Frewin Hall,Ground Source Heat Pump

Oxford

Written Scheme of Investigation

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Frewin Hall, Ground Source Heat Pump, Oxford

Written Scheme of Investigation for an Archaeological Evaluation and Watching Brief

Centred on SP51210626

Contents

List of Figures

1 INTRODUCTION

1.1 Project details

1.1.1 OxfordArchaeology (OA) has been commissioned by Lee/Fitzgerald Architects Ltd (LFA) on behalf of Brasenose Collegeto undertake an archaeological evaluationof the site of a proposed development to install a ground source heat pumparray(GSHP)and under-floor heating at Frewin Hall, Oxford.

1.1.2 The work is being undertaken to inform the Planning Authority in advance of submission of a Listed Building Consentapplication. Although the Local Planning Authority has not set a brief for the work, discussionsbetween Tim Lee (LFA) and David Radford, Archaeologist for Oxford City Council (OCC), have established the scope of work required; this document outlines how OA will implement those requirements.

1.1.3 All work will be undertaken in accordance with the Chartered Institutefor Archaeologists' *Code of Conduct* (CIfA 2014a) and relevant *Standards and Guidance* (CIfA 2014b;CIfA 2014c)and local and national planning policies.

1.2 Location, topography and geology

1.2.1 The site is located in the historic core of the city of Oxford and 150m north-east of Oxford Castle. The site is also located within the eastern part of the Frewin Hall complex, which is an annexe of Brasenose College.

1.2.2 The proposed area for the GSHP arrayis within a courtyard bounded to the west and north by Frewin Hall. The southern limit of the courtyard is bounded by modern extensions to the hall and the eastern sideby a boundary wall dividing the site from Frewin Court and Clarendon House.The test pitisto be located withinthe ground floor of the southern wing of Frewin Hall.

1.2.3 The British Geological Survey records the underlying bedrock geology of the site as Oxford Clay Formation and West Walton Formation, a sedimentary mudstone formed approximately 157 to 166 million years ago during the Jurassic Period. Superficial geological deposits within the historic centre of Oxford are situated on a promontory formed of two terraces; the Summerton-Radley (second terrace) Sand and Gravel Member and the Floodplain (first terrace) Northmoor Sand and Gravel (British Geological Survey 2023).

1.2.4 The current level in the external courtyard is approximately 64.5mOD and is relatively flat. Natural gravel may be encountered within the site at around 62.05-62.19m OD (2.01-2.15m below ground). Therealsoappears to have been a build-upof made ground (perhaps around 0.5m) in theexternal courtyard, which can probably be attributed to late 20th centuryremodelling at the site. Modern layers of around 0.5m were recorded during the 2018 evaluation and 2021 excavation just south-west of thesite (Oxford Archaeology 2018; 2021). In addition, there are steps in the eastern part of the site (within the eastern boundary wall) down to a 17th century doorway and passageway to the east, indicating the ground level was raised after the 17th century. A 1993 evaluation(shown on Fig. 2; OXFH93)recorded the archaeological horizon at

around 61.9m aOD just south of the site, but based on the existing ground levels, this appears to be inaccurate by approximately 2m (OA1993, fig. 3).

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND AND POTENTIAL

2.1 Archaeological and historical background

2.1.1 The archaeological and historical background of the site has been described in detail in an archaeological desk-based assessment produced by OA (2023) anda summary of this information is provided belowfor reference.

Previous Archaeological Investigations

2.1.2 There have been seven previous archaeological investigations within the Frewin Hall complex. Archaeological investigations carried out at Frewin Hall in the 1970s revealed the remains of St Mary's College chapel and foundations for the cloister range. Subsequent investigations carried out in the 1990s uncovered the foundations of the eastern range of buildings relating to St Mary's College, as well as pits, garden soils and medieval walls. The 2018 evaluation and 2021 excavation recorded the substantial possible southern walls of St Mary's College cloister and truncated remains of earlier buildings, along with a large number of intercutting pits.

Prehistoric Period (500,000 BP–AD 43)

2.1.3 There is limited evidence for early prehistoric activity within Oxford city centre. Some Palaeolithic artefacts have been found on the southern part of the first and second river terrace gravels, but not in high numbers (Lambrick 2013).

2.1.4 The site was part of a wider Neolithic and Bronze Age ritual landscape located across central and north Oxford. This includes the Oxford Henge, a 200m wide Neolithic monument east of St Giles, and a row of east-west aligned Bronze Age ring ditches within the University Parks and Radcliffe Infirmary site (Lambrick 2013). Closer to the site, in 1997 a Neolithic core flake was recovered from the garden of Clarenden Hotel, located 40m east of the site.

2.1.5 Lambrick (2013) suggests that this prehistoric ceremonial complex extended south of the University Parks to the edge of the second gravel terrace promontory which underlies the site. The location of this complex is thought to have some association with the confluence of the River Thames and River Cherwell (Lambrick 2013). Ring ditches and Bronze Age barrows have been recorded across this area and have been interpreted by the Oxford City Urban Archaeological Database as the remains of a late prehistoric barrow cemetery, potentially occupying much of central Oxford. Evidence for this complex has been mostly lost by the wholescale settlement and occupation of the area, although occasional observations of it have been made in rare pockets of undisturbed land. One such observation was made at 24a St Michael's Street, located c 70m north-north-west of the site, where a Bronze Age barrow was excavated in 1985. In 2021, the southern part of a Bronze Age barrow was recorded within the Frewin complex and *c* 15m south-west of the site. This barrow had a ditch which was 3.4m wide and the whole monument may have been up to 25m in diameter.

Romano-British Period (AD 43–410)

2.1.6 The only Roman find to be recorded in the vicinity of the site was a glass bottle, located 30m east of Frewin Hall, during the Clarendon Hotel excavation. No Roman features havebeen recorded in the study area.

Early Medieval Period (AD 410–1065)

2.1.7 No early Saxon heritage assets have been recorded within the site and the study area, but a number of early Saxon sites have been recorded in the wider area. Early Saxon settlement activity including sunken-featured buildings has been recorded on the south-eastern outskirts of the modern city at Oxford Science Park, Littlemore (Dodd 2003, 12).

2.1.8 Two late 8th century burials were recorded within the Bronze Age barrow located 15m south-west of the site, which was excavated in 2021. This suggests that the Bronze Age barrow complex within central Oxford may have been reused for funerary activity during the middle Saxon period.

2.1.9 The town of Oxford may have developed in the 8th century round the monastery of St Frideswide, which perhaps provided a focus for settlement (Dodd 2003, 16–17). Oxford was probably founded in the first part of King Alfred's reign in the 870s/880s (Crossley 2021, 11) and it is possible that there were dispersed farmyards across central Oxford at this time.

2.1.10 By the early 10th century, Oxford was well established as a defended burh, part of the kingdom of Wessex, which protected a crossing over the river Thames. There were two principal roads through the town: one aligned roughly north-south including Cornmarket Street and St Aldates, which passed through the north and south gates of the town, and another that was aligned west-east and may have linked a conjectured west gate with Queen Street, the High Street and the east gate (Dodd 2003, 19-25).

2.1.11 The site is located west of Cornmarket Street and north of Queen Street, two of the originalstreets. Two additional parallel streets may be contem porary with these principal routes, including St Michael's Street and New nn Hall Street, located to the north and the west of the site. Saxon road surfaces dating from the 10th century have been recorded along New Inn Hall Street. St Michael's Street was the most northerly street of the defended Saxon town, running just south of the defences. It is probable that Cornmarket Street, Queen Street, St Michael's Street and New Inn Hall Street would have had late Saxon properties fronting onto them (Crossley 2021, map sheet G). There may have been additional parallel lanes aligned roughly east-west linking New Inn Hall Street with Cornmarket Street.

2.1.12 Late Saxon sunken-featured buildings fronting Cornmarket Street were recorded during excavations in the 1950s at the Clarendon Hotel and in the 1960s at 55-58 CornmarketStreet. Occupation layers and Saxon pits were also recorded during the Clarendon Hotel excavation. Recently the excavations at Frewin Hall recorded two sunken-featured buildings, and the smaller of which was located only 10-15m south-west of the site. These sunken-featured buildings may have been fronting onto one of the roughly NE-SW aligned side streets which connected New Inn Hall Street with Cornmarket Street.

Later Saxon pottery has also been recorded in the north-western and south-western parts of the study area.

Later Medieval Period (1066–1550)

2.1.13 After the Norman Conquest, Oxford Castle was built in AD 1071 at the western end of the town and 150m south-west of the site. The Saxon town of Oxford is thought to have expanded by the 11th century. The main focus of settlement was confined within the city wall, which has been recorded within the northern part of the study area. The stone wall was strengthened, and bastions added between 1224 and 1240 (Crossley 2021, 28). Part of Bastion 2 has been incorporated into No. 32 St Michael's Street and is Grade II listed.

2.1.14 During the medieval period, it is probable that timber buildings, some with stonecellars and shops, fronted onto Cornmarket Street, Queen Street, St Michael's Street and New Inn Hall Street. Buildings may have also fronted onto side streets such asShoe Lane, which connected New Inn Hall Street and Cornmarket Street and waslocated 50m south of the site. The western part of this street is still in use, and it maydate back to the late Saxon period. Shoe Lane may have had stone boundary wallseither side of it. One short section of stone wall is still extant along the northern sideof the lane, and another was recorded during archaeological investigations at 15-17Clarendon Centre(Douglas et al. 2015, 12-15).

2.1.15 During the archaeological investigations at the Clarendon Centre, located 50m east ofthe site, medieval structures dating from the 12th and 16th centurieswererevealed. A 12th-century half-sunken vault was also uncovered during theseinvestigations, frontingonto Cornmarket Street.

