaths.	

- 7.10. The reduction of cases at St Peter's was attributed to a reduction in the number of those within its walls to 300. The cholera epidemic forced the reform which had been so badly needed for many years. A new site at the former French Prison in Stapleton was rented from the Admiralty and paupers were sent there to relieve the overcrowding. This eventually became a permanent move when the site was bought in 1837 and it began the Stapleton workhouse (Vinter 1960). St Peter's continued as a lunatic asylum after this date until a new purpose-built asylum was erected adjoining the Stapleton workhouse in 1861. St Peters continued to be the administrative location for the Corporation of the Poor.
- 7.11. Given the size of the parcel of land which was 'inclosed', there was plenty of room to accommodate much higher numbers of deaths than those reported. It is also likely that from a practical point, interments would start closest to the river where the coffins were unloaded. From the numbers dying each day, it may be that the pits identified in the excavation relate to a days' worth of deaths.
- 7.12. The speed of burial was dictated by an Order in Council (August 4th), which specified burial within 24 hours of death. Coffins were usually made from 'Deals' which are planks of soft wood, usually pine wood. There is also a description of the corpses being buried wrapped in cloth which was 'pitched' (coal tar) and the ears and nostrils stopped with the same substance (to prevent the spread of disease, which was thought to be from the bad air) (Bristol Mercury Saturday 11th August 1832).
- 7.13. The newspaper reports give a sense of the speed of the disease and panic and horror of the people of Bristol at the result of the epidemic. The public disturbance forced the creation of a separate burial ground, the location of which had been confirmed through the excavations by Cotswold Archaeology.

Skeletal Pathology (by Sharon Clough)

- 7.14. The confined skeletal remains of 21 individuals were recovered from four pits. The documentary evidence suggests that these were all victims of the 1832 cholera epidemic and died sometime in August 1832, with each pit probably a days' worth of deaths. Although the total number originally buried at the site is not clear, the 21 recovered may be a half or third of the total. These individuals have provided a snapshot in time of those who had been residing at the St Peter's workhouse and fell victim to the Cholera epidemic.

Methodology

- 7.15. The skeletal remains had been lain in water or clay within preserved wooden coffins and contaminated with what is suspected to be creosote. The level of contamination varied, but all the skeletal remains were affected. Due to the contamination (which emitted high levels of hydrocarbons and left a shiny oily film on the remains) it was decided on grounds of health and safety that the standard archaeological approach to cleaning and recording the remains would not be possible. The adhering soil when agitated (as it would be from washing) continued to emit noxious fumes, so could not be removed in an enclosed space, or for long periods of time. As the bones were in excellent condition (discussed below) and in some cases had no soil adhering, it was decided that they were not to be washed. Although not ideal, as this approach did hinder on occasion view of certain areas, it would reduce exposure to the contamination by staff. As such, handling of the remains was to be only in well ventilated areas, short periods of time and wearing gloves. S
- 7.16. Osteological recording and analysis were undertaken along standard lines (Mays et al. 2018, Mitchell and Brickley 2018), as far as possible, with the safety of staff first consideration. Detailed methods followed are at the end of the report. S
- 7.17. Some of the skeletal remains from Pit 1048 had become mixed, due to the necessary removal by machine bucket. Skeletal elements which were grouped were recorded and then re-fitted with individuals where those elements were absent. It was possible to identify most of the major bones to individuals.

Age categories are as follows –

Infant	1 month – 1 year
Young Child	1 year – 2 years

Middle Child	3 years – 5 years
Older child	6-12 years
Adolescent	13-17 years
Young Adult	18-25 years
Prime Adult	25-35 years
Mature Adult	35-45 years
Older Adult	45+ years

Background

- 7.18. Unlike the majority of archaeological skeletal assemblages, we know exactly what all those buried at this site died of – Cholera. Cholera is an infectious disease caused by *Vibrio cholerae* a bacterium. The bacteria can be spread through contaminated foodstuffs but survives longest in water. Drinking water contaminated with sewage from cholera victims is how it spread rapidly in 1830s Bristol, where poor sanitation and crowded living were ideal breeding grounds for the bacterium. The link between contaminated water and cholera was not discovered until much later in the 1850s and it was thought the air or “miasmas” spread the disease.
- 7.19. The cholera bacteria travels to the intestine where a toxin it produces activates extreme watery diarrhoea (and vomiting) with rapid loss of fluid and salts. Severe dehydration if left untreated may cause shock, leading to kidney failure and coma (and eventual heart failure). It can be fatal in a matter of hours or days. Cholera was nick-named the “blue death” as a person’s skin may turn bluish-grey from the extreme loss of fluids. About 40-60% of those infected in the 19th century died.

Results

- 7.20. There were four burial pits, two contained four individuals, one five and the largest was eight, totalling 21 individuals. The human remains were all in excellent condition, with almost no fragmentation of bones since they had been protected by the still intact coffins. The extensive waterlogging of the graves had reduced decomposition, so that some bones or areas of a bone appeared ‘fresh’ or green’ and had not become dry and brittle as would be usual for archaeological material. There was evidence of preserved soft tissue in one instance, at the tendon insertion points on the lower legs. Preserved pubic hair was identified in the sacral area and toenails adjacent to the feet. The bones were nearly all stained a dark brown colour, this may be from the

coffin or creosote contamination, but has been observed where bones lie in damp or waterlogged environments so is likely to be related to this.

7.21. It was observed during excavation in the graves which were entirely water-filled that the smaller bones floated on the top of the water, confirming the often noted observation during grave excavation the re-positioning of smaller bones such as hand phalanges out of their anatomical position.

7.22. The pits are likely to be a day's deaths at the peak of the cholera epidemic in August 1832 and all the deceased were from the St Peter's workhouse in Bristol. As such, each pit as a single event will be discussed separately, then an overview of the assemblage as a group. The entire burial ground was not excavated, further pits lie undisturbed, so the recovered remains are a representative sample.

Pit 1011 (Figs. 5 & 11)

7.23. This pit contained four individuals in two rows, two deep. The bottom row, or first to be interred were both adult males, then the coffins laid on top were an adult male and an older child. Careful ordering of larger coffins (which are usually male) at the base of the pit and then decreasing size placed on top is observed across the pits. Demonstrating a thought to the stacking by the grave digger (Fig. 5).

7.24. SK1008 was a male, probably in early to mid-30s. Pipe notch between the upper and lower canines, teeth were stained brown (from tobacco use or burial environment?). Sternal aperture and calcaneal double facet are non-metric traits and would have been unknown in life. 169.5cm estimated stature (left femur).

7.25. SK1018 was a child aged 12-13 years, no skeletal pathology. The long bone lengths suggest an age of 7.5-9.5 years (data collected from 20th century children), except the clavicle which was 11-12 years. The dentition though had all permanent teeth erupted except the third molar, which indicates 12-13 years. None of the long bones or pelvis were fused (Fig. 5).

7.26. SK1025 was a young adult male, probably about 21 years. The molar teeth have a cusp developmental disorder, which looks like mulberry molars (which are indicative of congenital syphilis) or are an extreme enamel hypoplasia caused by prolonged periods of stress in childhood. The maxilla is narrow and deep and does not correspond well with the mandible, so there is little to no occlusion. The nasal bone at the tip looks damaged, a small area with rugged bone. There is frontal bossing,

even though it is a male. The right tibia has what could be a healed fracture, or internal infection, but it is swollen mid shaft with minor striations on the lateral side. All these skeletal indicators suggest that this young male had a congenital syndrome or hormonal disorder. Congenital syphilis is another potential cause of frontal bossing as is rickets. A long-term health condition, which prevented employment, would explain the 21-year-old in a workhouse, when most able-bodied young males would find some means of employment or access to money and food to avoid the stigma of the workhouse. 160.7cm estimated stature from the left femur (Figs. 5 & 11).

7.27. SK1027 was a mature adult male (35-45 years). Two thoracic vertebrae with Schmorl's nodes (indentations on the spinal body from excessive load compressing the disc). Frontal bone small subcircular indentation, possible healed trauma, although could also be postmortem. The teeth were covered in calculus, which may have been exacerbated by the underbite and mild periodontitis as a result of the calculus. There were three lines of enamel hypoplasia on the incisors, indicating multiple periods of stress in childhood. Pipe notch right canine to first premolar. Calcaneal double facet and retained metopic suture, both non-metric traits which would be unknown to the individual in life. 167.6cm estimated stature from the left femur.

Pit 1015 (Figs. 6 & 11)

7.28. Pit 1015 contained two rows, two deep a total of four individuals. As with the first pit the adults were on the lower row (interred first), a male and female and then a child and another female were placed on top.

7.29. SK1012 prime/mature adult female, probably mid-30s, but the main areas for age estimation were obscured, so this is a best estimate. The dentition had four abscess or granuloma. There was a retained metopic suture, a non-metric trait shared with SK1027, SK1064, Sk1018 and SK1035, it has been observed to run in families. 157cm estimated stature. Left hand had fused mid and distal phalanges which were angled slightly inferior. Mandible left condyle was malformed, possible joint disease since there was much antemortem tooth loss on that side, which may have altered the way the jaw moved during chewing. In the spine two thoracic vertebrae had Schmorl's nodes (Fig. 6 & 11).

7.30. SK1016 older adult male, over 45 years and probably much older than that from the indications on the rib ends. Pipe notch between the left side canine and first premolar.

164cm stature. Left proximal femur osteophytic extension of bone around the femoral head, which is not mirrored on the right side. Right side femur at the greater trochanter there is irregular and extra bone growth. Further osteophytes are present on the thoracic and lumbar vertebrae. Prominent muscle insertions all over the skeleton which could be age related, or indicating a physically active life.

7.31. SK1031 child 1.5-2 years old. Estimated age by long bone length, as it was not possible to see the roots of the teeth, except the unerupted first molar crown, the development of which suggests 1-1.75 years. Teeth unworn and no caries on those present. Sub clavian defect observed on mid clavicles, which on an adult is an enthesophyte from excess strain in the upper limb.

7.32. SK1032 mature adult female, 40-50 years. The teeth were in poor health with three crowns entirely lost to caries (root only) and one large caries. 154cm estimated stature. No skeletal pathology was observed.

Pit 1048 (Figs. 7, 11 & 12)

7.33. There were eight individuals laid in three rows and up to three deep. Due to the level of soil contamination and the depth of the graves, some of these were removed using a machine bucket. This led to some mixing of elements between graves, so completeness was reduced.

7.34. SK1033 mature adult male (35-45 years). Cranial nonmetric of a large ossicle left and right side of lambdoid suture and one at lambda. 163cm estimated stature. Left elbow malformation of the distal humerus (trochlea), radial head and ulna process. In addition, the left femoral head is malformed with associated acetabulum degeneration and widening of the joint. These poorly formed joints maybe congenital, but also differential diagnoses are TB, polio, osteomyelitis (after smallpox), necrosis after fracture and syphilis. Hip changes are not developmental dysplasia as the acetabulum is deep and wide and fully formed, so the femoral head has atrophied without the rest of the joint. Avascular necrosis or osteonecrosis of the hip caused by excessive consumption of alcohol is another option (Fig. 11).

7.35. SK1035 adolescent female, 12-14 years, ischium pubis fusing left side (onset puberty c.13-15 years). Long bone age 11-11.5 years (clavicle 15-16 years), dental age 12+, roots not observable for more accurate development. Retained metopic suture nonmetric trait. Right shoulder probable development disorder characterised by proximal humerus misshapen and reduced length of diaphysis and scapula glenoid

fossa similarly changed. The coracoid has prematurely fused on (left side not fused and age too young for that). Could be result of birth trauma, where the shoulder becomes stuck during delivery, known as shoulder dystocia, resulting in brachial plexus injury (BPI). Limb length discrepancy is a known effect of BPI as the muscles atrophy and there is impaired bone growth. Further complications from the birth injury may also have been present. The reduced length of the arm on its own was an obvious physical deformity and may have prevented employment, something which would have been expected of a girl of this age in this time period (Fig. 11).

