



Southampton Airport Runway Extension Eastleigh, Hampshire

Written Scheme of Investigation for
Archaeological Watching Brief

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Portway House
Old Sarum Park
Salisbury
SP4 6EB

www.wessexarch.co.uk

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Project management by	Bianca Williams-San Martin
Document compiled by	Jon Kaines
Graphics by	Eilis Weldon

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Written Scheme of Investigation for Archaeological Watching Brief

1 INTRODUCTION

1.1 Project and planning background

1.1.1 Wessex Archaeology has been commissioned by Volkerfitzpatrick Ltd ('the client') to produce a Written Scheme of Investigation (WSI) for a proposed archaeological watching brief during groundwork for a runway extension. The works to be monitored cover an area of 1.8 ha centred on NGR 445587, 117857, at Southampton Airport, Mitchell Way, Eastleigh, Hampshire (Figures 1 and 2).

1.1.2 The proposed development includes the construction of a 164 metre runway extension at the northern end of the existing runway, an associated blast screen to the north of the proposed runway extension, removal of an existing bund and the reconfiguration and extension of the existing long stay car parking to the east and west of Mitchell Way to provide additional long stay spaces.

1.1.3 A planning application (F/19/86707) submitted to Eastleigh Borough Council, was granted 3 June 2021, subject to conditions. Condition 18 relates to archaeology:

No work shall start until the developer has secured the implementation of a programme of archaeological work in accordance with a written scheme of investigation and recording which has first been submitted to and approved in writing by the Planning Authority.

Reason: To ensure that the archaeological interest of the site is properly safeguarded and recorded.

1.1.4 The County Archaeologist was consulted and replied on 21 November 2019:

When the current car park was created a Bronze Age landscape of fields and trackways was revealed and recorded. It is likely that [the] extension of that car park and extension of the runway close by may reveal further extent of this field system, and potentially any associated settlement.

I recommend that an archaeological condition be attached to any planning permission which might be issued to secure the archaeological monitoring of groundworks in locations where archaeological evidence, particularly of the Bronze Age landscape that appears to underlie the airport, is likely to be encountered.

1.1.5 This watching brief is part of a programme of archaeological works, which, to date, has included a Desk Based Assessment (Wessex Archaeology 2022).

1.2 Scope of document

1.2.1 This WSI sets out the aims of the watching brief, and the methods and standards that will be employed. In format and content, it conforms to current best practice, as well as to the

guidance in *Management of Research Projects in the Historic Environment* (MoRPHE, Historic England 2015a) and the Chartered Institute for Archaeologists' (CIfA) *Standard and guidance for an archaeological watching brief* (CIfA 2014a).

- 1.2.2 This document will be submitted to the County Archaeologist at Hampshire County Council, archaeological advisor to the Local Planning Authority (LPA), for approval, prior to the start of the watching brief.

1.3 Location, topography and geology

- 1.3.1 The proposed watching brief area is an irregular parcel of land of approximately 1.8 ha, located within the north of the grounds of Southampton Airport. Southampton Airport is located 6.5 km to the north-east of central Southampton, and 500 m to the south of the town of Eastleigh. The site bounds the northern perimeter of the airport runway and is currently grassland within the airside area of the airport. A ditch runs north-west to south-east through the southern part of the site, which marks the boundary of the runway strip edge and the ILS critical area (a zone which must remain clear when an Instrument Landing System is in use). Within the northern part of the site is a pre-existing airside road, and in the far north is an area of scrub and a landside track which leads to the airport car park.
- 1.3.2 The site and wider airport are on flat ground (possibly levelled) at an elevation of 13 m above Ordnance Datum (aOD). Local topography falls to the south and east of the airport, into the floodplain of the River Itchen. The floodplain has been historically altered with earthworks to form a large area of water meadow. The minimum local elevation is around 3m aOD, 500 m to the south of the airport.
- 1.3.3 The bedrock geology is mapped as London Clay Formation, which consists of clay, silt and sand. This is overlain by River Terrace Deposit 1, one of 14 distinct fluvial terrace formations found within the wider Solent area (British Geological Survey 2023; Briant et al, 2009). River Terrace Deposit 1 is the youngest of the local terrace formations and was formed during the glacial Devensian period, between 70,000 and 10,000 years ago.

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

2.1 Introduction

- 2.1.1 The archaeological and historical background was assessed in a prior desk-based assessment (DBA: Wessex Archaeology 2022), which considered the recorded historic environment resource within a 1 km study area of the development. A summary of the results is presented below, with relevant entry numbers from the Hampshire Historic Environment Record (HHER) and the National Heritage List for England (NHLE) included. Additional sources of information are referenced, as appropriate.

2.2 Previous investigations

- 2.2.1 No records of any previous intrusive archaeological investigations within the site have been identified during the preparation of this assessment.
- 2.2.2 The HHER contains four entries for previous archaeological investigations within the study area, three of which were within the airport. A two-phase archaeological excavation, 350 m to the southwest of the site identified a well-preserved Bronze Age field system and associated features (58128). A watching brief (58187) and an evaluation (70001) were undertaken to the east of the site, 960 m and 920 m away respectively. Neither of these investigations found any evidence of archaeological deposits.