2.1.16 A large number of 13th-15th century rubbish pits were recorded during excavations at 15-17 Clarendon Centre, located 30m south-east of the site. Many medieval finds and environmental remains were recorded within the rubbishpits and indicated diverse crafts and trades such as metal and glass working, limeburning, antler working and parchment making. Anexcavation at North Bailey House, New Inn Hall Street, located 60m south-west of the site, also record three rubbish pits and a ditch. These features contained domestic waste such as animal bone and pottery and also possible evidence ofindustry, including horn cores and tap slag.

Norman Urban Manor Complex

2.1.17 Documentary evidence and several excavations suggest the presence of an Anglo-Norman manor, dating from the late 11th to early 12th century, located on the FrewinHall site. The complex appears to represent a large property which may have initially belonged to Henry I's Chamberlain Geoffrey de Clinton. The property was owned byHenry de Oxford in the 12th century, and it passed to his son-in-law Geoffrey FitzDurland in the late 12th orearly 13th century. This complex was later acquired by St Mary's College in 1435 (Blair 1978, 48-64).

2.1.18 A vaulted stone cellar which forms the basement of Frewin Hall wassurveyed in the 1970s and appears to date from the period 1090-1150.Itwas probably associated with acomplex of buildings including a hall, chambers, kitchens, stables and outbuildings,and some of these may have been made from

timber.These buildings may haveformed a courtyard arrangement around the principal hall and chamber buildings andmost of these buildings may have been one storey high (Grenville 1997, 69-86).

2.1.19 During the 2021 excavations at Frewin Hall, intercutting medieval pits, structures andoccupation layers were recorded 10-40m south-west of the site.Initial post-excavation work suggests that the earliest of the 11th century features were pits, including gravel pits, slaking pits for lime and others were rubbish pits containing pottery dating from 1075-1250. These may have been associated with the construction of the Norman manor. Fragmentary remains of structures were also recorded, and these were sealed by a garden soil containingpottery dating from 1225-1350. These structures may be associated with theprimary phase of the complex. Several further phases of building construction werenoted including a stone well, stone ovens, occupation layers, stone walls and gravelsurfaces pre-dating the mid-14th century. Another phase of construction dating to 1350-1450 included a north-south aligned stone cellar with a stone kitchen range tothe west. The presence of these structures suggests that the ancillary buildingsassociated with the Norman complex may have extended as far south as Shoe Lane.

St Mary's College

2.1.20 In AD 1435, the Austin Canons were granted the use of Geoffrey FitzDurland's manor house and land, and this became St Mary's College. The approximate extent of the college is shown on the H E Salter's reconstruction of medieval landholdingsin Oxford. A chapel was constructed on the site by 1443, but the construction of therest of the college was slow, and it may have comprised timber buildings initially orthey may have made use of surviving buildings from the manor. In 1518-24, themajority of the college buildings were rebuilt in stone by Cardinal Wolsey (Blair 1978,64-8). By 1541, the college buildings included a hall, a chapel with a library above it,eight chambers, a kitchen, a bakery and a buttery (Chance *et al*. 1978, 368).

2.1.21 Known elements of the collegeinclude a possible stone chapel located 15m north of the site, the extant Anglo-Norman vaulted cellar,and the 16th century gatewayadjacent to New Inn Hall Street. Blair (1978) proposed a layout of the college from theevaluation, building survey and documentary evidence including a cloisteredrangewith a chapel projected from the north-east corner, chambers to the south-west andgardens to the south of the cloister. The plan isnecessarily speculative and does not preclude the existence of college buildings andservice structures at any point across the site. Blair's plan suggests that the site may belocated east of the court, cloister and main buildings of the college. Thismay have been a yard or garden area located adjacent to the easternboundary wall and passage to Cornmarket Street.

2.122 Blair's 1978 plan can be re-evaluated from the results of more recent archaeologicalevidence. In 1993, two north-south aligned stone walls were recorded duringan evaluation located 5m south of the site(Fig. 2). These were 5m apart andtruncated 14th century garden soils. It is possible that these were part of the south-easternpart of the cloister range of the college and 15m east of Blair's prediction. Interestingly, the two walls are in alignment

with the later 16th century range to thenorthandcould suggest that the foundations of the 15th or early 16th centurycollege buildings may have been reused.

2.1.23 During the 2021 excavation, a number of medieval stone structures were recorded including a substantial stone wall located 15m south-west of thesite. This was aligned ENE-WSW and may have formed the outer wall ofthe southern range of the southern cloister. If these results are compared to Blair's plan,it suggests the southern range external wall may have been 5m furthersouth than Blair suggested. Alternatively, the layout of the 15thto mid-16th centurycollege may have been arranged differently to Blair's plan.

Post-Medieval Period (1550–1900)

2.1.24 After the Dissolution, St Mary's College continued as a secular hall and in 1556 itbecame a charity school used by the city. In 1580, Brasenose College took over thesite and they leased the property soon after. The lessee subsequently had permissionto pull down the ruinous buildings. In 1582, the L-shaped building of FrewinHall was constructed over the medieval cellar. In 1625 the property includedthe main house, two stables, a fuel house, a garden and eleven tenements, each withtheir own gardens. This suggests that the grounds associated with the propertyincluded tenements which probably fronted onto St Michael's Street, New Inn Hall Street and Shoe Lane (Blair 1978, 65-72). The chapel associated with the collegeremained extant until 1656, when it was demolished and the materials reusedwithin Brasenose College chapel (Chance *et al.* 1978, 368).

2.1.25 Agas's original (1578) map of Oxford and its later re-engravingby Robert Whittlesley in the early 18th century show the area of the site asgardens located south of or close to an ENE-WSW passage leading from New Inn Hall Street to Cornmarket Street. The re-engraving also suggests there was a north-southboundary through the site.

2.1.26 Both Hollar's map of Oxford (1643) and Loggan's map of Oxford (1675) depict the siteas being located within gardens or a yard and surrounded by boundary walls to the east and south. Loggan's map also shows changes to the streetsadjacent to Frewin Hall, with new residential properties appearing along New Inn HallStreet, Shoe Lane and St Michael's Street.

2.1.27 Taylor's map of Oxford, published 1751, shows the site as part of a yard or garden associated with Frewin Hall, with the northern part used as part of a lane orpassage from Cornmarket Street, later called Frewin Court.

2.1.28 The Oxford Town Plan, published 1878, shows that the site was probably used as an access yard from Frewin Court, with a tree on the eastern and western side ofthe yard. A small building had also been constructed on the southern part of the site.

Modern

2.1.29 There appears to have been little change to the site until the late 1990s,when an additional accommodation block was constructed to the south ofthe north-south range of Frewin Hall and just south of the site. As partof this

development the ground level of the site appears to have been raised by around 0.5m.

2.2 Potential

2.2.1 The 2017 evaluation to the west of the site identified the interface between medieval features and post-medieval soils at a height of approximately 63.35m OD. The upper horizon for 17th/18thcentury remains was established at *c* 63.7m OD. Althoughthe 1993 evaluation appears to have recorded the absolute heights of the archaeological remains incorrectly,if it is accepted that the recordedvaluesshould be increased by 2m, these results wouldalso place the top of the archaeological horizon at between 63.7m and 63.9m OD.

2.2.2 The trenching associated with the GSHP array is designed to be excavated to a depth of 0.8m below the current ground level, with an expected impact depth of 63.74m OD. Based on the previous investigations on the site, it is possible that the base of the trenching may expose the upper horizon ofany 17th-18thcentury remains.

2.2.3 WithinFrewin Hall, thetest pitwill be excavated from an existing floor level of 64.44m OD. TP1 has been located to evaluate the potential impacts of the proposed service duct and will be excavated to a depth of 0.55m below floor level(63.94m OD). Based on the results of the 1993 evaluation, TP1 lieswithin the projected alignmentof the foundations that potentiallyform part of the cloister range associated with St Mary's College. Although this structure had been partially robbed out,it is possible that untruncated elements could be encountered. Butit is most likely that post-medieval floor layers and construction horizons will be observed in these excavations.

2.2.4 The proposed works will alsorequire the floor level in the southernroom of the N-S wing to be reduced by 300mm. Becausethis room overlies a basement, any archaeological deposits in this part of the building will already have been truncated.

3 PROJECT AIMS

3.1 General

3.1.1 The archaeological watching brief on the GSHP trenching array and the archaeological test pitwill aim to gather sufficient information to generate a report on the state of preservation and depths of archaeological remains within the proposed development area.

3.2 Specific aims and objectives

3.2.1 The specific aims and objectives of the watching brief and testpitare:

i. To determine the presence or absence of any archaeological remains which may survive;

ii. To determine or confirm the general nature of any remains present;

iii. To determine or confirm the approximate date or date range of any remains, by means of artefactual or other evidence;

iv. To record the stratigraphic sequence within the areas of investigation, to improve the understanding of survivability and chronology of archaeological deposits within the site;

v. To determine the degree of complexity of any surviving horizontal or vertical stratigraphy;

vi. To assess the associations and implications of any remains encountered with reference to the historic landscape.

3.3 Research Frameworks

3.3.1 The programme of archaeological investigation will be conducted within the general research parameters and objectives defined by the *Solent-Thames Research Framework for the Historic Environment Resource Assessments and Research Agendas* (Hey and Hind 2014) along with pertinent elements of the *Oxford Archaeological Action Plan 2013-2018* (OCC2018) and the *Oxford Urban Archaeological Resource Assessment and Research Agenda* (OCC 2012).