- 7.36. SK1037/52 older adult female. 158cm estimated stature. No pathology.
- 7.37. SK1039/61/56 older adult male, 172cm estimated stature. Lower spine thoracic vertebra has extensive osteophytic growth extending superior/inferior. Other vertebra adjacent have osteophytic growth but not as extensive, so could indicate localised trauma, or excessive strain.
- 7.38. SK1041 older adult male. 152cm estimated stature (note residual rickets reducing the length of femur). Cervical vertebrae osteophytic and porosity superior and inferior (bodies 5-7), which indicates osteoarthritis of the neck. Thoracic vertebrae 9-12 osteophytes increasing in size, the lumbar vertebrae 1-2 osteophytes are smaller and thoracic vertebra 11 was the most affected. Notably there were no Schmorl's nodes. Hip acetabulum degeneration with porosity on the superior aspect, slight osteophytic lip on right side, however no femoral head changes. Residual rickets identified from the left and right femur anterior posterior bowing on the proximal third of the shaft, the tibia less affected slight medio-lateral bowing. Ribs had a sharp angle bend at the posterior which may also be related to the effect of rickets (Fig. 12).
- 7.39. SK1043 child, long bone length age 7.5-8 years, clavicle 10-11 years. Dental age 8-12 years, so averaged at 7-11 years. No fusion of long bones or pelvis. Possibly short for dental age, as with other individuals. Severe enamel hypoplasia affecting the cusps of first permanent molar teeth and incisors. This indicates a prolonged period of stress whilst the teeth were developing or could be indicative of congenital syphilis (e.g. mulberry molars). There were no other skeletal indicators to support a diagnosis of syphilis and no other indicators of metabolic stress.
- 7.40. SK1045/53/54 child long bone length 4.5-5 years (clavicle 6-7 years), dental age 5-6 years, so slightly short for dental age.

7.41. SK1063/55 older adult male. 168cm estimated stature. He had a prominently extruding canine on the maxilla left side, which would have been quite distinctive facial feature. Pipe notch between right second incisor and canine (Fig. 12).

Pit 1051 (Fig. 8)

7.42. There were two rows, one two deep and one three deep, containing five individuals. This pit was predominantly children, stacked in increasing size (or age).

7.43. SK1021 child, long bone length 8-8.5 years, dentition 9-10 years, as with other children probably short for dental age, age averaged to 8-10 years. Cribra orbitalia in both orbits, fine porosity, indicating metabolic stress.

7.44. SK1023 Child aged 1.5-4 years, long bone length suggests 1.5-2 years, dental permanent first molar developing, but not able to see root development so 2-3 years or 3-4 years. Frontal bossing, forehead looks more prominent than usual. This can be caused by rickets, syphilis and rare disorders. No other indicators on skeleton for disease, so might just be normal variation.

7.45. SK1029 Child 8-10 years from dentition and six years from long bone lengths. No pathological lesions observed.

7.46. SK1057 adult female, over 45 years, but more likely to be c.60 years. Left hip may have been fused at the post-auricular area, which was broken postmortem after it was recovered from coffin. Only the fifth lumbar vertebra had osteophytes and the cervical bodies were observed with porosity.

7.47. SK1064 Child aged 8-10 years, ischium-pubis were partially fused (7-11 years), long bone age 7.5-8 years, clavicle 10-11 years, dentition 9-10 years. Left ulna shaft is very swollen at the width, with a sinus (drainage hole for infection) on the lower third. Externally there is no periostitis, but it may have osteomyelitis internally (bone infection), which has possibly healed, or become chronic. The sinus drainage hole was sharp edged and no sign of periostitis or new bone growth. All other bones were unaffected, no evidence for other infection anywhere, so this is a localised infection. Osteomyelitis can result from many different infections (e.g. TB, smallpox, chickenpox, typhoid fever, congenital syphilis) and from infection after an open fracture, given the lack of other evidence, it is impossible to suggest the cause in this instance (Fig. 11).

Discussion of the skeletal evidence from the cholera victims

- 7.48. The newspaper reports that “more than two-thirds were under twenty and above sixty years of age” (Bristol Mercury Saturday 11th August 1832) those who died from the cholera in the workhouse. These statistics appear to be borne out by the ages of those from the pits. Sixteen out of 21 individuals (76%) are in the over 45 years category or under 20 years (and some of these are likely to be over 60 years, but the limitations of the aging methods mean we cannot accurately determine those who are 45 years from those who are 60 years).
- 7.49. What is interesting is the lack of children under one year and that most of them are over eight years. Cholera is linked to contaminated water and we can therefore assume that the children under one year are protected by still being breastfed. Children are vulnerable to electrolyte imbalance from dehydration due to their small size and fast metabolism and would therefore be more likely to die from cholera.
- 7.50. A similar demographic was identified from the historical records for a cholera cemetery (Beckett Street) in Leeds, West Yorkshire. It was observed to discriminate by affecting the very young and the very old (Margerison 1997).
- 7.51. The rapid nature of cholera means there is no time for skeletal changes and so the pathologies observed are a snapshot of the range of long-term ailments of those who had become so impoverished that the workhouse was their only option.
- 7.52. Stature in the post-medieval period does not appear to be correlated with socio-economic status (Roberts and Cox 2000). The average for males was 168-174cm and females 156-164cm (ibid). Of the seven males from the pits they ranged from 152-172cm, though the 152cm belonged to an individual who had suspected residual rickets, the femora were bowed, resulting in the lower stature. The second lowest male stature was 160cm, however this individual may have had a congenital condition, which may have had some bearing on the final stature and the third lowest stature at 163cm the right femur was used as the left side of this individual is also pathological, which again may have a bearing on the final stature of the individual. So, the range of four male individuals without any obvious indications of pathologies which may affect final stature would be 164-172cm, which is shorter than the average for the period. The four female estimated statures ranged from 158-166cm, which is taller than the average for the period. As both these ranges are from only four individuals, there are too few to make any real inferences.

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- 7.53. All the children appear to be short for their dental age (when using the averages given by Maresh 1970), this has been commonly observed in post-medieval children (Humphrey 2017) and indicates inadequate nutrition and health to attain full genetic height potential. However, it must always be considered that the age/height correlation is based on middle class children from Colorado in the 1940s, so may not be applicable to Bristol in 1830s.
- 7.54. There was little evidence of metabolic disease, as would be expected in a poor deprived population. Cribra Orbitalia is regarded as evidence of general metabolic distress, but was only present on one individual. No scurvy was evident, though the unwashed nature of the bone may have prevented complete examination of the more subtle changes which identify this deficiency. Enamel hypoplasia, which is taken to indicate periods of metabolic stress in childhood is discussed below.
- 7.55. There was one adult with residual rickets, Vitamin D deficiency, which caused bowing of the leg bones in childhood. The lack of vitamin D must have occurred at an age where the individual had learnt to walk (average 12 months to 18 months). Vitamin D is present in dairy products, but sunlight on skin is the easiest way to get this important vitamin. Cultural practices of fully covering the body from an early age, staying indoors and combined with a poor diet devoid of milk (for example) would create conditions where rickets could easily be caused.
- 7.56. Joint disease was also surprisingly low in the older adults and there was a general lack of Schmorl's nodes, which may indicate excessive loading on the spine from an early age. This suggests that the activities of the paupers (or activities before they entered the workhouse) were not excessively strenuous to cause these skeletal changes.
- 7.57. Trauma was low, only one possible healed fracture to the right tibia and no nasal or rib fractures which are commonly observed. The majority of pathological lesions were congenital or long-term infection.
- 7.58. Dental health was poor, in general the older adult had lost the molar teeth and the younger adults had caries and abscesses. Dental calculus was present on most of the dentitions, usually as a line or flecks. Only one child (SK1021) had caries, which is surprising, possibly there was a limited access to sugar which may have prevented the children developing caries on the deciduous dentition. The low socio-economic

status of the individuals may have reduced the access to sugar which was readily available in this period and has been long noted as the main cause of the deterioration of dental health. Sugar consumption gradually increased from the 1700s onwards, so that by 1750 the average was 14.72 pounds per head per year, 19.45 pounds in 1800 and 27.69 pounds by 1850. The diet of the poor was based mainly on bread, potatoes and tea (with sugar) (Roberts and Cox 2003).

- 7.59. Enamel hypoplasia indicating growth arrest in childhood was observed on six individuals, two of which were substantial changes to the permanent molar cusps which for SK1043 extended to all the dentition including the incisors.
- 7.60. Five individuals had a retained metopic suture, which is a non-metric trait where the cranial suture in the frontal bone does not completely fuse after the first year of life. These were an adult male and female, two children and a possible female adolescent. This non-metric trait is considered to possibly run in families (a dominant trait), it may have a genetic component (Torgersen 1951). With five out of 21 individuals with the trait (23%) it is quite likely that some of these people were related.
- 7.61. Pipe facets were observed on four adult males (SK1008, SK1016, SK1027 and SK1063), these are very commonly observed in post-medieval individuals and are the result of persistent clutching of a clay pipe between the same teeth over a long period of time.
- 7.62. This small assemblage has confirmed the newspaper reports about the age groups affected by the cholera epidemic. It has also provided evidence for some of the long-term health conditions suffered by those in the workhouse. There is some evidence for metabolic stress during childhood, though possibly not to the extent it had been expected. The small assemblage though makes it difficult to make any statistical inferences. Few workhouse assemblages have been analysed archaeologically, the Kilkenny workhouse in Ireland recovered burials from the potato famine period (Geber 2015) as such probably unsuitable for comparison. The St Bride's Lower churchyard cemetery, London is thought to contain individuals from Bridewell workhouse and Fleet Prison (Miles and Conheaney 2005) and the majority are therefore from those of low socioeconomic status and dated to between 1770-1849. Here child mortality was high a third did not make it to adulthood and 85% of all children died before the age of five years. There were more older adults and the quantity increased with age as expected. 65.6% of individuals had at least one

pathological lesion and metabolic disorders were the most commonly observed. Trauma was also common, rib fractures and nasal. This is in contrast to the cholera group who had little trauma. Infectious diseases were observed at St Brides' whereas at Bristol there was no direct evidence for TB or syphilis for example.

- 7.63. Other excavated sites of known cholera burials appear to be confined to Ireland and Europe and comprise the more general population, rather than a known sub-group such as the workhouse. So, it has not been possible to compare the present assemblage with one which is similar.

Methodologies

Biological Age Assessment

- 7.64. Aging is a highly variable process whose causative factors and biological mechanics are not fully understood (Cox 2000). In addition, 'biological age' does not always equate to 'chronological age' or 'social age' (Lewis 2007), of which adulthood is primarily a culturally defined concept (Cox 2000; Lewis 2007). A multi-method approach is recommended (Table 1) to provide a range of estimates, then each indicator was weighted on reliability. This is particularly the case for the non-adults, where it is noted a discrepancy between the methods for dentition and long bone. In this assemblage the excellent preservation of the remains potentially enabled observation of several areas, however as they were contaminated and unwashed this meant that some areas may have been obscured. Dental attrition is not recommended for post-medieval assemblages and often the molars in adults are absent.

Table 1: Macroscopic techniques used

Pubic symphysis	Brooks and Suchey 1990
Auricular surface	Lovejoy <i>et al.</i> 1985; Buckberry and Chamberlain 2002 (used for older adults)
Dental attrition	Miles 1962
Cranial suture closure	Meindl and Lovejoy 1985
Sternal Rib ends	Işcan and Loth 1984; 1985
Epiphyseal fusion	McKern and Stewart 1957; Webb <i>et al.</i> 1985
Dental eruption	Moorees <i>et al.</i> 1963; AlQahtani <i>et al.</i> 2010

Sex Estimation

- 7.65. The biological sex of all adult skeletons was based on examination of standard characteristics of the skull and pelvis (Ferembach et al. 1980; Schwartz 1995), with greater emphasis on features of the latter as they are known to be more reliable (Cox and Mays 2000). Measurements of the femoral and humeral heads were employed as secondary indicators (Giles 1970). Adult skeletons were recorded as male, female, probable male (male?), probable female (female?), or indeterminate, depending on the degree of sexual dimorphism of features. No attempt was made to sex non-adults, defined as individuals below 20 years of age for whom there are no accepted methods (Cox 2000), with the exception of adolescent skeletons whose innominate bones had fused or were fusing and where preservation was adequate.