4 PROJECT SPECIFIC EXCAVATION AND RECORDING METHODOLOGY

4.1 Scope of works

4.1.1 The proposed works will comprise two elements of fieldwork including a watching brief and ahand-dug test pit.The archaeological watching will be undertaken to monitor the excavation of the GSHP trenching array in the external courtyard, as indicated on Figure 2.

4.1.2 Test Pit1 will measure 1.5m x 1.5m in plan and will be hand excavated in the locationasshown on Figure 2. Itwill be excavated to a depth of 0.55m below floor level.

4.2 Programme

4.2.1 It is anticipated that thetest pitwill takeup to twodays to excavate, whilst the duration of the watching brief will be dependent on the programme of the contractor undertaking the works. The archaeological teamwillconsist of a Project Supervisor,assisted by a Project Archaeologistas required, under the management of Mark DoddMCIfA.

4.2.2 All fieldwork undertaken by Oxford Archaeology is overseen by the Head of Fieldwork(Oxford), David Score MCIfA.

4.3 Site-specific methodology

4.3.1 A summary of OA's general approach to excavation and recording can be found in Appendix A. Standard methodologies for geomatics and survey, environmental evidence, artefactual evidence and burials can also be found below (Appendices B, C, D and E respectively).

4.3.2 Site-specific methodologies will be as follows:

Archaeological watching brief

i. The watching brief will be maintained during any groundworks with the potential to disturb archaeological deposits or features;

ii. Groundworks will be monitored to the impact depth of the excavations or natural geology, whichever is encountered first;

iii. If archaeological deposits are identified, the site contractor will make sufficient time available for archaeological remains to be properly investigated and recorded;

iv. Significantfeatures will be hand-cleaned and sample excavated;

v. Excavation will be undertaken in accordance with the CIfA's *Standard and Guidance for an Archaeological Watching Brief* (CIfA 2014b);

vi. Provision will be made for collecting environmental samples if appropriate;

vii. Should significant archaeological remains be identified, the attending archaeologist will inform the contractor, client and David Radford OCC as soon as possible so that an appropriate mitigation strategy can be agreed.

Test Pit excavation

4.3.3 The test pitwill be laid out as shown in Figure 2 using the existing structure to measure off and locate it. The existing flagstone floor will then beliftedand any bedding material broken out and removed. If necessary, itslocationmay be subject to minor adjustments as requiredowing to servicesor on-site obstructions.

4.3.4 Following the removal of the existing floor surface,further archaeological excavation will continue by hand. The exposed surface willthenbe sufficiently cleaned to establish the presence/absence of archaeological remains. The deposits will then be excavated in reverse stratigraphical order, removing the latest features first to establish and record 'free-sections' wherever possible. Should *in situ* complex or fragile archaeological remains be encountered in the test pit, consideration will be given to the most appropriate strategy to deal with them. If necessary, complex and fragile finds or structures may be protected and left *in situ* for potential excavation during future phases of work. Whenencountered,features or deposits will be characterised, dated where possible,and sampled if appropriate to meet the aims of the investigation.

4.3.5 The depth of excavation may be required toexceed the parameters outlined in paragraph 4.1.1if significant remains are exposed requiring further understanding. Any variations would be agreed with the client and David Radfordprior to implementation and under no circumstances shall the excavated depth of the excavationsexceed 1m below the current floor level.

4.3.6 Allfeatures and deposits will be issued with unique context numbers, and context recording will be in accordance with established best practice and the OA field manual. Small finds and samples will be allocated unique numbers. Bulk finds will be collected bycontext.

4.3.7 Spoil produced from the excavation will be scanned by a metal detector to enhance finds retrieval.

4.3.8 Digital photos will be taken of any archaeological features, deposits, trenches and the evaluation work in general.

4.3.9 Plans will be produced at anappropriate scale (normally 1:20) with larger scale plans of features produced as necessary. Sections of features and the test pit will be drawn at a scale of 1:20. All section drawings will be located on the plan/s. The absolute height (m OD) of all principal strata and features, and the section datum lines, shall be calculated and indicated on the drawings.

4.3.10 Upon completion of the works and in agreement with David Radford, Archaeologist for OCC, the trenches will be backfilled with the excavated material.

Human remains

4.3.11 All human remains encountered within the evaluation will be assigned context numbers their locations mapped and will be left *in situ* for excavation during future phases of works.

Environmental sampling

4.3.12 Appendix C provides an environmentalsampling strategy. In general, different environmental sampling strategies may be employed according to the perceived importance of the strata under investigation. Bulk samples of 40 litres, if possible, will be taken for flotation for charred plant remains. Bulk samples will be taken from any waterlogged or mineralised deposits present for macroscopic plant remains. Columns for pollen analysis and mollusc samples will be taken if appropriate from any palaeochannel sequences. Other bulk samples for small animal bones and other small artefacts may be taken from appropriate contexts. The sampling process will be constantly reviewed onsite with the advice of Dr Rebecca Nicholson, Head of Environmental Archaeologyat Oxford Archaeology.

4.3.13 Samples will be taken from a series of dated contexts which cover the various phases of activity present on the site. The sampling strategy, including the quantity and type of samples, will be agreed with David Radford during the excavation process once archaeological features and deposits have been revealed and spot dated. The types of features and deposits revealed, their date and their environmental potential will also inform this strategy.

4.3.14 Opportunities will be sought for scientific dating, including secure stratigraphic sequences containing contexts yielding charred plant remains relating the occupation and use of structures.

Artefact recovery

4.3.15 Artefact assemblages will be recovered (by context) by hand to assist in dating the stratigraphic sequences and for obtaining ceramic assemblages for comparison with other sites. The finds will provide an invaluable contribution to the interpretation of the functions and activities taking place on (and off) the site, as well as revealingaspects of trade and economy. All artefacts will be retained from excavated contexts unless they are of recent

origin. In these cases, sufficient of the material will be retained to date and establish the function of the feature.

4.3.16 In certain circumstances where unusual or extremely fragile and delicate objects are found, their recovery may be by appropriate specialists.

Treatment of Treasure

4.3.17 Finds discovered that fall under the statutory definition of Treasure (as defined by the Treasure Act of 1996 and its subsequent revisions) will be reported immediately to the relevant Coroner's Office, the landowner and Oxfordshire County Council. A Treasure Receipt (obtainable from either the FLO or the DCMS website) must be completed and a report submitted to the Coroner's Office and the FLO within 14 days of understanding the find is Treasure. Failure to report within 14 days is a criminal offence. The Treasure Receipt and Report must include the date and circumstances of the discovery, the identity of the finder (put as unit/contractor) and (as exactly as possible) the location of the find.

4.3.18 Where removal of intrinsically valuable objects cannot be affected on the same working day as the discovery, suitable security measures will be taken to protect the finds from theft.

5 PROJECT SPECIFIC REPORTING AND ARCHIVE METHODOLOGY

5.1 Programme

5.1.1 The report will be completed within six weeksof the completion of the fieldwork.

5.1.2 A draft copy of the report will be issued to the client and David Radford for comment prior to being finalised. A digital copy of the report in Adobe Acrobat (.pdf) format will be submitted to David Radford and the client on completion.

5.1.3 A digital copy of the report will also be submitted to Oxfordshire HER and a summary report should be sent to the editors of *South Midlands Archaeology* not later than three months after the end of the calendar year in which the work is undertaken.

5.1.4 Unless otherwise requested, a copy of the final report will be placed on the OA Digital Library after six months of the completion of fieldwork at: https://library.oxfordarchaeology.com/

5.2 Content

5.2.1 The content of this report will be as defined in Appendix F.

5.3 Specialist input

5.3.1 OA has a large pool of internal specialists, as well as a network of external specialists with whom OA have well established working relationships. A general list of these specialists is presented in Appendix G; in the event that additional input should be required, an updated list of specialists can be supplied.

5.4 Archive

5.4.1 The site archive will be deposited withOxfordshire CountyMuseum Service following completion of the project.

5.4.2 A summary of OA's general approach to documentary archiving can be found in Appendix H.

6 HEALTH AND SAFETY

6.1 Roles and responsibilities

6.1.1 The Project Manager, Mark Dodd SMSTS, has responsibility for ensuring that safe systems of work are adhered to on site. He delegates elements of this responsibility to the Project Supervisorwho implements these on a day-to-day basis.

6.1.2 The Director with responsibility for Health and Safety at OA is Dan Poore Tech IOSH (Chief Business Officer).

6.2 Method statement and risk assessment

6.2.1 A summary of OA's general approach to health and safety can be found in Appendix I. A risk assessment has also been undertaken and approved and will be kept on site, along with OA's standard Health and Safety file, which will contain all relevant health and safety documentation.

6.2.2 The Health and Safety file will be available to view at any time.

6.3 Monitoring of works

6.3.1 At least five days' notice of the commencement of the workswill be given to David Radford, Archaeologist for OCC.

6.3.2 Hewill have free access to the site (subject to Health and Safety considerations) and all records to ensure the works are being carried out in accordance with this WSI and all other relevant standards.

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OA, 2021 Frewin Hall, Brasenose College, Oxford – OXFRN21, Phased site summary, Unpublished client report (not yet on the OA library)

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OA STANDARD FIELDWORK METHODOLOGY APPENDICES

The following methods and terms will apply, where appropriate, to all OA fieldwork unless varied by the accompanying detailed Written Scheme of Investigation.

Copies of all OA internal standards and guidelines referred to below are available on request.

APPENDIX A GENERAL EXCAVATION AND RECORDING METHODOLOGY

A.1 Standard methodology – summary

Mechanical excavation

A.1.1 An appropriate mechanical excavator will be used for machine excavation. This will normally be a JCB or 360° tracked excavator with a 1.5 m to 2 m wide toothless ditching bucket. For work with restricted access or working room a mini excavator may be used.

A.1.2 All mechanical excavation will be undertaken under direct archaeological supervision.

A.1.3 All undifferentiated topsoil or overburden of recent origin will be removed down to the first significant archaeological horizon, in successive, level spits.

A.1.4 Following mechanical excavation, all areas that require examination or recording will be cleaned using appropriate hand tools.

A.1.5 Spoil heaps will be monitored in order to recover artefacts to assist in the analysis of the spatial distribution of artefacts. Modern artefacts will be noted but not retained.

A.1.6 After recording, evaluation trenches and test pitswill usually be backfilled with excavated material in reverse order of excavation, and compacted as far as is practicable with the mechanical excavator. Area excavations will not normally be backfilled.

Hand excavation

A.1.7 All investigation of archaeological levels will usually be by hand, with cleaning, examination and recording both in plan and section.

A.1.8 Within significant archaeological levels the minimum number and proportion of features required to meet the aims of the excavation will be hand excavated. Pits and postholes will usually be subject to a 50% sample by volume. Linear features will be sectioned as appropriate. More complex features such as those associated with funerary activity will usually be subject to 100% hand excavation.

A.1.9 In the case of evaluations, it is not necessarily the intention that all trial trenches will be fully excavated to natural stratigraphy, but the depth of archaeological deposits across the site will be assessed. The stratigraphy of a representative sample of the evaluation trenches will be recorded even where no archaeological deposits have been identified. Any excavation, both by machine and by hand, will be undertaken with a view to avoiding damage to

any archaeological features or deposits, which appear to be worthy of preservation in situ.

Recording

A.1.10 Written descriptions will be recorded on proforma sheets comprising factual data and interpretative elements.

A.1.11 Where stratified deposits areencountered a Harris matrix will be compiled during the course of the excavation.

A.1.12 Plans will normally be drawn at 1:100, but on urban or deeply stratified sites a scale of 1:50 or 1:20 will be used. Detailed plans will be at an appropriate scale. Burials will be drawn at scale 1:10 or recorded using geo-referenced digital photography.

A.1.13 The site grid will be accurately tied into the National Grid and located on the 1:2500 or 1:1250 map of the area.

A.1.14 A register of plans will be kept.

A.1.15 Long sections of showing layers will be drawn at 1:50. Sections of features or short lengths of trenches will be drawn at 1:20.

A.1.16 A register of sections will be kept.

A.1.17 Generally, all sections will be tied in to Ordnance Datum.

A.1.18 A full photographic record, illustrating in both detail and general context the principal features and finds discovered will be maintained. The photographic record will also include working shots to illustrate more generally the nature of the archaeological work.

A.1.19 Photographs will be recorded on OA Photographic Record Sheets.

A.2 Relevant industry standards and guidelines

A.2.1 The Chartered Institute for Archaeologists (CIfA) Standard and Guidance notes relevant to fieldwork are:

- Standard and guidance for archaeological field evaluation, 2014 (updated 2020)
- Standard and guidance for archaeological excavation, 2014 (updated 2020)
- Standard and guidance for an archaeological watching brief, 2014 (update 2020)

A.2.2 These will be adhered to at all times.

A.3 Relevant OA manual and other supporting documentation

A.3.1 All fieldwork will be undertaken in accordance with the requirements of the OA Field Manual (ed. D Wilkinson 1992), and the revised OA fieldwork manual (publication forthcoming).

A.3.2 Further guidance is provided to all excavators in the form of the OA 'Fieldwork Crib Sheets -a companion guide to the Fieldwork Manual'. These have been issued ahead of formal publication of the revised Fieldwork Manual.

APPENDIX B GEOMATICS AND SURVEY

B.1 Standard methodology -summary

B.1.1 The aim of OA methodology is to provide comprehensive survey cover of all investigation areas. Additionally, it is designed to provide coverage for any areas, beyond the original scope of the project, which arise as a result of further work. It provides digital plans of all required elements of the project and locates them within an overall grid.

B.1.2 It also maintains all necessary survey data and ensures that the relevant information is copied into the primary record, in order to ensure the integrity of the project archive. Furthermore, it ensures that all core data is securely stored and backed up. It establishes accurate project reference systems utilising a series of control stations and permanent base lines.

B.1.3 The survey will be conducted using a combination of GPS/GNSS (Global Positioning System/Global Navigation Satellite System), hand-measured elements, Total Station Theodolite (TST) survey utilising Reflectorless Electronic Distance Measurement (REDM), or photogrammetry where appropriate.

B.1.4 Before the main work commences, a network of control stations will be laid out encompassing the area as necessary. Control stations will be tied in to known points or existing features using rigorous metric observation. The control network will be set in using a TST to complete a traverse or using techniques as appropriate to ensure sufficient accuracy. A GNSS, or other appropriate method, will be used to orientate the control network to National Grid or other recognised coordinate system.

B.1.5 Control stations will be checked by closed traverse and/or GNSS, as appropriate. The accuracy of these control stations will be accessed on a regular basis and re-established accordingly. Control stations will be recorded on Survey Control Station sheets.

B.1.6 Each control station will be marked with a PGM (Permanent Ground Marker). Witness diagrams will include the full 3-D co-ordinates generated, a sketch diagram and measurements to at least three fixed details, written description of the mark and a photograph of the control point in its environs.

B.1.7 Prior to entry into the field all equipment will be checked, and all pre-survey information will be uploaded onto survey equipment as appropriate. Prior to conducting the survey, the site will be reconnoitred for locations for a viable control network and check the line of sight and any possible hindrance to survey.Daily record sheets will be kept recording daily tasks and conditions as appropriate.

B.1.8 All spatial data will be periodically downloaded uploaded and backed up to our central servers via ftp. It will be cleaned, validated and inspected.

B.1.9 All survey data will be documented on daily survey record sheets as necessary. Information entered on these sheets includes key set up information (Instrument height etc.) as well as daily variables and errors/comments. All survey data will be digitally recorded in a raw format and translated during

the download process this shall allow for any errors to be cross referenced with the daily survey record and corrected accordingly.

B.1.10 A summary of survey work will be produced as needed to access development and highlight problems. Technical support for the survey equipment and download software shall be available at all times. In those instances, where sites are remotely operated, all digital data will be backed up regularly via ftp to Oxford on a regular basis.

B.1.11 A site plan will initially be created by a rapid survey of relevant archaeological features by mapping their extent using a combination of TST and GNSS. This will form the basis for deciding excavation strategy and will be updated as the excavation clarifies the extent of, and relationships between, archaeological features.

B.1.12 Areas of complex stratigraphy will be hand drawn or recorded by photogrammetry as appropriate. Where hand drawn, at least two Drawing Points (DPs) will be set in as a baseline and measurements taken off this by tape and offset. The hand drawn plans will be referenced to the digitally captured pre-site plan by measuring in the DPs with a TST or GNSS. These hand drawn elements will then be scanned in, geo-referenced using the DPs as reference points and digitised following OA's digitising protocols. For further details on hand planning procedure please refer to the fieldwork guidelines.

B.1.13 Photogrammetry may also be used to record standing structures or burials. This will be carried out in line with Standard OA procedures for photogrammetry.

B.1.14 Survey data recorded in the field will be downloaded using appropriate downloading software, and saved as an AutoCAD Map DWG file, or an ESRI Shapefile. These files will be regularly updated and backed up with originals being stored on an OA server in Oxford.

B.1.15 All drawings will be composed of closed polygons, polylines or points in accordance with the requirements of GIS construction and OA Geomatics protocols. Once created, additional GIS/CAD work will normally be carried out at the local OA central office or at on-site remote locations when appropriate. Support for all GIS/CAD work will be available from OA's Oxford Office during normal office hours. The aim of the GIS/CAD work is to produce workable draft plans, which can be produced as stand-alone products, or can be readily converted to GIS format. Any hand-drawn plans will be scanned and digitised on site in the first instance. Subsequent plans will be added to the main drawing as it develops.

B.1.16 All plan scans will be numbered according to their plan site number. Digital plans will be given a standard new plan number taken out from the site plan index.

B.1.17 Information (metadata) on all other digital files will be created and stored as appropriate. At the end of the survey all data recorded will be made available for archiving purposes.

B.2 Relevant industry standards and guidelines

B.2.1 Historic England, 2017 Understanding the Archaeology of Landscapes A Guide to Good Recording Practice

B.2.2 Historic England, 2015 Metric Survey Specifications for Cultural Heritage (3rd edn)

B.2.3 Historic England, 2016 Understanding Historic Buildings: A Guide to Good Recording Practice

B.2.4 Historic England, 2017 Photogrammetric Applications for Cultural Heritage: Guidance for Good Practice

B.3 Relevant OA manual and other supporting documentation

B.3.1 OA South Metric Survey, Data Capture and Download Procedures

B.3.2 OA South Digitising Protocols

B.3.3 OA South GIS Protocols

B.3.4 These will be superseded by the OA South Geomatics Manual (in progress).

APPENDIX C ENVIRONMENTAL EVIDENCE

C.1 Standard methodology – summary

C.1.1 Different environmental and geoarchaeological sampling strategies may be employed according to established research targets and the perceived importance of the strata under investigation. Where possible an environmental specialist(s) will visit the site to advise on sampling strategies. Sampling methods will follow guidelines produced by Historic England and Oxford Archaeology. A register of samples will be kept. Specialists will be consulted where non-standard sampling is required (e.g. TL, OSL or archaeomagnetic dating) and if appropriate will be invited to visit the site and take the samples.

C.1.2 Geoarchaeological sampling methods are site specific, and methodologies will be designed in consultation with the geoarchaeological manager on a site by site basis.