Skeletal Condition and Completeness

- 7.66. The completeness of each skeleton was classified as a percentage of the whole and divided into four groups: 0-25%, 25-50%, 50-75% and 75+%. The condition of the bone surface of each skeleton was recorded in detail with reference to different anatomical areas (skull, arms, hands, legs and feet) after McKinley (2004, 16) and given an overall summary score.

Metrics

- 7.67. Measurements of long bones were used to estimate stature in adults (Trotter 1970). Measurements of other long bones and skulls were taken (where appropriate) and used in the calculation of indices to explore variation in the physical attributes of the population.

Non-Metrics

- 7.68. The presence or absence of frequently recorded non-metrical cranial and post-cranial traits was scored (Berry and Berry 1967; Schwartz 1995; Hillson 1996).

Dental

- 7.69. Dentition was recorded using the Palmer notation. Caries were graded into small (<1mm), medium (2-4 mm) and large (>4 mm). Abscesses were recorded with reference to Dias and Tayles (1997). Periodontal disease and dental enamel hypoplasia were graded using Ogden 2008. Calculus was graded per tooth (flecks, slight, medium, heavy, after Brothwell 1981) and recorded as sub- and supra-gingival.

Pathology

7.70. Skeletal pathology and/or bony abnormality was described and differential diagnoses explored with reference to standard texts (e.g. Ortner and Putschar 1981; Resnick 1995; Aufderheide and Rodriguez-Martin 1998) which are detailed where appropriate.

Catalogue

Skeleton Number	Sex	Age category	Completeness	Stature	Femur platymeric index Left, Right	Tibia Cnemic Index Left, Right	Nonmetrics
1008	male	prime/mature adult	75+%	169.462	100, 100	67,75	sternal aperture, calcaneal double facet
1012	female	prime/mature adult	75+%	157.84	90, 87	80,80	metopic suture
1016	male	older adult	75+%	164.702	93, 100	72, 71	
1018		older child	75+%				metopic suture
1021		older child	75+%				
1023		young child	75+%				
1025	male	young adult	75+%	160.656	81, 78	92, 75	
1027	male	mature adult	75+%	167.558	100, 87	74, 75	calcaneal double facet. Metopic suture
1029		older child	75+%				
1031		young child	75+%				
1032	female	mature adult	75+%	154.629	67, 60	68, 64	
1033	male	mature adult	75+%	163.274	118, 96	100, 79	large ossicles left and right lambdoid and ossicle at lambda
1035	?female	adolescent	75+%				metopic suture
1037/1052	female	older adult	75+%	158.334	82, 89	80, 78	
1039/1061/1056	male	older adult	75+%	172.08	106, 120	90, 94	
1041	male	older adult	75+%	152.564	93, 108	69, 75	
1043		older child	75+%				
1045		young child	75+%				

1057	female	older adult	75+%	166.238	90, 71	133, 125	Humerus septal aperture
1063/1055	male	older adult	75+%	168.51			metopic suture
1064		older child	75+%				

Skeleton Number	Teeth in sockets	Teeth lost Antemortem	Teeth Lost postmortem	Dental Pathology	Pathology
1008	29		3	Periodontal 4, Calculus 32	Brown staining on all teeth - tobacco use or taphonomic. Slight pipe notch on upper and lower canines.
1012	6	11	11	Calculus 2, Abscess 3	left hand fused mid and distal phalanx. Angled slightly inferior. Mandible left condyle malformed ? Joint disease. Much amt on that side lower. All other joints are clear. Spine 2x TV with schmorl's nodes.
1016	15	6	8	Calculus 10	left prox femur OP extension on head perimeter. Not on right side. Right side fem greater trochanter irregular and extra bone growth. muscle insertions are prominent - ?age related. Left elbow in particular. pipe facet left side canine 1st premolar. osteophytes thoracic and lumbar.
1018	17		11	DEH 2	
1021	15		10	Caries 3	cribra orbitalia in both orbits. Fine porosity.
1023	8		12		frontal bossing. Forehead looks more prominent than usual. This can be caused by rickets, syphilis and rare disorders. No other indicators on skeleton for disease
1025	18		10	DEH 12, Caries 1, Abscess 2	teeth cusp developmental disorder, mulberry molars or similar. Maxilla is narrow and deep and does not correspond well with the mandible. There is little to no occlusion. The nasal bone at the tip looks damaged, a small area with rugged bone. There is frontal bossing, even though it is a male. the right tibia has what could be a healed fracture, or internal infection, but it is swollen mid shaft with minor striations on the lateral side.
1027	21	2	7	Calculus 21, DEH 6	Spine 2x TVs with SN (t11-12). frontal bone, small subcircular indentation. Maybe trauma or post-mortem.
1029	8		12		sinusitis left maxilla sinus. Spidery weblike growth.
1031	8		12		Sub clavian defect observed
1032	25		4	Calculus 14, Caries 4	
1033	24	3	4	DEH 4	?congenital left elbow malformation of the distal humerus (trochlea), radial head and ulna process. ALSO Left femoral head unformed with associated acetabulum degeneration and widening of the joint. Other options - TB, polio, osteomyelitis (after small pox), necrosis after fracture, syphilis. Hip not developmental dysplasia as the acetabulum was deep and wide and fully formed. so femoral head has atrophied without the rest of the joint. avascular necrosis, osteonecrosis of hip caused by excessive consumption of alcohol is one option.
1035	20		8		right shoulder development disorder. Proximal humerus misshapen and reduced length of diaphysis. Scapula glenoid fossa similarly changed. Unfused epiphyses not flat. Coracoid fused on (too young for that other side not).
1037/1052	16	7	9	Caries 2	
1039/1061 /1056	11	13	8	Calculus 7, periodontal 4	lower spine thoracic vertebra has extensive osteophytic growth extending sup/inf TV. Other vertebra adjacent have op growth but not as extensive.

1041	4	17	3	Calculus 3, periodontal vertical bone loss around remaining teeth	cervical verts op & po sup and inf (5-7). Neck OA. TVs 9-12 OP increasing in size. Lv1-2 op smaller. T11 most affected. No sn. Hip acetabulum degeneration superior porosity , slight lip on right side. Fem head no changes. residual rickets. Left #7 right femur ap bowing prox 1/3 shaft. Tib less affected slight ml bow. Ribs sharp bend posterior angle. ?related to rickets.
1043	14		14	Caries 2, DEH 11	severe enamel hypoplasia. No skeletal indicators of stress
1045	15		9		
1057	4	12	11	Caries 2, periodontal 1	left hip may have been fused at post auricular area - broken here after recovered from coffin. Only LV5 had OP. CV bodies seen with PO.
1063/1055	17	7	4	Caries 1, periodontal 2, DEH faint line	prominently extruding canine on maxilla left side - would've been quite distinctive.
1064	18		9	Calculus 8, DEH 2	left ulna shaft swollen in size. Sinus on lower 1/3 . External no periostitis etc. osteomyelitis internal bone infection, possibly healed? Sinus drainage hole, sharp edge, no sign of periostitis or new bone growth. All other bones un affected. No evidence for other infection anywhere.

Abbreviations: DEH – Dental enamel hypoplasia, CV – cervical, OP – osteophytes, LV – lumbar vertebra, TV – thoracic vertebra, Prox – proximal, SN- schmorl's nodes, AMTL- antemortem tooth loss

8. DISCUSSION

8.1. The 1832 '*Cholera Burial Ground*' noted on the land conveyance plan of 1836 (Fig.2) and suggested by previous fieldwork (CA 2018a) was confirmed to exist within the eastern part of the development area. Possible evidence for the subsequent use of the land by the cattle market and former post office depot were also observed. All graves were sealed below a thick burial horizon, 1007, and is suggestive of good survival of the burial ground along the river front (Fig. 3).

Phase 1: Cholera Burial Ground

8.2. Within Trench 1 four grave cuts associated with the 1832 cholera burial ground, were observed at approximately 1.55m bpgl. These grave pits were noted to be on a north-east/south-west alignment and were potentially orientated at a right angle to the adjacent floating harbour which ran in a broadly north/south alignment past the West end of the burial ground (Fig. 2).

8.3. The proximity of the burial ground to the floating harbour, 20m to the west, suggests that remains were likely transported to the site by boat or barge prior to deposition, with the St. Peters Hospital being immediately accessible by the water, as noted in Section 7 (see above).

8.4. The adjacent nature of the observed burial pits in two aligned rows suggests that they may be associated with a larger system of organised burial rows not observed during

current works. However, the variable size of the pits and quantity of remains within them suggests that the pits may have been excavated on an *ad hoc* basis in response to the number of coffins arriving for burial, with each pit potentially representing how many individuals were buried at the site on any given day. This is in line with the Order in Council of August 4th, mandating a 24-hour burial period for victims of the cholera epidemic (see Section 7 above).

- 8.5. Burial pits 1011, 1015 and 1051 followed a similar deposition typology of larger adult coffins being placed on the base of the coffin stacks with smaller children or women on top. The largest burial pit, 1048, however, appeared to break this convention and in a single instance had large adult curial SK 1033 place on top of much smaller child burial SK 1045. This potential discrepancy may be due to the pits being dug as needed and a limit to how many remains could be transported at any one time, possibly by boat or barge, resulting in the stacking of later arriving burials on top of those deposited earlier in the day.

Phase 2: Cattle Market and Former Post office Depot

- 8.6. The remains of wall 1005 are likely associated with the expansion of the cattle market founded in 1830 on land immediately to the east of the cholera burial ground. The cattle market building is visible occupying the site by 1874 (Ashmead). Cobbled surface 1001 may be associated with the 1930s Post Office depot.

9. CA PROJECT TEAM

- 9.1. Fieldwork was undertaken by Liam Wilson, assisted by Sharon Clough, Noel Boothroyd and Christian Day. This report was written by Liam Wilson. The finds and biological evidence reports were written by Luke Brandlund and Sharon Clough, respectively. The report illustrations were prepared by Li Sou. The project archive has been compiled and prepared for deposition by Hazel O'Neill. The project was managed for CA by Richard Young.

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APPENDIX A: CONTEXT DESCRIPTIONS

Context No.	Type	Fill of	Interpretation	Description	Length (m)	Width (m)	Depth/thickness (m)	Spot-date
1000	Layer		surface	mid grey concrete	>5	>4	0.2	Modern
1001	Structure		Surface	Blue grey limestone cobbles	>5	>4	0.35	Modern
1002	layer		Made Ground	Mid grey brown silty clay and demo	>5	>4	0.55	Modern
1003	Layer		Demolition	Dark red brown sandy silt, frequent cbm and stone	>1.8	0.65	0.05	19th
1004	Fill	1006		Dark grey/reddish brown silty clay	>1.8	0.8	0.43	19th
1005	Structure	1006		N-S aligned limestone wall	>1.8	0.3	0.35	19th
1006	cut		Construction cut	Sheer sided and flat based cut for wall 1005	>1.8	3.7	0.12	19th
1007	Layer		Made Ground		0.5	0.5	0.45	1832
1008	Skeleton	1011	adult skeleton	Supine adult skeleton in coffin 1010	1.6	0.3	0.2	1832
1009	Fill	1011	Grave fill	Mid brown grey silty clay	>1.9	1.15	0.6	1832
1010	Coffin	1011		Single break coffin for SK 1008	1.67	0.39	0.3	1832
1011	Cut		Grave pit	E-W Rectangular, sheer sided grave cut	>1.9	1.15	0.6	1832
1012	Skeleton		juvenile skeleton	Supine adult skeleton in coffin 1014	1.65	0.42	0.15	1832
1013	Fill	1015	Grave fill	Mid brown grey silty clay	1.85	1.2	1	1832
1014	Coffin	1015		Single break coffin for SK 1012	1.85	0.5	0.3	1832
1015	Cut		Grave pit	E-W Rectangular, sheer sided grave cut	1.85	1.2	1	1832
1016	Skeleton	1015	adult skeleton	Supine adult skeleton in coffin 1015	1.7	0.4	0.25	1832
1017	Coffin	1015		Single break coffin for SK 1016	1.82	0.47	0.3	1832
1018	Skeleton	1011	juvenile skeleton	Supine adult skeleton in coffin 1019	>1.13	0.32	0.25	1832
1019	Coffin	1011		Single break coffin for SK 1018	>1.26	0.37	0.3	1832
1020	Fill	1051	Grave fill	Mid brown grey silty clay	>1.95	>1.2	0.7	1832
1021	Skeleton	1051	juvenile skeleton	Supine juvenile skeleton in coffin 1022	1.45	0.42	0.2	1832
1022	Coffin	1051		Single break coffin for SK 1021	1.6	0.48	0.3	1832
1023	Skeleton	1051	juvenile skeleton	Supine juvenile skeleton in coffin 1024	1.1	0.32	0.12	1832
1024	Coffin	1051		Single break coffin for SK 1023	1.2	0.35	0.12	1832
1025	Skeleton	1011	adult skeleton	Supine adult skeleton in coffin 1026	1.75	0.35	0.19	1832
1026	Coffin	1011		Single break coffin for SK 1025	1.82	0.42	0.32	1832
1027	Skeleton	1011	adult skeleton	Supine adult skeleton in coffin 1028	>1.7	0.35	0.2	1832
1028	Coffin	1011		Single break coffin for SK 1027	>1.7	0.4	0.3	1832
1029	Skeleton	1051	juvenile skeleton	Supine juvenile skeleton in coffin 1030	1.25	0.35	0.15	1832
1030	Coffin	1051		Single break coffin for SK 1029	1.75	0.45	0.35	1832
1031	Skeleton	1015	adult skeleton	Supine adult skeleton in coffin 1049	1.2	0.32	0.12	1832
1032	Skeleton	1015	adult skeleton	Supine adult skeleton in coffin 1050	1.78	0.38	0.15	1832
1033	Skeleton	1048	adult skeleton	Supine adult skeleton in coffin 1034	1.65	0.4	0.21	1832
1034	Coffin	1048		Single break coffin for SK 1033	1.75	0.45	0.3	1832
1035	Skeleton	1048	juvenile skeleton	Supine juvenile skeleton in coffin 1036				1832
1036	Coffin	1048		Single break coffin for SK 1035				1832