C.1.3 Bulk soil samples, where possible of 40 litres or 100% of a deposit if less is available, will be taken from potentially datable features and layers for flotation for charred plant remains and for the recovery of small bones and artefacts. Larger soil samples (up to 100L) may be taken for the complete recovery of animal bones, marine shell and small artefacts from appropriate contexts. Smaller bulk samples (general biological samples) of 10-20 litres will be taken from any waterlogged deposits present for the recovery of macroscopic plant remains and insects. Series of incremental 2L samples may be taken through buried soils and deep feature fills for the recovery of snails and/or waterlogged plant remains, depending on the nature of the stratigraphy and of the soils and sediments. Columns will be taken from buried soils, peats and waterlogged feature fills for pollen and/or phytoliths, diatoms, ostracods and foraminifera if appropriate. Soil samples will be taken for soil investigations (particle size, organic matter, bulk chemistry, soil

micromorphology etc.) and possibly for metallurgical analysis in consultation with the appropriate specialists.

C.1.4 Bulk samples from dry deposits will be processed by standard water flotation using a modified Siraf-style machine and meshes of 0.25mm (flot) and 0.5 or 1mm depending on sediment type and like modes of preservation (residue). Heavy residues will be wet sieved, air dried and sorted. Samples taken exclusively for the recovery of bones, marine shell or artefacts will be wet sieved to 2mm. Waterlogged samples (1L sub-sample) and snail samples (2L) will be processed by hand flotation with flots and residues collected to 0.25mm (waterlogged plants) and 0.5mm (snails) respectively; these flots and residues will be sorted by the specialist. Samples specifically taken for insects, pollen, other microflora and microfauna, metallurgy and soil analysis will be submitted as whole earth to the appropriate specialists or processed following their instructions.

C.2 Relevant industry standards and guidelines

C.2.1 Historic England, 2010 Waterlogged Wood: Guidelines on the recording, sampling, conservation and curation of waterlogged wood.

C.2.2 Historic England, 2018 Waterlogged Organic Artefacts: Guidelines on their Recovery, Analysisand Conservation.

C.2.3 Historic England, 2011 Environmental Archaeology. A guide to the theory and practice of methods, from sampling and recovery to post excavation, (2nd ed)

C.2.4 Historic England, 1998 Dendrochronology: Guidelines on Producing and Interpreting Dendrochronological Dates (revision due 2021).

C.2.5 University of Bradford, 2019 Archaeomagnetism: Magnetic Moments in the Past https://www.brad.ac.uk/archaeomagnetism/

C.2.6 Historic England, 2008 Luminescence Dating. Guidelines on Using Luminescence Dating in Archaeology (revision due 2020).

C.2.7 Historic England, 2008 Guidelines for the Curation of Waterlogged Macroscopic Plant and Invertebrate Remains (currently being revised).

C.2.8 Historic England, 2015 Archaeometallurgy. Guidelines for Best Practice.

C.2.9 Historic England, 2015 Geoarchaeology. Using Earth Sciences to Understand the Archaeological Record.

C.2.10 Historic England, 2017 Organic Residue Analysis and Archaeology.

C.2.11 Baker, P and Worley, F, 2019 Animal Bones and Archaeology: Recovery to archive. Historic England, London

C.2.12 Bayliss, A and Marshall, P, 2022 Radiocarbon Dating and Chronological Modelling: Guidelines and Best Practices, Historic England, London

C.3 Relevant OA manual and other supporting documentation

C.3.1 Oxford Archaeology 2017. Environmental Sampling Guidelines, 4th ed.

APPENDIX D ARTEFACTUAL EVIDENCE

D.1 Standard methodology -summary

D.1.1 Before a site begins arrangements concerning the finds will be discussed with the Finds Team Leader. Information will be provided by the project manager about the nature of the site, the expected size and make-up of the finds assemblage and any site specific finds retrieval strategies. On-site requirements will be discussed and a conservator appointed who can be called on to make site visits if required. Special requirements regarding particular categories of material will be raised at this early stage for instance the likelihood of recovering assemblages of waterlogged material, large timbers, quantities of structural stone or ceramic building material. Specialists may be required to visit sites to discuss retrieval strategies.

D.1.2 The project manager will supply the Finds Team Leader with contact details of the landowner of the site so that consent to deposit any finds resulting from the investigation can be sought.

D.1.3 The on-site retrieval, lifting and short term packaging of bulk and small finds will follow the detailed guidelines set out in the OA Finds Manual (sections 2 and 3), First Aid for Finds and the UKIC conservation guidelines No.2.

D.1.4 All finds recovered from site will be transported to an OA regional office for processing; local sites will return finds at the end of each day, away based sites at the end of each week. Special arrangements can be discussed for certain sites with the Team Leader before the start of a project. Larger long running sites may in some instances set up on-site processing units to deal with the material from a particular site.

D.1.5 All finds qualifying as Treasure will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act (1996), and the Treasure (Designation) Order 2002. Where removal cannot be effected on the same working day as the discovery, suitable security measures will be taken to protect the finds from theft.

D.1.6 Each box of finds will be accompanied by a finds context checklist itemising the finds within each box. The number of bags of finds from each context and individual small find from each context will be recorded. A member of the processing team will check the list when it arrives in the department. There are separate forms for finds recovered from fieldwalking.

D.1.7 The processing programme is reviewed on a weekly basis and priorities are worked out after discussions with the Fieldwork Team Leader and the Post-excavation Team Leader. Project managers willkeep the Finds Team Leader informed of any pressing deadlines that they are aware of. All finds from evaluations are dealt with as a matter of priority.

D.1.8 All bulk finds are washed (where appropriate), marked, bagged and boxed by the processing team according to the guidelines set out in section 4 and 5 of the OA Finds Manual, First-aid for finds and the UKIC guidelines No.2. They must also take into account the requirements of the receiving museum. Primary data recording count and weight of fragments by material from each context is recorded on the site database.

D.1.9 Unstable and sensitive objects are recorded onto the database and then packaged and stored in controlled environments according to their individual requirements. The advice of a conservator will besought for sensitive objects in need of urgent conservation. All metalwork will be x-rayed prior to assessment (and to meet the requirements of most receiving museums).

D.1.10 Finds recovered from the environmental sample processing will be incorporated into the main assemblage and added to the database.

D.1.11 On completion of the processing and data entry a finds file for each archaeological investigation will be produced, a summary of which is available for the project manager. The assemblage is allocated an OA number for storage purposes. Bulk finds are stored on a roller racking system, metals in a secure controlled storage and organic finds are refrigerated where possible.

D.1.12 The movement of finds in and out of the storage areas is strictly monitored and recorded. Carbon copy transit forms exist to record this information. Finds will not be removed from storage without the prior knowledge of the Finds Team Leader.

D.1.13 Finds information summarised in the finds compendium is used to assess the finds requirements for the post excavation stages of the project. The Team Leader holds a list of all specialists used by OA (see below) both internal and external.

D.1.14 On completion of the post excavation stage of the project the team prepares the finds assemblage for deposition with the receiving museum. Discussions will be held with the museum, the excavator and the Finds Team Leader to finalise any selection, retention or discard policy. Most museums issue strict guidelines for the preparation of archives for deposition with their individual labelling, packaging and recording requirements.

D.2 Relevant industry standards and guidelines

D.2.1 CIfA, 2014 (updated 2020) Standard and guidance for the collection, documentation, conservation and research of archaeological materials

D.2.2 Society of Museum Archaeologists, 1993 Selection, retention and dispersal of Archaeological Collections. Download available via http://www .socm usarch.org.uk/publica.htm)

D.2.3 UKIC, 1983 Packaging and Storage of Freshly-Excavated Artefacts from Archaeological Sites. Conservation Guidelines No.2. Archaeology Section, United Kingdom Institute for Conservation.

D.2.4 UKIC, 1988 Excavated Artefacts and Conservation: UK sites Revised Edition. Conservation Guidelines No.1. Archaeology Section, United Kingdom Institute for Conservation.

D.2.5 Watkinson, D E & Neal, V, 1998 First Aid for Finds (3rd edition). RESCUE & UKIC

D.3 Relevant OA manual and other supporting documentation

D.3.1 Allen, L, and Cropper, C (internal publication only) Oxford Archaeology Finds Manual.

APPENDIX E HUMAN REMAINS

E.1 Standard methodology -summary

E.1.1 Human remains will not be excavated without a relevant licence/faculty and, where applicable (for example, a post medieval cemetery), a risk assessment from the local environmental officer.

E.1.2 All human remains will be treated with due care and regard to the sensitivities involved, and will be screened from the public throughout the course of the works.

E.1.3 Excavation will be undertaken in accordance with CIfA (Roberts and McKinley 1993), Historic England (2018), the Advisory Panel on the Archaeology of Burials in England (APABE, 2015, 2017) and British Association of Biological Anthropology and Osteoarchaeology Code of Practice (2019) and Code of Ethics (2019).For crypts and post-medieval burials, the recommendations set out by the CIfA (Cox 2001) and by the Association of Diocesan and Cathedral Archaeologists and APABE (2010) are also relevant.

E.1.4 In accordance with recommendations set out in the Historic England and Church of England (2005) and updated by the Advisory Panel on the Archaeology of Burials in England (2017), skeletons will not be excavated beyond the limits of the trench, unless they are deemed osteologically or archaeologically important.

E.1.5 Where any soft tissue survives and/or materials (for example, inner coffins, mattresses and other paddings) soaked in body liquor, no excavation or handling of the remains will take place until an appropriate risk assessment has been undertaken. Relevant protocols (i.e. Cox 2001) for their excavation, recording and removal will be adhered to.