1037	Skeleton	1048	adult skeleton	Supine adult skeleton in coffin 1038	1.55	0.4	0.15	1832
1038	Coffin	1048		Single break coffin for SK 1037	1.65	0.45	0.3	1832
1039	Skeleton	1048	adult skeleton	Supine adult skeleton in coffin 1040	1.7	0.35	0.2	1832
1040	Coffin	1048		Single break coffin for SK 1039	1.85	0.45	0.3	1832
1041	Skeleton	1048	adult skeleton	Supine adult skeleton in coffin 1040	1.6	0.34	0.15	1832
1042	Coffin	1048		Single break coffin for SK 1039	1.7	0.42	0.3	1832
1043	Skeleton	1048	juvenile skeleton	Supine juvenile skeleton in coffin 1044				1832
1044	Coffin	1048		Single break coffin for SK 1043				1832
1045	Skeleton	1048	juvenile skeleton	Supine juvenile skeleton in coffin 1046				1832
1046	Coffin	1048		Single break coffin for SK 1045				1832
1047	Fill	1048	Grave fill	Mid brown grey silty clay	2	1.2	1.1	1832
1048	Cut		Grave pit	E-W Rectangular, sheer sided grave cut	2	1.2	1.1	1832
1049	Coffin	1015		Single break coffin for SK 1031	1.32	0.35	0.2	1832
1050	Coffin	1048		Single break coffin for SK 1032	1.94	0.42	0.32	1832
1051	Cut		Grave pit	E-W Rectangular, sheer sided grave cut	>1.95	>1.2	0.7	1832
1052	Skeleton	1048	adult skeleton	Same as skeleton 1037	n.a	n.a	n.a	1832
1053	Skeleton	1048	juvenile skeleton	Same as skeleton 1045	n.a	n.a	n.a	1832
1054	Skeleton	1048	juvenile skeleton	Same as skeleton 1045	n.a	n.a	n.a	1832
1055	Skeleton	1048	adult skeleton	Supine adult skeleton in coffin 1066	1.78	0.4	0.2	1832
1056	Skeleton	1048	adult skeleton	Same as skeleton 1039	n.a	n.a	n.a	1832
1057	Skeleton	1051	adult skeleton	Supine adult skeleton in coffin 1058	1.75	0.35	0.2	1832
1058	Coffin	1051		Single break coffin for SK 1057	1.85	0.45	0.3	1832
1059	void		void	void				
1060	void		void	void				
1061	Skeleton	1048	adult skeleton	Same as skeleton 1039	n.a	n.a	n.a	1832
1062	Coffin	1048		Same as coffin 1040	n.a	n.a	n.a	1832
1063	Skeleton	1048	adult skeleton	Same as skeleton 1055	n.a	n.a	n.a	1832
1064	Skeleton	1051	juvenile skeleton	Supine juvenile skeleton in coffin 1065	1.45	0.35	0.2	1832
1065	Coffin	1051		Single break coffin for SK 1065	1.55	0.4	0.35	1832
1066	Coffin	1048		Single break coffin for SK 1055	1.85	0.48	0.32	1832
1067	Coffin	1048		Same as coffin 1040	n.a	n.a	n.a	1832
1068	Layer		Alluvial	Mid grey yellow silty clay	5	5	>0.01	n.a
2000	Layer		Made Ground	Light grey modern demolition material	8	5.5	0.65	Modern
2001	Layer		Made Ground	Dark grey silty clay, clinker and CBM	8	5.5	0.75	Modern
2002	Layer		Made Ground	Dark grey silt, CBM, rubble and stone.	8	5.5	0.7	Modern
2003	Layer		Alluvial	Mid grey yellow silty clay	8	5.5	>0.4	n.a

APPENDIX B: THE FINDS

CTX No.	Wt. (g)	Ct. (Total)	Bowls*	Stems	Tips	Description	Makers Marks	Date
1047	16	1	1	1	0	Nearly complete pipe broken in two	n/a	1810-40

APPENDIX C: LEVELS OF PRINCIPAL DEPOSITS AND STRUCTURES

Levels are expressed as metres below current ground level and as metres Above Ordnance Datum (AOD).

	Trench 1	Trench 2
Current ground level	0.00m (7.40m)	0.00m (7.90m)
Top of burial horizon	1.10m (6.3m)	N.A
Top of alluvial	0.45m (5.85m)	2.10m (5.8m)

Upper figures are depth below modern ground level; lower figures in parentheses are metres AOD.

APPENDIX D: OASIS REPORT FORM

PROJECT DETAILS		
Project name	Land of Former Post Office Depot, Cattle market road, Bristol	
Short description	<p>In October 2020, Cotswold Archaeology carried out an archaeological excavation of land at the Former Post Office Depot, Cattle Market Road, Bristol. Two areas were excavated within the site.</p> <p>Four burial pits containing twenty-one sets of coffined, lime-coated human remains were identified in an area known to have been used as a cholera burial ground in 1832. An overlaying wall and a cobbled surface, possibly associated with a mid-19th century cattle market and 20th-century post office depot were also recorded.</p>	
Project dates	12–26 October 2020	
Project type	excavation	
Previous work	Watching brief (CA 2018)	
Future work	Unknown	
PROJECT LOCATION		
Site location	Land of Former Post Office Depot, Cattle market road, Bristol	
Study area (m ² /ha)	2.16ha	
Site co-ordinates	359914 172433	
PROJECT CREATORS		
Name of organisation	Cotswold Archaeology	
Project brief originator	Peter Insole, Principal Historic Environment Officer, BCC	
Project design (WSI) originator	Cotswold Archaeology	
Project Manager	Richard Young	
Project Supervisor	Liam Wilson	
MONUMENT TYPE	none	
SIGNIFICANT FINDS	none	
PROJECT ARCHIVES		
	Intended final location of archive	Content
Physical	Bristol's Museums, Galleries and Archives	Clay pipe, coffin furniture
Paper	Bristol's Museums, Galleries and Archives	Context sheets, Trench sheets, Skeleton sheets
Digital	Bristol's Museums, Galleries and Archives	Database, digital photos
BIBLIOGRAPHY		
Cotswold Archaeology 2021 <i>Land of Former Post Office Depot, Cattle market road, Bristol: Archaeological Excavation</i> CA typescript report CR0395_1		



 Site boundary

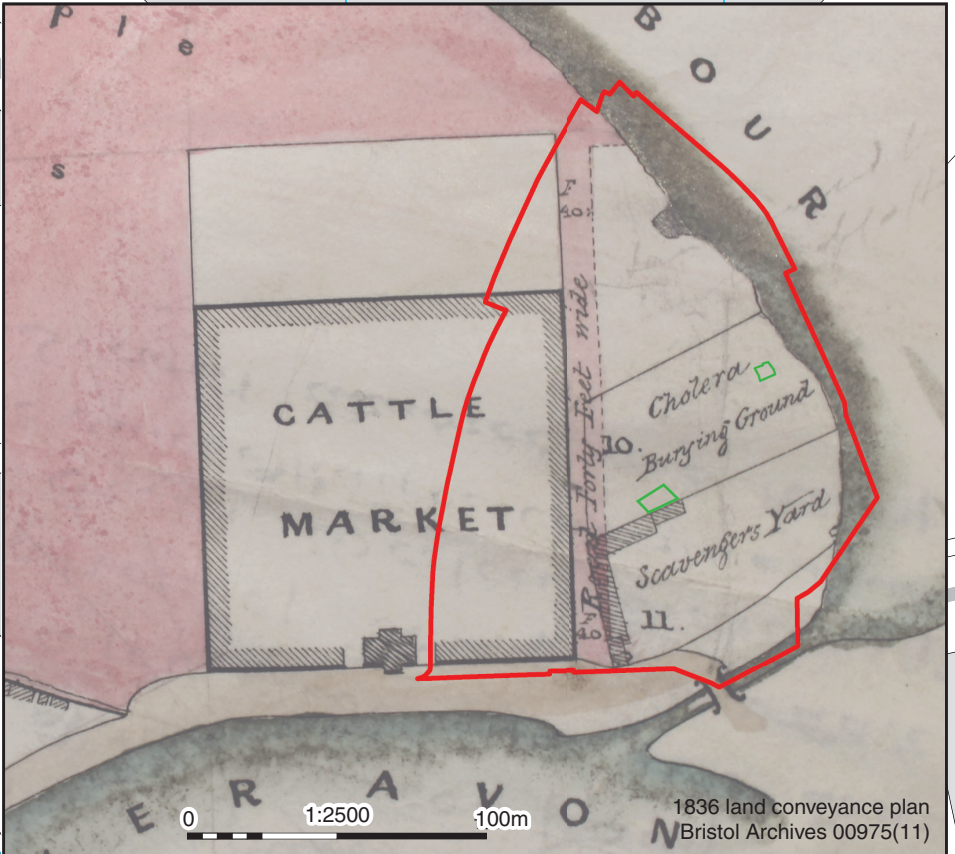
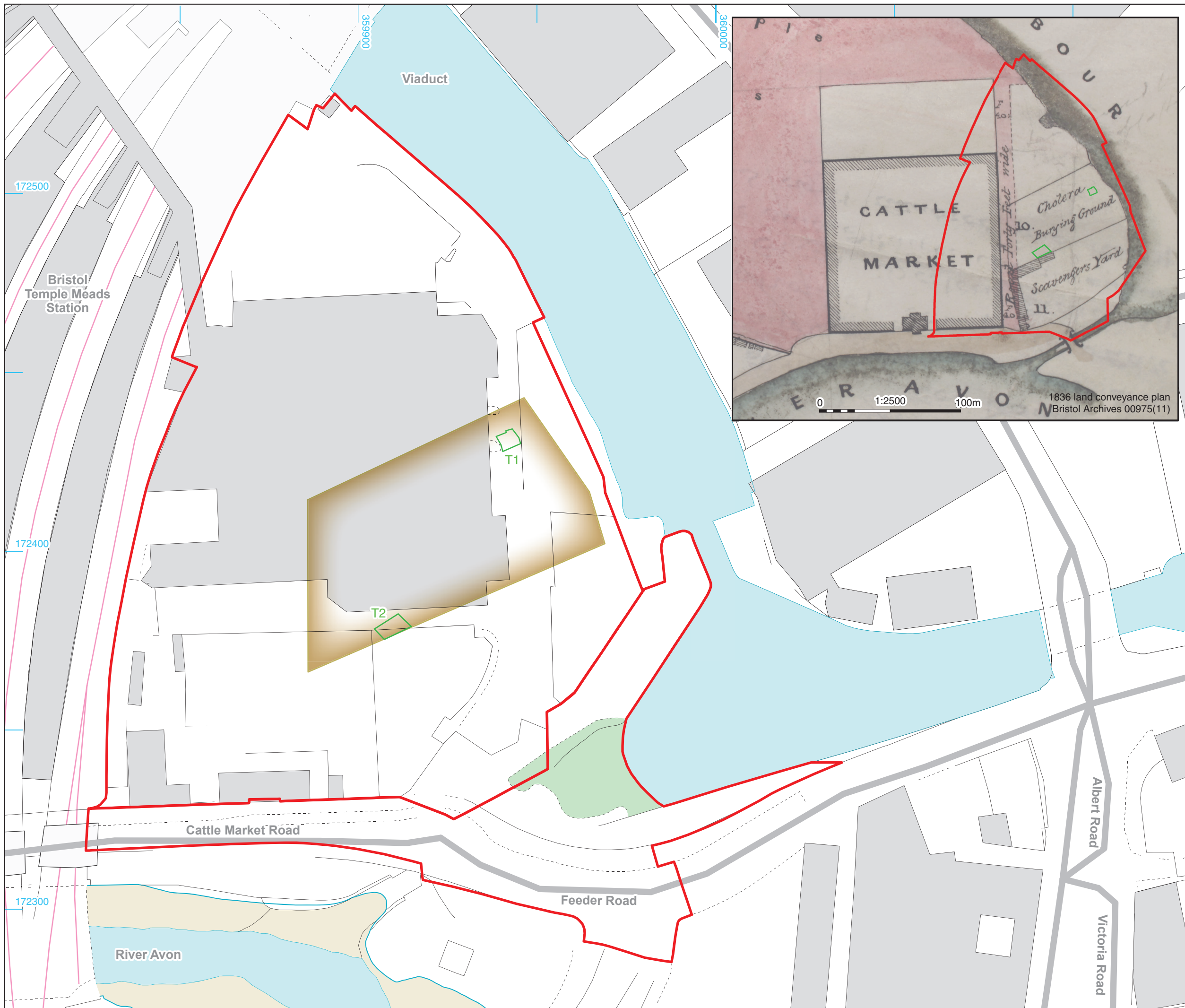


Andover 01264 347630
Cirencester 01285 771022
Milton Keynes 01908 564660
Suffolk 01449 900120
www.cotswoldarchaeology.co.uk
enquiries@cotswoldarchaeology.co.uk

PROJECT TITLE
 Former Post Office Depot,
 Cattle Market Road, Bristol

FIGURE TITLE
 Site location plan

DRAWN BY LS	PROJECT NO. CR0395	FIGURE NO.
CHECKED BY DJB	DATE 30/04/21	1
APPROVED BY LW	SCALE@A4 1:25,000	



- Site boundary
- Limit of excavation
- Historical Cholera Burial Ground
- Road
- Railway



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 Andover 01264 347630
 Cirencester 01285 771022
 Milton Keynes 01908 564660
 Suffolk 01449 900120
www.cotswoldarchaeology.co.uk
enquiries@cotswoldarchaeology.co.uk

PROJECT TITLE
 Former Post Office Depot,
 Cattle Market Road, Bristol

FIGURE TITLE
 Trench location plan and land
 conveyance plan

DRAWN BY CHECKED BY APPROVED BY	LS DJB LW	PROJECT NO. DATE SCALE@A3	CR0395 30/04/21 1:1500, 1:2500	FIGURE NO. 2
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Trench 2 looking south-east (1 metre scale)



Cobbled surface 1001, looking south-west



Wall 1005, looking west (0.2 metre scale)


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 Andover 01264 347630
 Cirencester 01285 771022
 Milton Keynes 01908 564660
 Suffolk 01449 900120
www.cotswoldarchaeology.co.uk
enquiries@cotswoldarchaeology.co.uk

PROJECT TITLE
 Former Post Office Depot,
 Cattle Market Road, Bristol

FIGURE TITLE
Trench 1 & 2 photographs

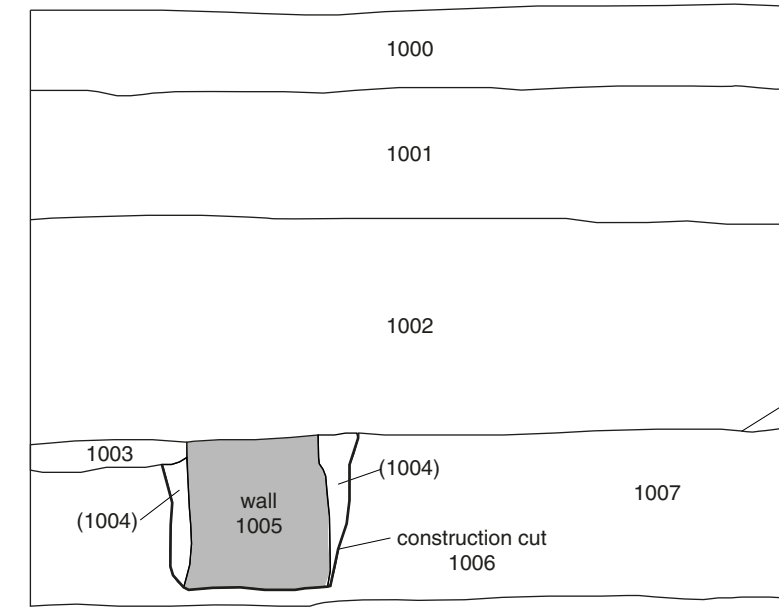
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CHECKED BY	DJB	DATE	30/04/21	3
APPROVED BY	LW	SCALE@A3	NA	



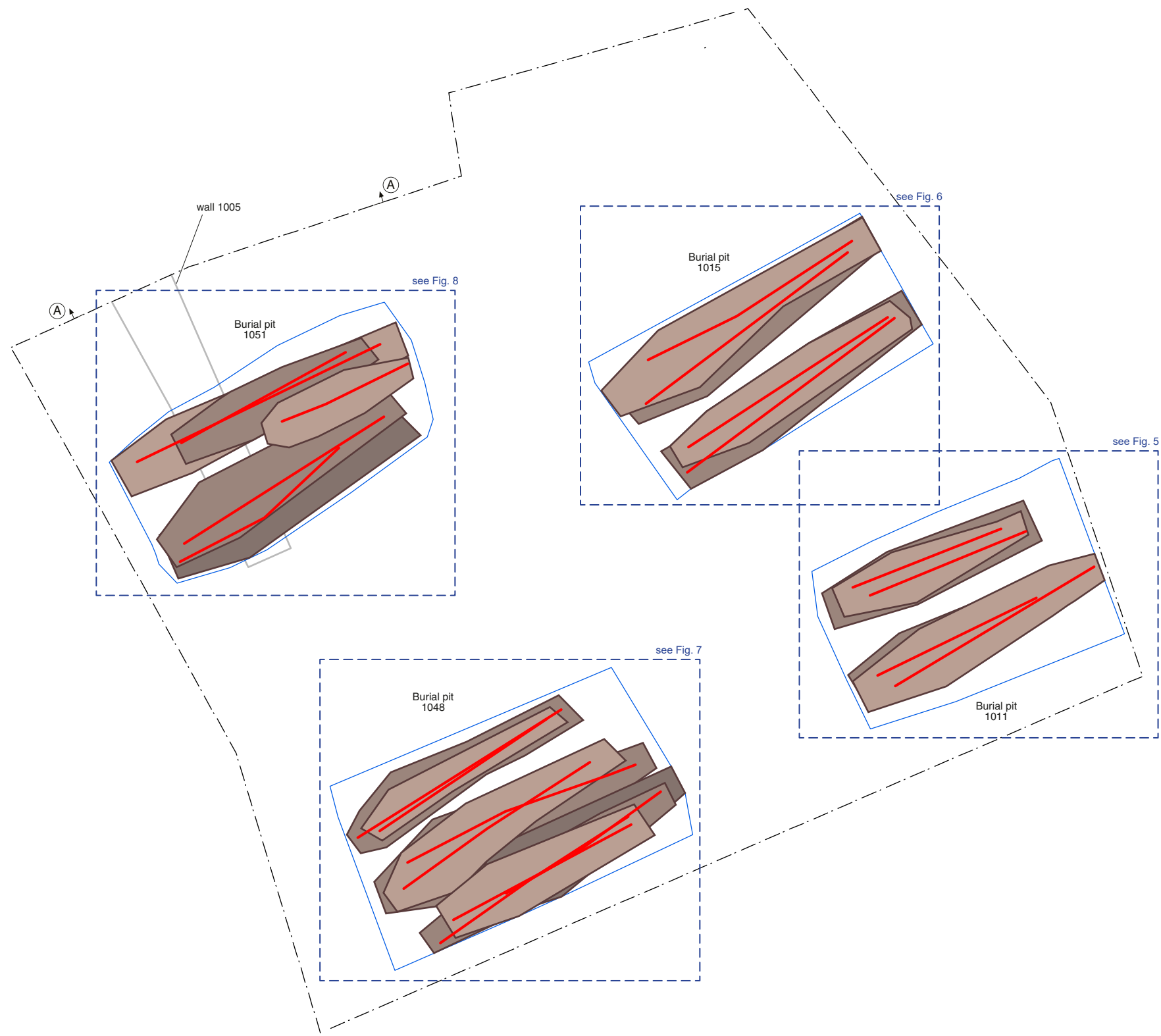
Section AA Trench 1 principle deposits

SW
7.45m
AOD

NE



0 1:20 1m



Evaluation trench
 Archaeological feature outline
 Base of burial pit
 Skeleton line
 Section location