E.1.6 OA does not excavate or remove modern burials (those less than 100 years old) and does not remove or open sealed lead coffins. Appropriate PPE (e.g. chemical suit, latex gloves) will be worn by all staff when working with lead coffins.

E.1.7 Graves and their contents will be hand excavated in plan. Each component (for example, skeleton, grave cut, coffin (or remains of), grave fill) will be assigned a unique context number from a running sequence. A group number will also be assigned to all of these, and small finds numbers to features such as coffin nails, hobnails and other grave goods (as appropriate).

E.1.8 Soil samples will be normally taken during the excavation of inhumations, usually from the region of the skull, chest, right hand, left hand, abdomen and pelvis, rightfoot and left foot. Infants (circa. less than 5 years) will normally be recovered as bulk samples. Soil samples will also be taken from graves that appear to contain no human bone.

E.1.9 Burials (including the skeleton, cremation, coffin fittings, coffin, urn, grave goods / other) will be recorded by photographic and written record using specialised pro forma context sheets, although these records may only include schematic representations of the location and position of the skeletons, depending on the nature and circumstances of the burial.

E.1.10 Where digital imaging is used it will be done in accordance with the British Association of Biological Anthropology and Osteoarchaeology Recommendations on the Ethical Issues Surrounding 2D and 3D Digital Images of Human Remains (2019).

E.1.11 Where necessary, hand drawn plans (usually at 1:10, sometimes 1:5) will be made, especially of contexts where required details cannot be adequately seen using photography (for example, urned cremations; undisturbed hob nails).

E.1.12 Levels will be taken. For inhumations this will be on the skull, pelvis and feet as a minimum.

E.1.13 Human remains that are exhumed will be bagged and labelled according to skeletal region and carefully packed into suitable containers (for example, acid free cardboard boxes) and transported to a suitable storage location. Any associated coffins and coffin fittings will be contained with the human remains wherever possible.

E.1.14 Unurned cremations will not usually be half sectioned, but excavated in spits and/or quadrants (i.e. largedeposits or spreads), or recovered as a bulk sam ple.

E.1.15 Wherever possible, urned cremations will be carefully bandaged, recovered whole and will be excavated in spits in the laboratory, as per the recommendations of McKinley (2004, 2017).

E.1.16 Unless deemed osteologically or archaeologically important disarticuled bone / charnel will be collected and reserved for re-burial if immediate re-internment as close to its original position is not practicable. In some instances, a rapid scan of this material may be undertaken by a qualified osteologist, if deemed relevant.

E.1.17 If undisturbed, pyre sites will normally be excavated in quadrants, at the very least in 0.5 m blocks of 0.5 m spits.

E.1.18 Pyre debris dumps will be half sectioned or quadranted and will be subject to 100% sampling.

E.1.19 Wooden and lead coffins and any associated fittings, including fixing nails will be recorded on a pro forma coffin recording sheet. All surviving coffin fittings will be recorded by reference to Reeve and Adams (1993) and the unpublished master catalogue that is being compiled by OA. Where individual types cannot be paralleled, they will be drawn and/ or photographed and assigned a style number. Biographical details obtained from legible departum plate inscriptions will be recorded and further documentary research will be made.

E.1.20 Funerary structures, such as brick shaft graves and/or vaults will be recorded by photogrammetry or hand-drawn at a scale of 1:10 or 1:20, as appropriate. Location, dimensions and method of construction will be noted, and the structure added to the overall trench plan.

E.1.21 Memorials, including headstones, revealed within the areas of development will be recorded irrespective of whether they are believed to be in situ.

E.1.22 Where required, memorials will be accorded an individual context number and will also be included as part of the grave group, if the association with a burial is clear.

E.1.23 Memorials will be recorded on pro-forma context sheets, based on and following the guidelines set out by Mytum (2002), and will include details of:

- Shape
- Dimensions
- Type of stone used
- Condition, completeness and fragmentation of stones, no longer in original positions
- Iconography (an illustration may best describe these features)
- Inscription (verbatum record of inscription; font of the lettering)
- Stylistic type

E.2 Relevant industry standards and guidelines

E.2.1 Advisory Panel on the Archaeology of Burials in England, 2013 Science and the Dead. A guideline for the destructive sampling of archaeological human remains for scientific analysis. English Heritage Publishing.

E.2.2 Advisory Panel on the Archaeology of Burials in England, 2017 Guidance for Best Practice for the Treatment of Human Remains Excavated from Christian Burial Grounds in England

E.2.3 Advisory Panel on the Archaeology of Burials in England, 2015 Large Burial Grounds. Guidance on sampling in archaeological fieldwork projects

E.2.4 Association of Diocesan and Cathedral Archaeologists and APABE, 2010 Archaeology and Burial Vaults. A guidance note for churches. Guidance Note 2

E.2.5 British Association of Biological Anthropology and Osteoarchaeology. 2019a Code of Practice (http://www.babao.org.uk/index/ethics-and-standards)

E.2.6 British Association of Biological Anthropology and Osteoarchaeology. 2019b Code of Ethics (http://www.babao.org.uk/index/ethics-and-standards)

E.2.7 British Association of Biological Anthropology and Osteoarchaeology, 2019c Recommendations on the Ethical Issues Surrounding 2D and 3D Digital Images of Human Remains (http://www.babao.org.uk/index/ethics-and-standards)

E.2.8 Cox, M, 2001 Crypt archaeology. An approach. CIfA Paper No. 3

E.2.9 English Heritage, 2002 Human Bones from Archaeological Sites. Guidelines for producing assessment documents and analytical reports

E.2.10 Historic England, 2018 The Role of the Human Osteologist in an Archaeological Fieldwork Project. Swindon, Historic England

E.2.11 McKinley, J, and Roberts, C, 1993 Excavation and post-excavation treatment of cremated and inhumed human remains, CIfA Technical Paper No. 13

E.2.12 McKinley, J, 2004 Compiling a skeletal inventory: cremated human bone. In Brickley, M, and McKinley, J (eds) Guidelines to the Standardsfor Recording Human Remains, CIfA Technical Paper No. 7. 9-13

E.2.13 McKinley, J, 2017 Compiling a skeletal inventory: cremated human bone. In Mitchell P, and Brickley, M (eds) Updated Guidelines to the Standards for Recording Human Remains, CIfA 14-19

E.2.14 Mitchell P, and Brickley, M (eds) Updated Guidelines to the Standards for Recording Human Remains, CIfA 2017

E.2.15 Mytum, H, 2000 Recording and Analysing Graveyards. CBA Handbook No. 15

E.2.16 Reeve, J, and Adams, M, 1993 The Spitalfields Project. Volume I – The Archaeology Across the Styx. CBA Research Report No. 85

E.2.17 The Human Tissue Act 2004

E.3 Relevant OA manual and other supporting documentation

E.3.1 Loe, L, 2008 The Treatment of Human Remains in the Care of Oxford Archaeology. Oxford Archaeology internal policy document

E.3.2 Oxford Archaeology 2018 *Fieldwork Manual Human Remains* unpublished

APPENDIX F REPORTING

F.1 Standard methodology -summary

F.1.1 For Watching Briefs and Evaluations, the style and format of the report will be determined by OA, but will include as a minimum the following:

- Alocation plan of trenches and/or other fieldwork in relation to the proposed development.
- Plans and sections of features located at an appropriate scale.
- A section drawing showing depth of deposits including present ground level with Ordnance Datum, vertical and horizontal scale.
- A summary statement of the results.
- A table summarising the features, classes and numbers of artefacts contained within, spot dating of significant finds and an interpretation.
- A reconsideration of the methodology used, and a confidence rating for the results.
- An interpretation of the archaeological findings both within the site and within their wider landscape/townscape setting.

F.1.2 For Excavations, a Post-Excavation Assessment and Project Design will generally be prepared, as prescribed by Historic England Management of Research Projects in the Historic Environment (MoRPHE) 2015, Section 2.3. This will include a Project Description containing:

- A summary description and background of the project.

- A summary of the quantities and assessment of potential for analysis of the information recovered for each category of site, finds, dating and environmental data. Detailed assessment reports will be contained within appendices.
- An explicit statement of the scope of the project design and how the project relates to any other projects or work preceding, concurrent with or following on from it.
- A statement of the research aims of the fieldwork and an illustrated summary of results to date indicating to what extent the aims were fulfilled.
- A list of the project aims as revised in the light of the results of fieldwork and the current post-excavation assessment process.

F.1.3 A section on Resources and Programming will also be produced, containing:

- A list of the personnel involved indicating their qualifications for the tasks undertaken, along with an explanation of how the project team will communicate, both internally and externally.
- A list of the methods which will be used to achieve the revised research aims.
- A list of all the tasks involved in using the stated methods to achieve the aims and produce a report and research archive in the stated format, indicating the personnel and time in days involved in each task. Allowance should be made for general project-related tasks such as monitoring, management and project meetings, editorial and revision time.
- A cascade or Gantt chart indicating tasks in the sequence and relationships required to complete the project. Due allowance will be made for leave and public holidays. Time will also be allowed forthe report to be read by a named academic referee as agreed with the County Archaeological Officer, and by the County Archaeological Officer.
- A report synopsis indicating publisher and report format, broken down into chapters, section headings and subheadings, with approximate word lengths and numbers and titles of illustrations per chapter. The structure of the report synopsis should explicitly reflect the research aims of the project.

F.1.4 The Project Design will be submitted to the County Archaeological Officer or equivalent for agreement.

F.1.5 Under certain circumstances (e.g. with very small mitigations), and as agreed with the County Archaeological Officer or equivalent, a formal Assessment and Project Design may not be required and either the project will continue straight to full analysis, or a simple Project Proposal (MoRPHE 2015 Section 2.1) will be produced prior to full analysis. This proposal may include:

- A summary of the background to the project
- Research aims and objectives

- Methods statement outlining how the aims and objectives will be achieved
- An outline of the stages, products and tasks
- Proposed project team
- Estimated overall timetable and budget if appropriate.

F.1.6 Once the post-excavation Project Design or Project Proposal has been accepted, the County Archaeological Officer or their appointed deputy will monitor the progress of the post-excavation project at agreed points. Any significant variation in the project design will be agreed with the County Archaeological Officer.

F.1.7 The results of the project will be published in an appropriate archaeological journal or monograph. The appropriate level of publication will be dependent on the significance of the fieldwork results and will be agreed with the County Archaeological Officer. An OASIS (Online Access tothe Index of Archaeological Investigations) form will be completed for each project as per Historic England guidelines.

F.2 Relevant industry standards and guidelines

F.2.1 Oxford Archaeology (OA) adheres to the national standards in post-excavation procedure as outlined in Historic England's Management of Research Projects in the Historic Environment (MoRPHE; HE 2015). Furthermore, all post-excavation projects take into account the appropriate regional research frameworks as well as national research agendas such as the Framework for Historic Environment Activities & Programmes in Historic England (SHAPE; EH 2008).

APPENDIX G LIST OF SPECIALISTS REGULARLY USED BY OA

G.1.1 Below are two tables, one containing 'in-house' OA specialists, and the other containing a list of external specialists who are regularly used by OA.

Internal archaeological specialists used by OA

Specialist	Specialism	Qualifications
John Cotter	Medieval and Post Medieval pottery, Clay Pipe and CBM	BA (Hons), MCIfA
Dr Alex Davies	Prehistoric Pottery	BA (Hons), MA, PhD, ACIfA
Edward Biddulph	Roman Pottery	BA (Hons), MA, MCIfA
Kate Brady	Roman Pottery	BA, ACIfA
Cynthia Poole	CBM and Fired Clay	BA (Hons), MSc
Leigh Allen	Metalwork and worked bone	BA (Hons), PGDip
Anni Byard	Metalwork, coins and glass	MSx, MCIfA
Dr Ruth Shaffrey	Worked stone artefacts	BA, PhD, MCIfA
Dr Rebecca Nicholson	Fish and Bird Bone	BA (Hons), MA, D.Phil, MCIfA, FSA Scot

Specialist	Specialism	Qualifications
Ian Smith	Animal Bone	BA (Hons), MSc, PCIfA
Dr Martyn Allen	Animal Bone	BA (Hons), MA, PhD
Adrienne Powell	Animal Bone	BA (Hons), MA
Dr Denise Druce	Charred plant remains, charcoal and pc	BA (Hons), PhD, MCIfA
Sharon Cook	Charred plant remains	BSc, MSc, ACIfA
Elizabeth Stafford	Geoarchaeology and land snails	BA (Hons), MSc
Carl Champness	Geoarchaeology	BA (Hons), MSc, ACIfA
Nicola Scott	Archaeological archive deposition	BA (Hons Dunelm)
Mike Donnelly	Flint	BSc, MCIfA
Dr Louise Loe	Human Bone	BA PhD, MCIfA, BABAO
Helen Webb	Human Bone	BSc, MSc, MCIfA, BABAO
Mark Gibson	Human Bone	BA, MSc, ACIfA, BABAO
Dr Lauren McIntyre	Human Bone	BSc, MSc, PhD, MCIfA, BABAO
Zoe Ui Choileain	Human Bone	Pg Dip, MA, Msc, BABAO
Natasha Dodwell	Human Bone	BA, MSc, BABAO

External archaeological specialists regularly used by OA

Specialist	Specialism	Qualifications
Lynne Keys	Slag	BA (Hons)
Quita Mould	Leather	BA, MA
Penelope Walton Rogers, The Anglo Saxon Laborato	Identification of Medieval Textiles	FSA, Dip.Acc
Dana Goodburn-Brown	Conservation	BSc (Hons), BA, MSc
Steve Allen, York Archaeological Trust	Conservation	BA, MA, MAAIS
Dr Richard Macphail	Soils, especially Micromorphology	BA (Hons), MSc, PhD
Dana Challinor	Charcoal	MA, MSc
Dr Nigel Cameron	Diatoms	BSc, MSc, PhD
Dr David Smith	Insects	BA (Hons), MA, PhD
Professor Adrian Parker	Phytoliths and pollen	BSc (Hons), D.Phil
Dr David Starley	Metalworking Slag	BSc (Hons), PhD
Wendy Carruthers	Charred and waterlogged plant remains	BA (Hons)
Dr John Whittaker	Ostracods and Foraminifera	BA (Hons), PhD
Dr John Crowther	Soil Chemistry	MA, PhD
Dr Martin Bates	Geoarchaeology	BSc, PhD
Dr Dan Miles	Dendrochronology	D.Phil, FSA

Specialist	Specialism	Qualifications
Dr Jean-Luc Schwenninge	Optically Stimulated Luminescence Dating	PhD
Dr David Higgins	Clay Pipe	BA, PhD, MCIfA
Dr Hugo Anderson-Wym ark	Flint	BSc, PhD, FSA Scot, MCIfA
Dr Damian Goodburn-Brown	Ancient Woodwork	BA, PhD
Dr David Dungworth	Archaeometallurgy and Glassworking	BA (Hons), PhD

APPENDIX H DOCUMENTARY ARCHIVING

H.1 Standard methodology – sum m ary

H.1.1 The documentary archive constitutes all the written, drawn, photographic and digital records relating to the set-up, fieldwork and post-excavation phases of the project. This documentary archive, together with the artefactual and environmental ecofact archive collectively forms the record of the site. The report is part of the documentary archive, and the archive must provide the evidence that supports the conclusions of the report, but the archive may also include data which exceeds the limitations of research parameters set down for the report and which could be of significant value to future researchers.

H.1.2 At the outset of the project OA Archive manager will contact the relevant local receiving museum or archive repository to notify them of the imminent start of a new fieldwork project in their collecting area. Relevant local archiving guidelines will be observed and site codes, which integrate with the receiving repository, will be agreed for labelling of archives and finds.

H.1.3 Where there is currently no receiving museum for the project archive, although responsibility for the archive ultimately lies with the client, OA will hold the archive on their behalf for a period of up to 3 years after completion of the report, after which time (inthe event that a suitable depository has not been secured) provision for further storage of the archive will be made in agreement with Oxford Archaeology, the client and the relevant planning archaeologist.

H.1.4 During the course of the project the Archive team will assist the Project Manager in the management of the archive including the cataloguing and development technique suitable for photographic archive requirements.

H.1.5 The hard copy site archive will be security copied by scanning to PdFA and a copy of this will be housed on the OA Archive Server. A full digital copy of the archive, including scanned hard copy and born digital data, will be deposited with and made publicly available on-line through the ADS. A further copy will be maintained on the OA serverand if requested a copy on disk will also be sent to the receiving museum with the hard copy. This will act as a safeguard against the accidental loss and the long-term degeneration of paper records and photographs.

H.1.6 Born digital data will only be printed to hard copy for the receiving museum where practical. Archive elements that need maintaining in digital form will be sent to ADS in accordance with Arches Standard and ADS guidelines. A copy will be sent to the receiving museum by CD and back-up copies will be stored on the OA digital network. In most cases a digital copy of the report will be included in the OASIS project library hosted by ADS.

H.1.7 Prior to deposition the Archive team will contact the museum regarding the size and content of the archive and discuss any retention and dispersal policies which may be applicable in line with local and SMA Guidelines ' Selection, Retention & Dispersal of Archaeological Collections' 1993.

H.1.8 The site archive will then be deposited with the relevant receiving museum or repository at the earliest opportunity unless further archaeological work on the site is expected. The documentary archive will include correspondence detailing landowner consent to deposit the artefacts and any copyright licences in accordance with the receiving museum guidelines. Deposition charges will be required from the client as part of the project costs, but the level of the fee is set by the receiving body and may be subject to change during the lifespan of the project. Changes to archiving charges beyond OA's control will be passed across to the client.

H.1.9 Oxford Archaeology will retain full copyright of any commissioned reports, tender documents, or other project documents, under the Copyright, Designs and Patents Act 1988 with all rights reserved; excepting that it will provide the receiving repository or museum for the archive with a full licence for use to the client in all matters directly relating to the project as described in the Written Scheme of Investigation, and in line with the relevant receiving body guidelines.

H.1.10 OA will advise the receiving repository or museum for the archive of 3rdparty materials supplied in the course of projects which are not OA's copyright.

H.1.11 OA undertakes to respect all requirements for confidentiality about the client's proposals provided that these are clearly stated. It is expected that such conditions shall not unreasonably impede the satisfactory performance of the services required. Archaeological findings and conclusions can be kept confidential for a limited period but will be made publicly available in line with the above procedure either after a specified time period agreed with the client at the outset of the project, or where no such period is agreed, after a reasonable period of time. It is expected that clients respect OA's general ethical obligations not to suppress significant archaeological data for an unreasonable period.

H.2 Relevant industry standards and guidelines

H.2.1 At the end of the project the site archive will be ordered, catalogued, labelled and conserved and stored according to the following national guidelines:

H.2.2 EAC, 2014 A Standard and Guide to Best Practice for Archaeological Archiving in Europe (EAC Guidelines 1)

H.2.3 CIfA, 2014 (Updated 2020) Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives

H.2.4 Brown, D, 2011 Archaeological Archives A Guide to Best Practice in Creation, Compilation, Transfer and Curation. AAF

H.2.5 UKIC, 1990 Guidelines for the preparation of excavation archives for long-term storage

H.2.6 SMA, 2020 Standards and Guidance in the Care of Archaeological Collections

H.2.7 Local museum guidelines such as Museum of London Guidelines: (http://www.museumoflondonarchaeology.org.uk/English/ArchiveResearch/DeposResource) will be adopted where appropriate to the archive collecting area.