Coffin stratigraphy

High
 Middle
 Low

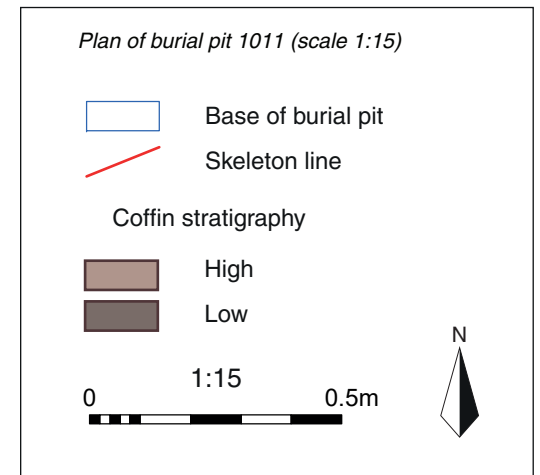
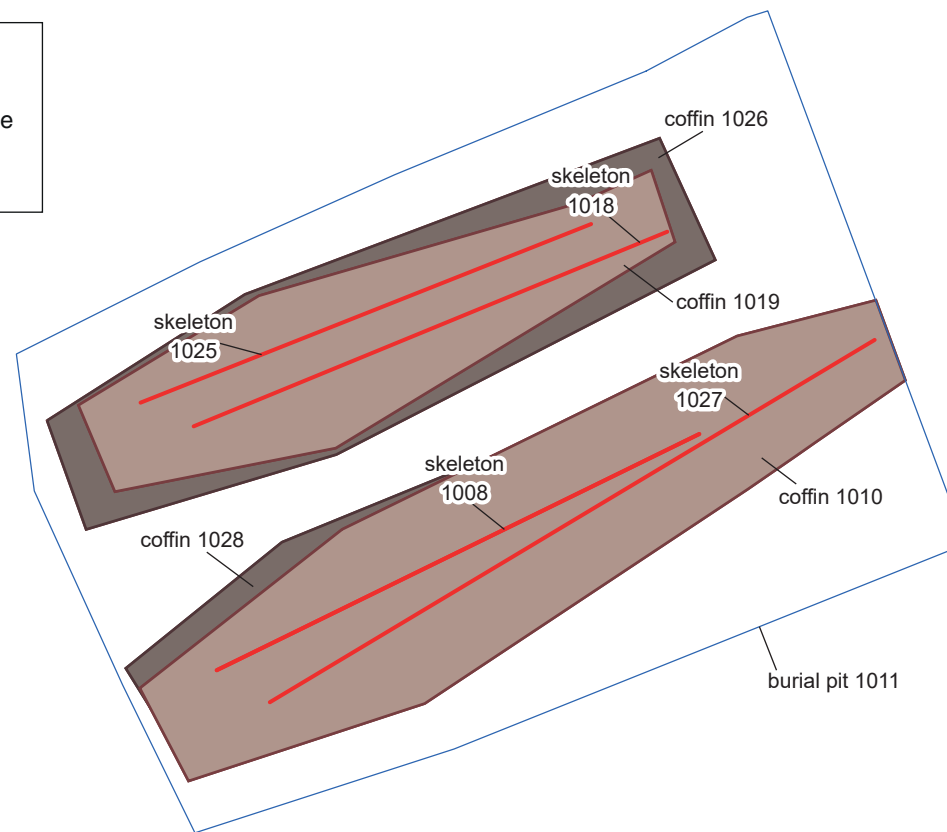
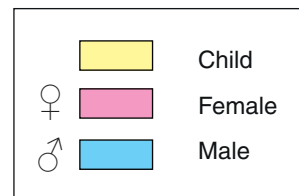
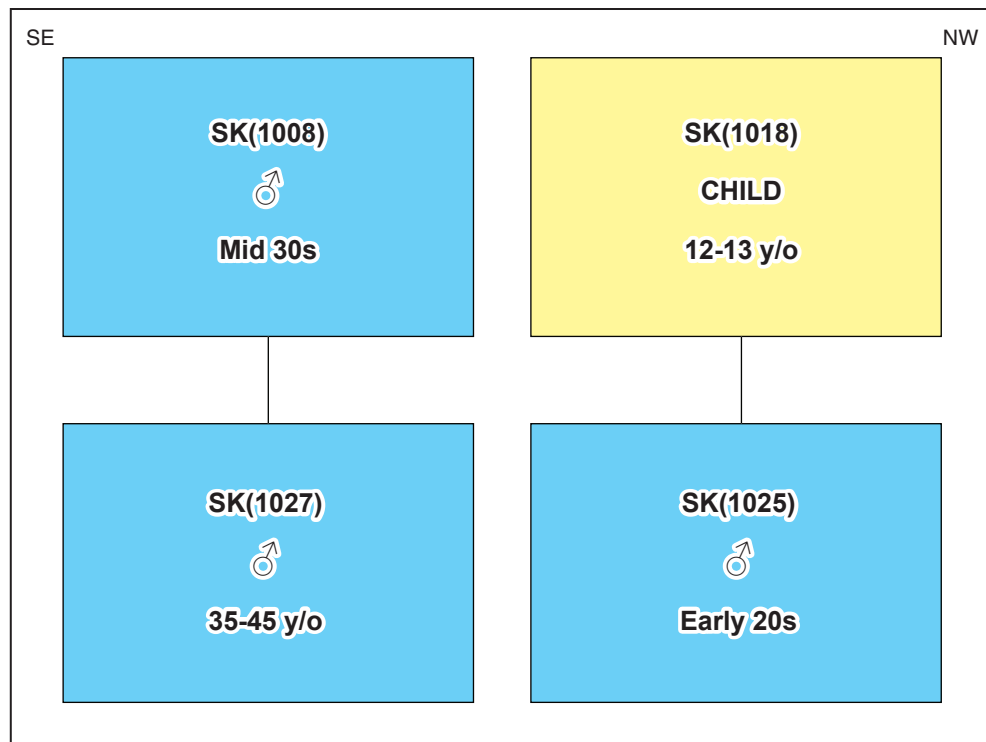
0 1:30 1m

Andover 01264 347630
 Cirencester 01285 771022
 Milton Keynes 01908 564660
 Suffolk 01449 900120
www.cotswoldarchaeology.co.uk
enquiries@cotswoldarchaeology.co.uk

PROJECT TITLE
 Former Post Office Depot,
 Cattle Market Road, Bristol

FIGURE TITLE
**Trench 1 burial location plan showing
 burial pits**

DRAWN BY LS PROJECT NO. CR0395 FIGURE NO.
 CHECKED BY DJB DATE 30/04/21 4
 APPROVED BY LW SCALE@A3 1:30



Burial pit 1011 skeletal deposition order



Skeleton 1008, looking west (1 metre scale)



Skeleton 1018, looking west (1 metre scale)

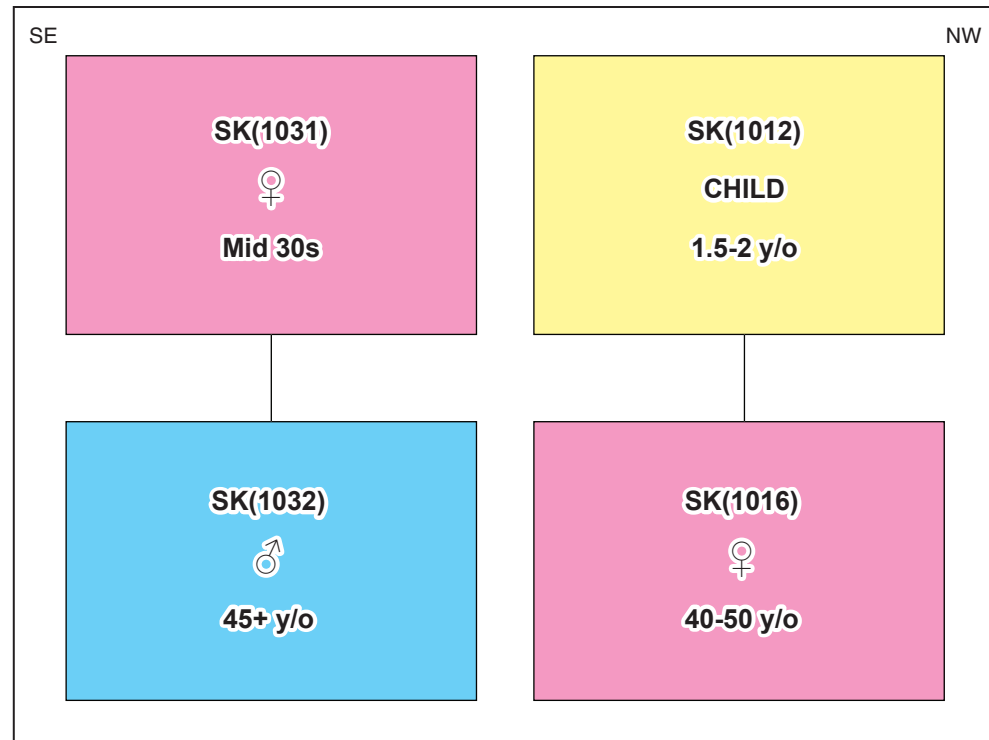


Skeleton 1025, looking west (1 metre scale)

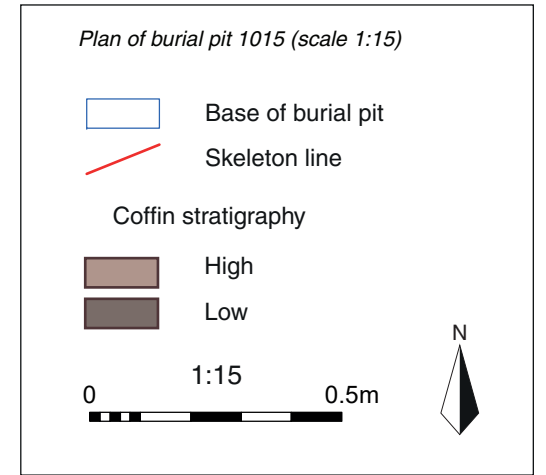
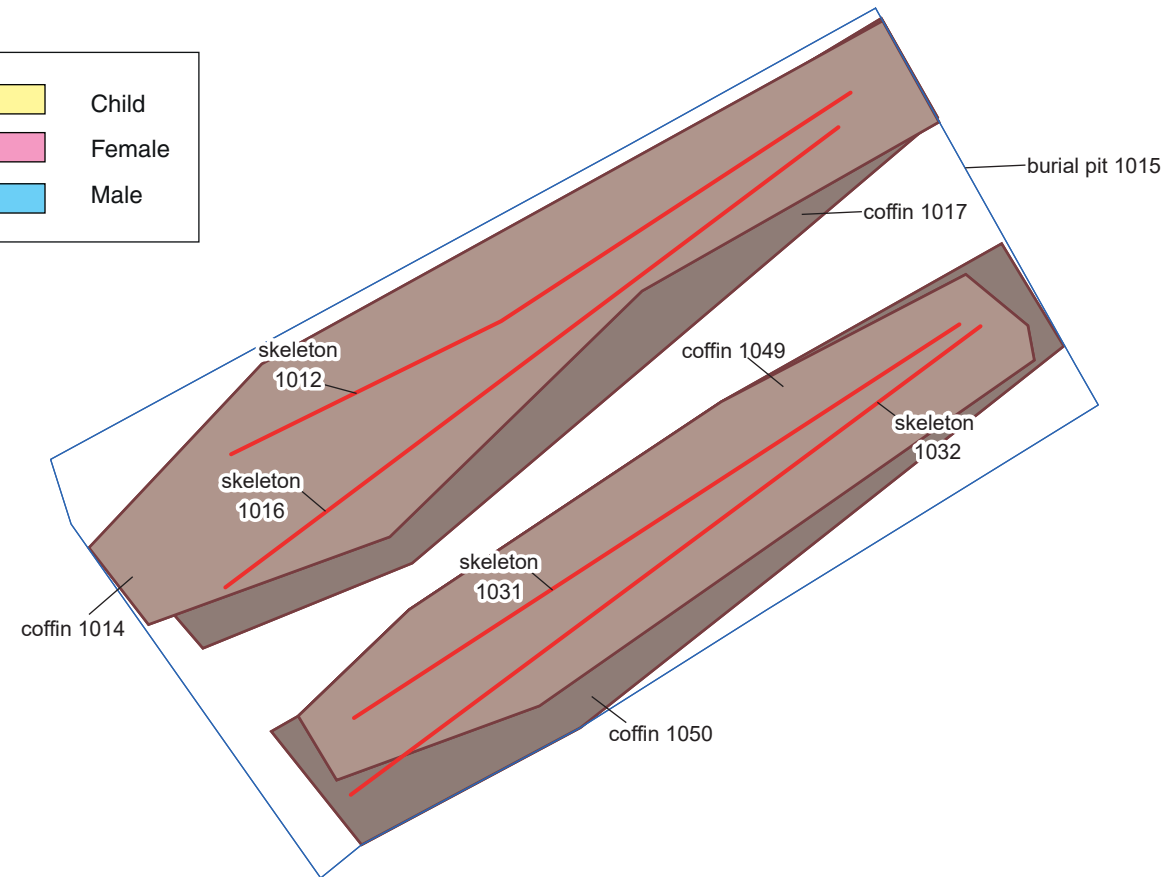
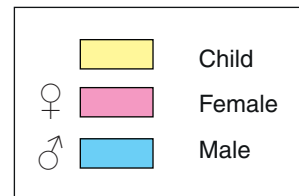

Cotswold Archaeology
 Andover 01264 347630
 Cirencester 01285 771022
 Milton Keynes 01908 564660
 Suffolk 01449 900120
www.cotswoldarchaeology.co.uk
enquiries@cotswoldarchaeology.co.uk

PROJECT TITLE
 Former Post Office Depot,
 Cattle Market Road, Bristol
 FIGURE TITLE
**Burial pit 1011 plan, skeletal deposition
 order and photographs**

DRAWN BY LS PROJECT NO. CR0395 FIGURE NO.
 CHECKED BY DJB DATE 05/05/21 5
 APPROVED BY LW SCALE@A3 1:15



Burial pit 1015 skeletal deposition order



Skeleton 1012, looking west (1 metre scale)



Straw at head of skeleton 1012, looking west (0.2 metre scale)