H.2.8 The site archive will be prepared to at least the minimum acceptable standard defined in Management of Archaeological Projects 2, Historic England 1991.

H.3 Relevant OA manual and other supporting documentation

H.3.1 The OA Archives Policy.

APPENDIX I HEALTH AND SAFETY

I.1 Standard Methodology -summary

I.1.1 All work will be undertaken in accordance with the current OA Health and Safety Policy, the OA Site Safety Procedures Manual, a site-specific Risk Assessment and, if required, Safety Plan or Method Statement. Copies of the site-specific documents will be submitted to the client or their representative for approvals prior to mobilisation, and all relevant H and S documentation will be available on site at all times. The Health and Safety documentation will be read in conjunction with the project WSI.

I.1.2 Where a project falls under the Construction (Design and Management) Regulations (2015), all work will be carried out in accordance with the Principal Contractor's Construction Phase Plan (CPP).

I.2 Relevant industry standards and guidelines

I.2.1 All work will be carried out according to the requirements of all relevant legislation and guidance, including, but not exclusively:

I.2.2 The Health and Safety at Work Act (1974).

I.2.3 Management of Health and Safety at Work Regulations(1999).

I.2.4 Manual Handling Operations Regulations 1992 (as amended).

I.2.5 The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (2013).

I.2.6 The Construction (Design and Management) Regulations (2015).

I.2.7 Relevant OA manual and other supporting documentation

I.2.8 The OA Health and Safety Policy.

I.2.9 The OA Site Safety Procedures Manual.

I.2.10 The OA Risk Assessment templates.

I.2.11 The OA Method Statement template.

I.2.12 The OA Construction Phase Plan template.

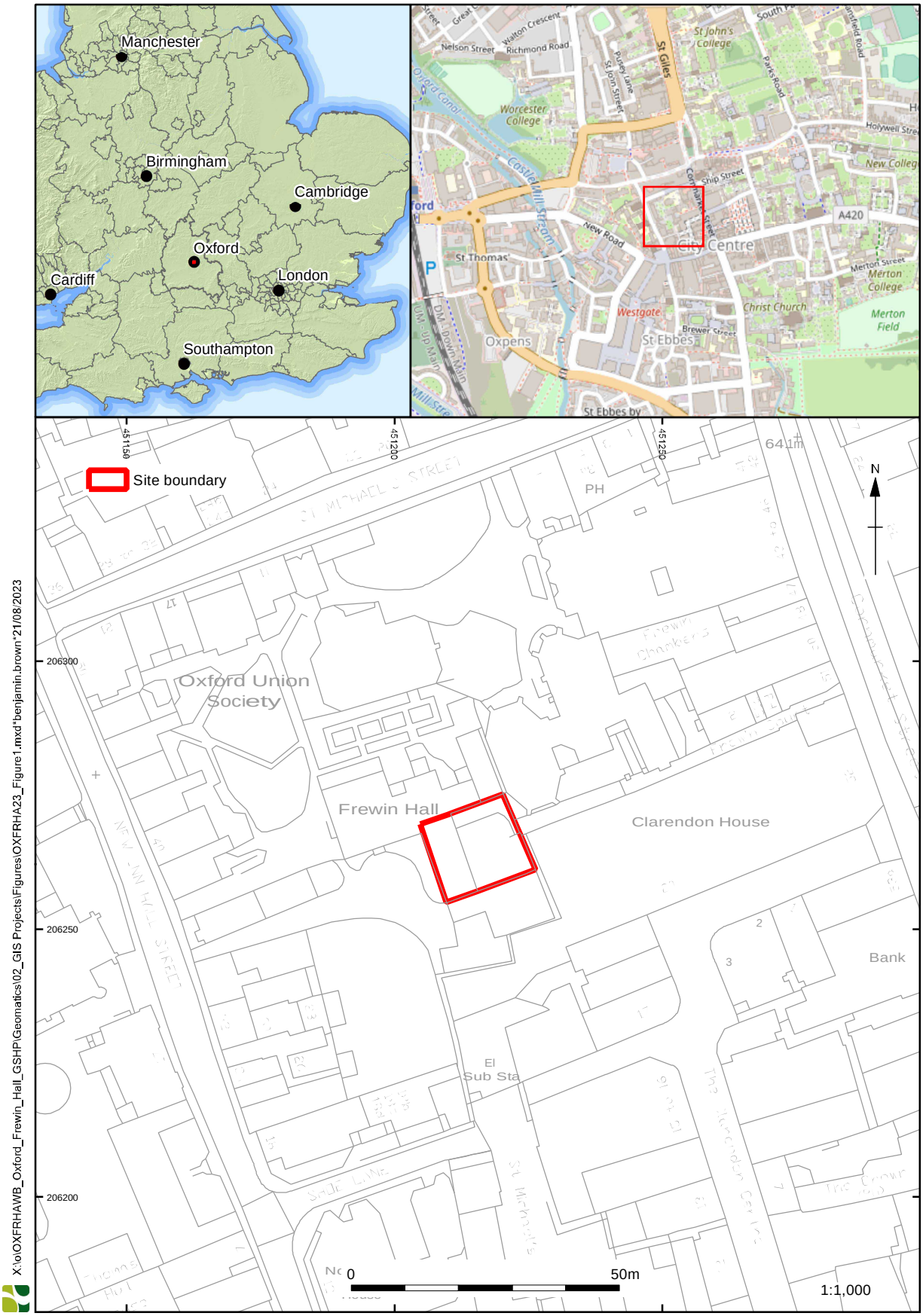

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Figure 1: Site location

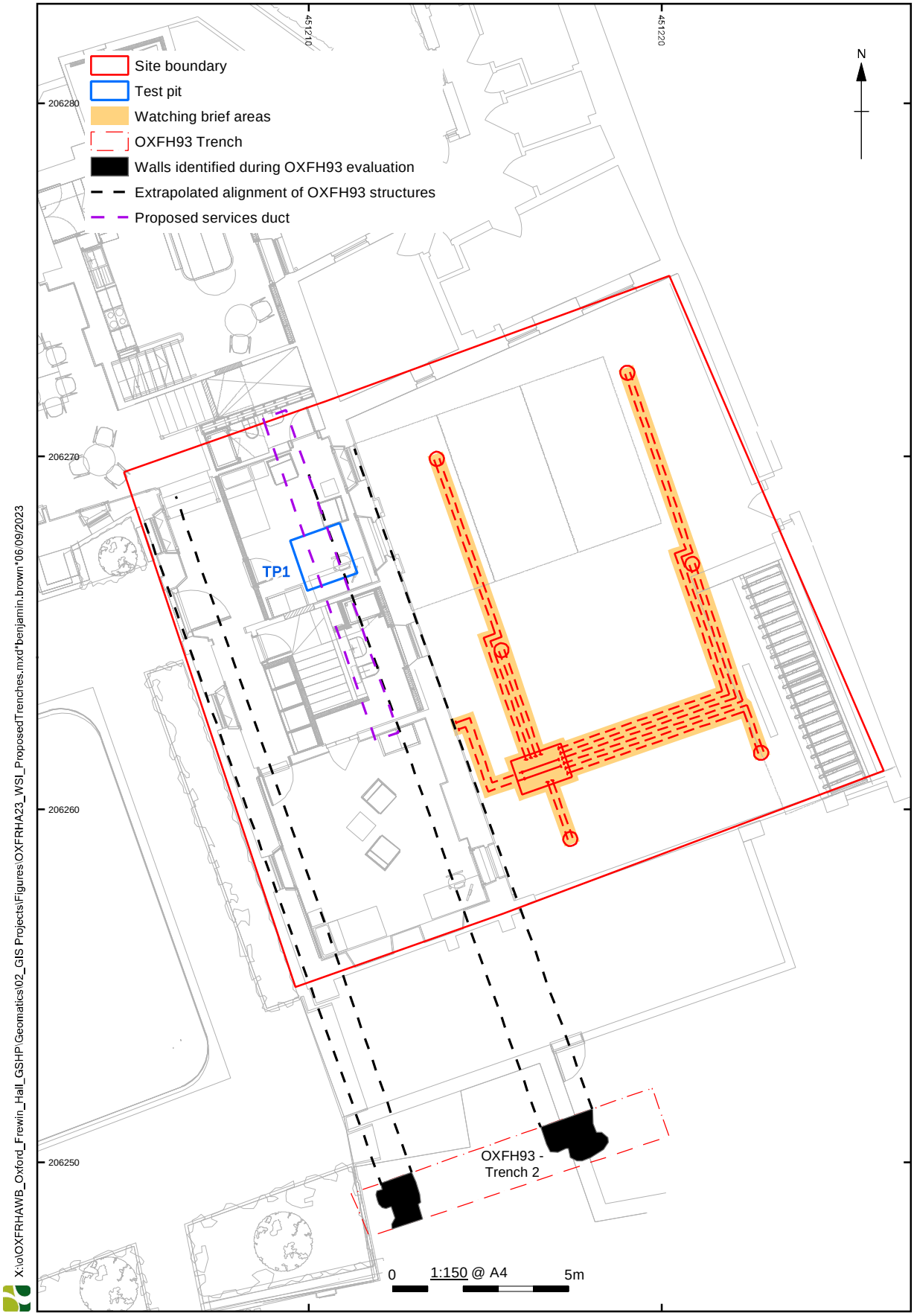

Figure 2: Detailed plan of watching brief area and proposed test pit

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