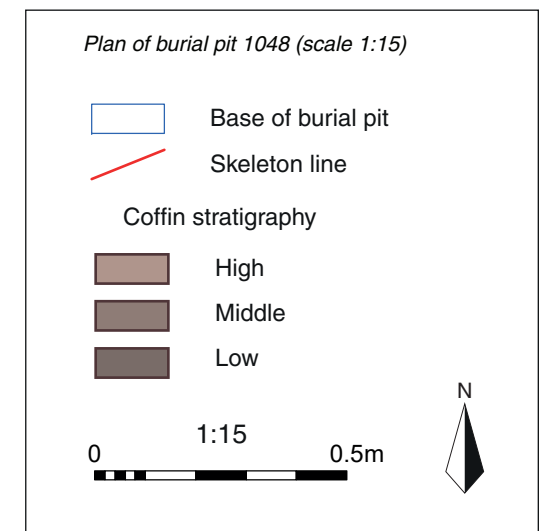
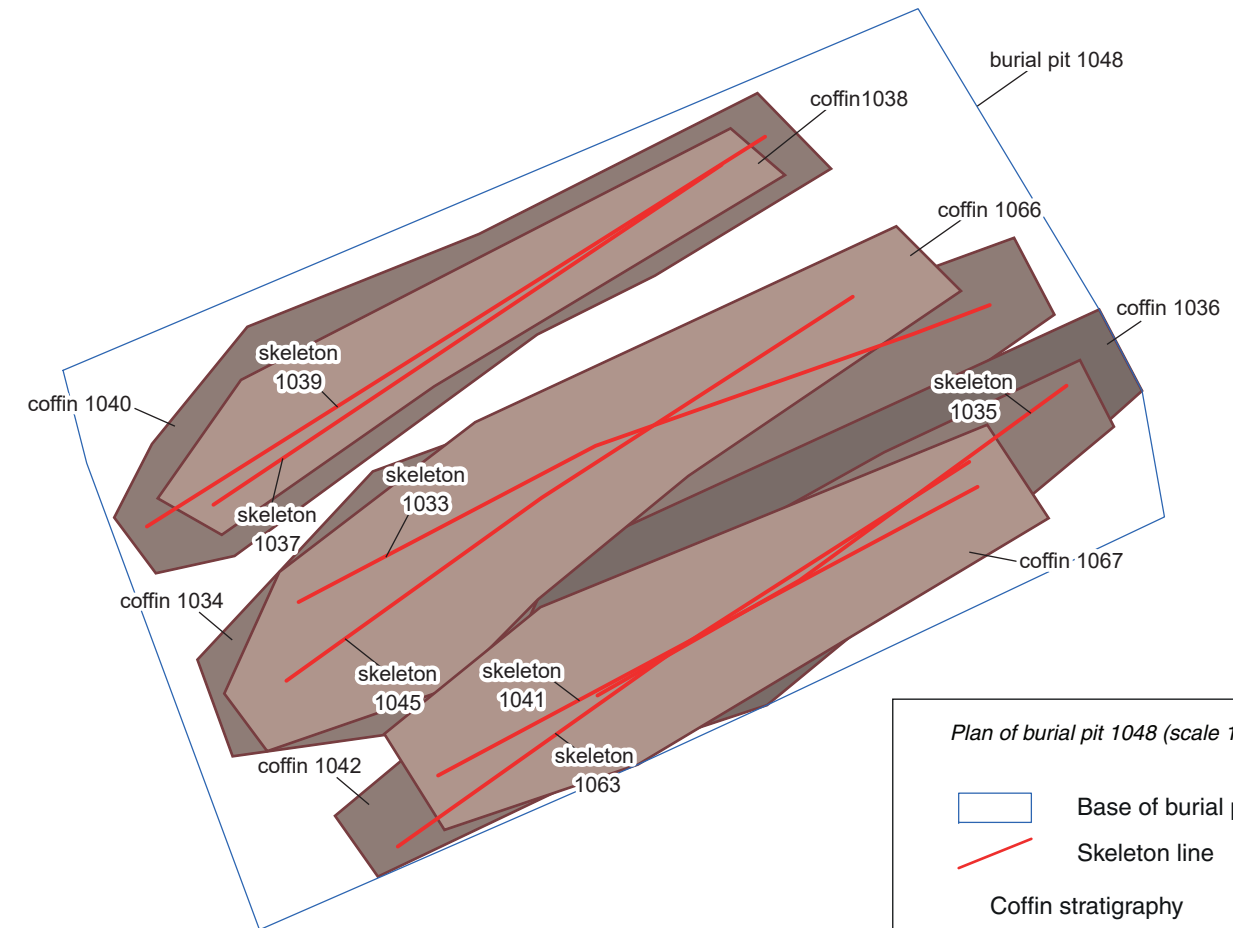
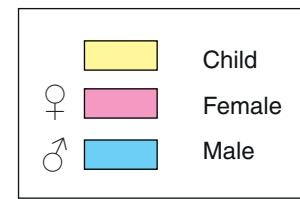
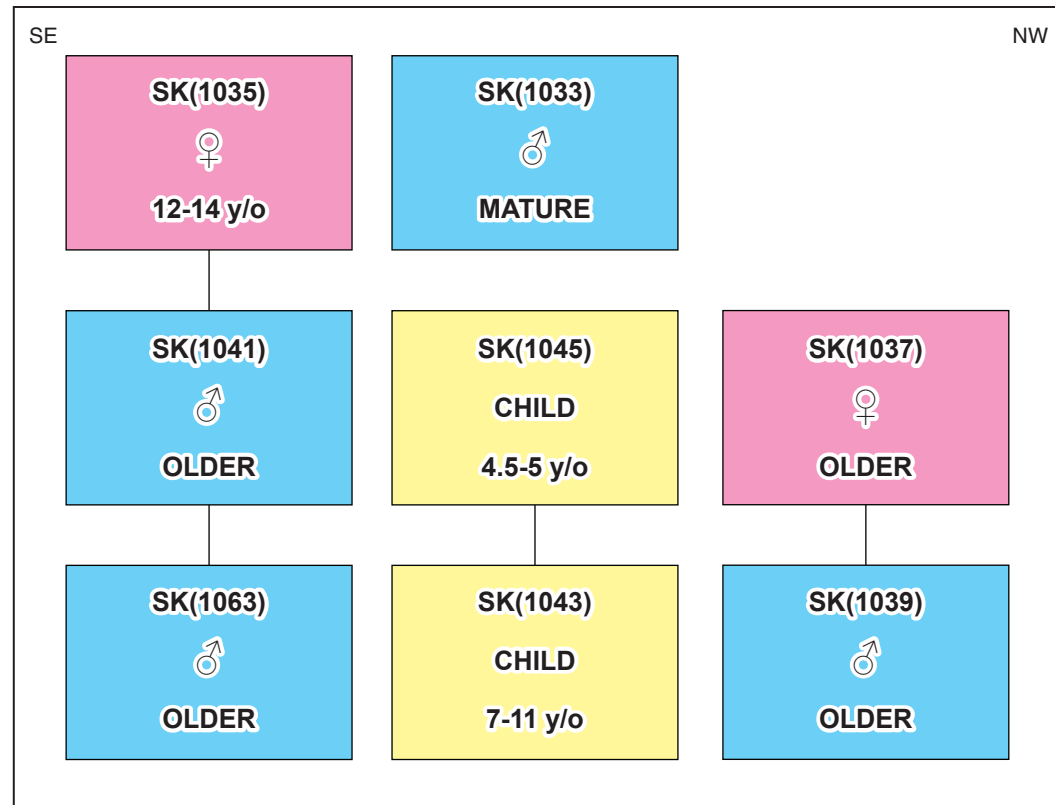


Skeleton 1032, not in situ (1 metre scale)


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 Andover 01264 347630
 Cirencester 01285 771022
 Milton Keynes 01908 564660
 Suffolk 01449 900120
 www.cotswoldarchaeology.co.uk
 enquiries@cotswoldarchaeology.co.uk

PROJECT TITLE
 Former Post Office Depot,
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FIGURE TITLE
 Burial pit 1015 plan, skeletal deposition
 order and photographs

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 CHECKED BY DJB DATE 05/05/21
 APPROVED BY LW SCALE@A3 1:15 **6**



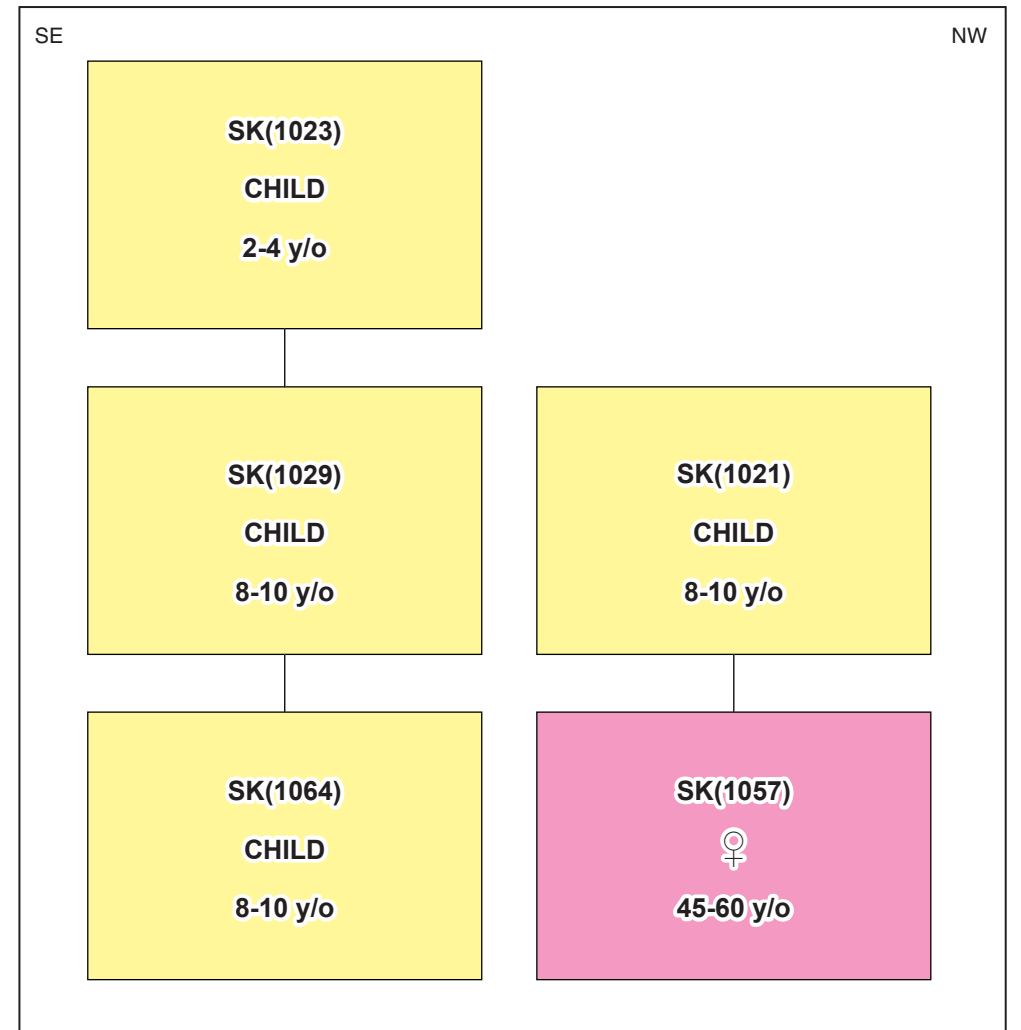
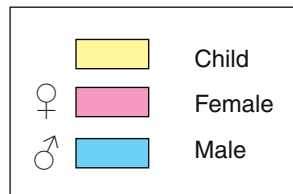
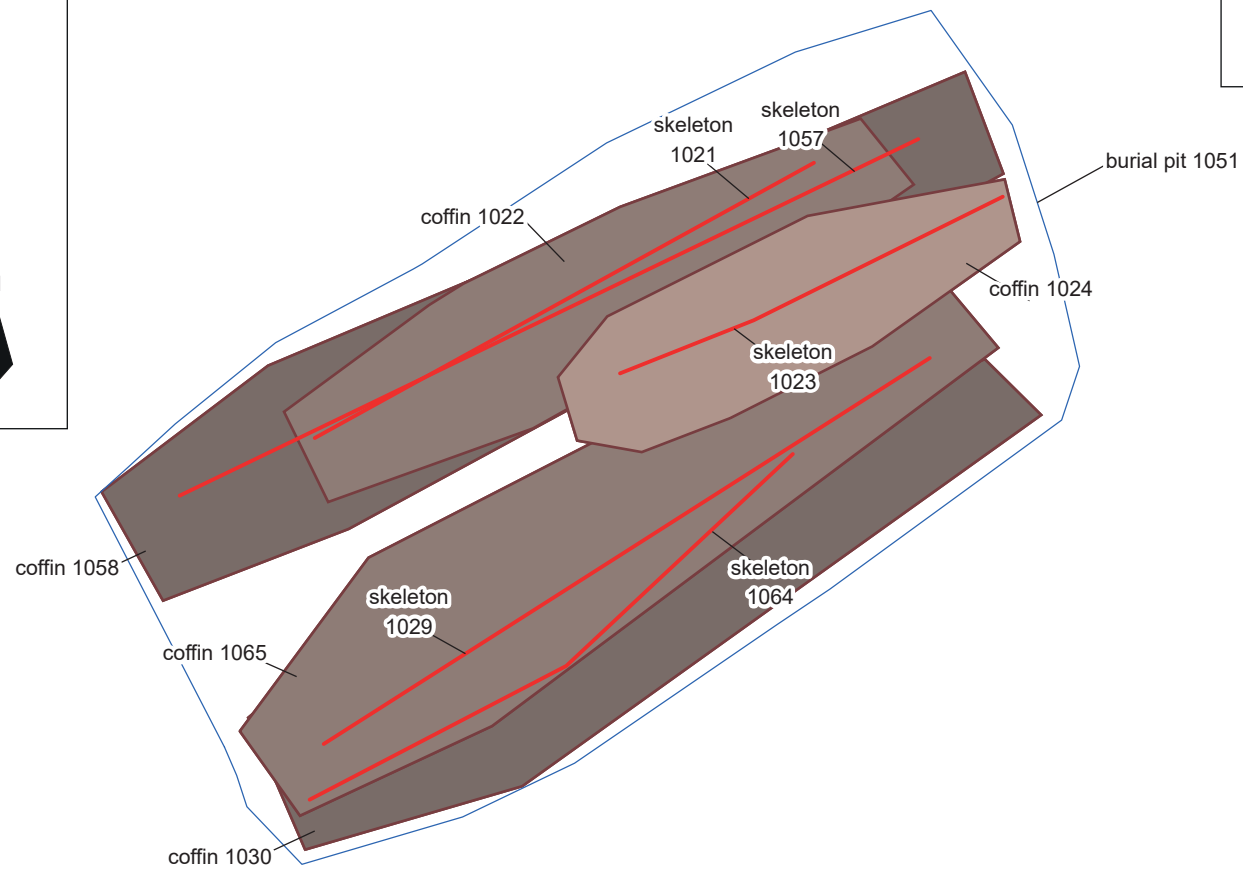
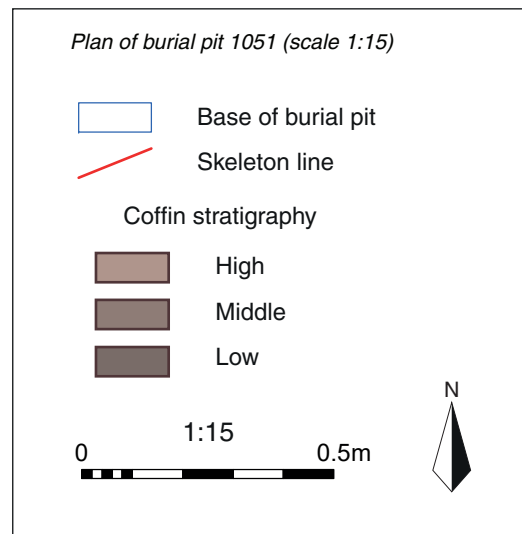
Burial pit 1048 skeletal deposition order



Skeleton 1033, looking west (1 metre scale)



Skeleton 1035 not in situ (1 metre scale)



Burial pit 1051 skeletal deposition order



Skeleton 1023, looking north-west (1 metre scale)



Skeleton 1057, looking north-west (1 metre scale)



Skeleton 1064, looking overhead (1 metre scale)

Andover 01264 347630
 Cirencester 01285 771022
 Milton Keynes 01908 564660
 Suffolk 01449 900120
 www.cotswoldarchaeology.co.uk
 enquiries@cotswoldarchaeology.co.uk

PROJECT TITLE
 Former Post Office Depot,
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FIGURE TITLE
 Burial pit 1051 plan, skeletal deposition
 order and photographs

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Right arm fabric, Skeleton 1043



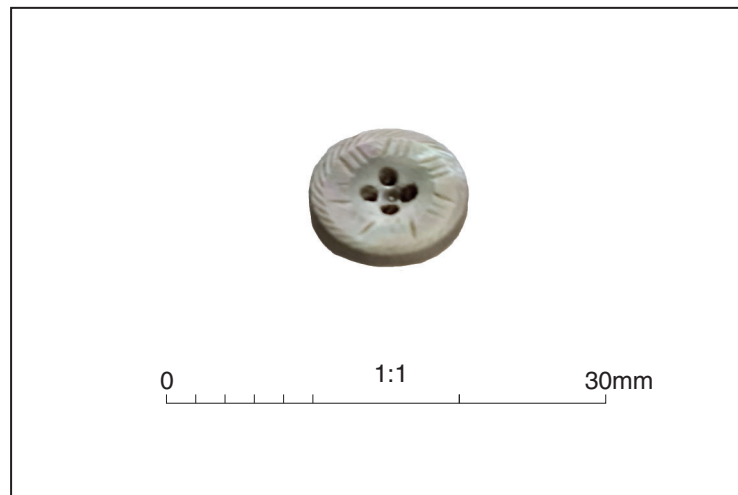
Fabric piece associated with Skeleton 1057



Fabric, Skeleton 1043



Buckles and leather straps, Skeleton 1033 (scale 0.05m)



Prosser button, Skeleton 1033



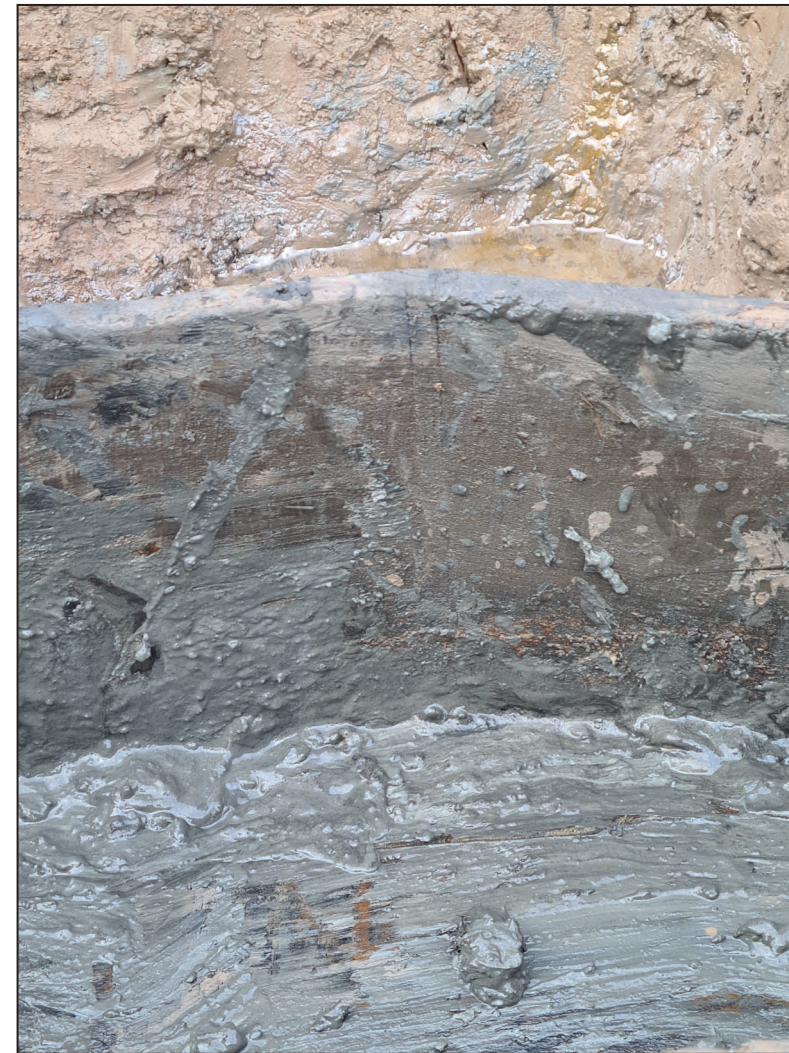
Example of straw in coffin



Iron ring coffin furniture, coffin 1028 (scale 0.2m)



Example of coffin preservation



Example of kerfing to create the shoulder bend on the long side of the coffin



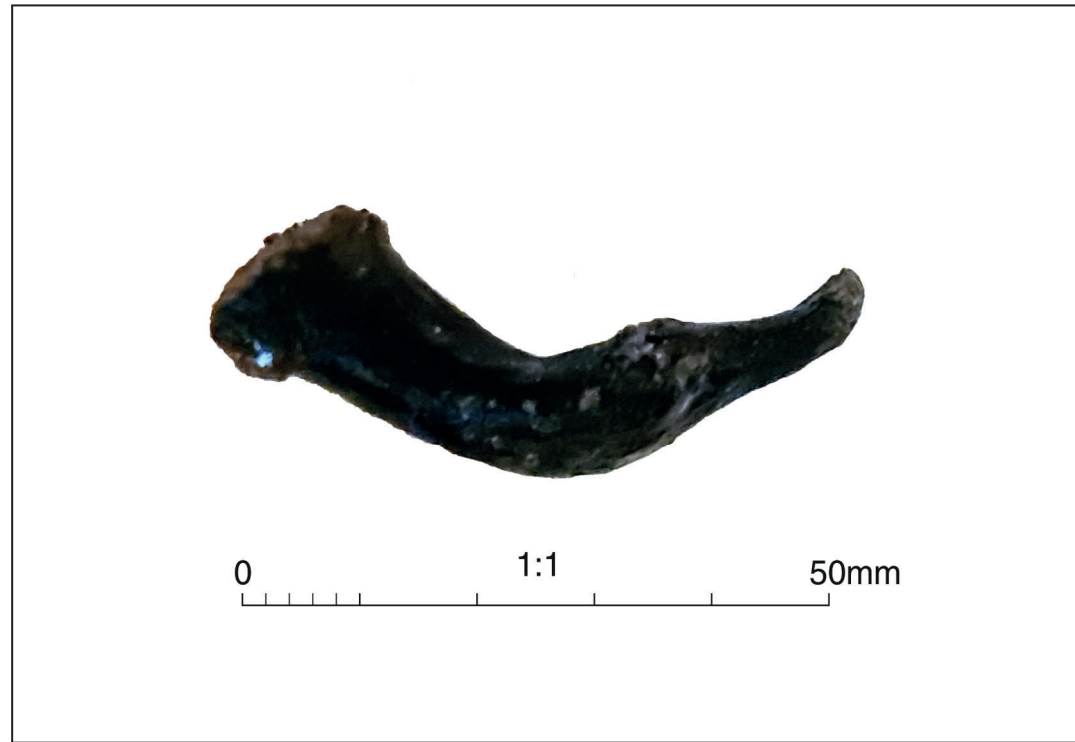
Skeleton 1033 left distal humerus malformation, right humerus for comparison



Skeleton 1033 left femoral head malformed, right for comparison



Skeleton 1025 defect in the enamel



Skeleton 1012 fused proximal and medial phalanges



Skeleton 1035 right humerus reduced length and proximal head undeveloped



Skeleton 1064 left ulna with osteomyelitis



Skeleton 1063 prominent canine tooth



Skeleton 1041 left femur residual rickets

Andover Office

Stanley House
Walworth Road
Andover
Hampshire
SP10 5LH

t: 01264 347630

Cirencester Office

Building 11
Cotswold Business Park
Cirencester
Gloucestershire
GL7 6BQ

t: 01285 771022

Milton Keynes Office

Unit 8 - The IO Centre
Fingle Drive, Stonebridge
Milton Keynes
Buckinghamshire
MK13 0AT

t: 01908 564660

Suffolk Office

Unit 5, Plot 11, Maitland Road
Lion Barn Industrial Estate
Needham Market
Suffolk
IP6 8NZ

t: 01449 900120

e: enquiries@cotswoldarchaeology.co.uk