- 2.2.3 To the west of site, 840 m away and outside of the airport grounds, a four-phase excavation was undertaken in preparation of the development of a new residential area (59599). Several linear features were found, though these were likely modern, in addition to some small sherds of abraded pottery.

2.3 Archaeological and historical context

Palaeolithic (970,000–9500 BC)

- 2.3.1 There is no recorded Palaeolithic archaeology within the study area, however the site is on top of a fluvial terrace formation called River Terrace Deposit 1. This formation was formed during the glacial Devensian period, between 70,000 and 10,000 years ago (Briant et al., 2009), when *Homo neanderthalensis* and early *Homo sapiens* occupied Britain. Proximity to fluvial terraces generally increases the likelihood of palaeolithic archaeology or palaeo-environmental evidence to be found on a site, because these areas would have been rich in resources and therefore attractive to early prehistoric people.

- 2.3.2 Five sites have been found within areas covered by River Terrace 1 in The Eastern Solent. Each site is discussed in detail in *The Palaeolithic Archaeology of the Sussex/Hampshire Coastal Corridor* (Bates et al., 2008). The material recovered did show signs of having been 'rolled', suggesting they had derived from earlier terraces.

Neolithic (4000–2400 BC) and Bronze Age (2400–700 BC)

- 2.3.3 There is no evidence of any Mesolithic archaeology within the study area, with the earliest recorded archaeology dating to the Neolithic (25906). A chipped celt, which is a type of stone tool similar to an axe head, was found in Bishopstoke in 1905, though the item has since been lost. The findspot has been placed 290 m to the north-east of site, but this is presumably approximate.
- 2.3.4 A well-preserved Bronze Age field system was excavated between 2007 and 2008 within the airport grounds (58182; Sulikowska, 2010). This is plotted being located 350 m to the southwest of the site, but a look at trench plans show that the trench extended as close as 150 m to the west of site. A total of eight perpendicular ditches were excavated, which formed a series of sub-rectangular fields aligned on a north-west to south-east axis, overlooking the Itchen valley. On average the ditches were 1.2 m to 1.6 m wide and up to 0.65 m deep. The ditches extended across the width of the trench and presumably beyond, so their lengths are not known, but the trajectory of one of the features heads towards the site. Some of the ditches showed signs of recutting and cleaning, which suggests they were in use for an extended period of time (Sulikowska, 2010).
- 2.3.5 In addition to the ditches of the field system, a double-ditched trackway was found within the southern part of the trench, aligned to the field boundaries. Two gullies, a pit and a stakehole were also found, as well as a number of tree-throws. It was observed that the tree-throws were cut by the field ditches and thus pre-dated the field system.
- 2.3.6 A small number of finds were recovered, which included two struck flints, five burnt flints and fourteen sherds of coarse-ware pottery, which are broadly characteristic of the Middle to Late Bronze Age. This is a comparatively small number of finds given the scale of the field system, which Sulikowska (2010) has interpreted to mean the system was not close to any nearby settlement. Likewise, the only environmental evidence recovered was a single bramble seed and a fragment of hazelnut, suggesting the fields were pastoral rather than arable.

- 2.3.7 A small, socketed spearhead was found 'near the river at Bishopstoke,' pre-1969 (when the record was last updated; 25917). The spearhead has since been lost. It was described as an 'Irish type,' which is an antiquarian term used to describe what we now know to be Bronze Age.
- Iron Age (700 BC–AD 43) and Romano-British (AD 43–410)*
- 2.3.8 An Iron Age coin was found near the site in 1969, and is recorded within the Portable Antiquities Scheme (Record CCI-920151). The coin is a gold stater of the Durotriges, and features a wreath and turf cutter motif on the obverse and a disjointed horse figure on the back. Other coins of this type have been dated to 60 – 20 BC (IACB, 2010).
- 2.3.9 A Roman road passed the site around 1.2 km to the west, connecting Bitterne (*Claustentum*) with Winchester (*Venta Belgarum*). A considerable amount of Romano-British material was discovered in around 1878-1879 within the vicinity of the site, in what was known as 'Ballast Field' in Bishopstoke (25900, 25901, 72207). While no field is officially titled 'Ballast Field' in any of the nearby tithe apportionments, it is possible that this was one in of the fields directly north to the site, where the rail depot now stands. This is on the basis that the Gosport and Stokes Bay railway line passed through these fields (railway lines were often constructed on ballast banks), and also that these fields contained numerous gravel pits (thus potentially providing ballast).
- 2.3.10 The finds are evidenced by an entry in the Hampshire Antiquary & Naturalist (1891), which records word-of-mouth information. A workman, communicating with the author, stated 'Do you remember the great finds made 12 or more years ago out towards Swathling?' ... 'That was the place to find things, but we valued them not. Urns and crockery of every description I found there, and found continually. One day I came across a small jar of around 200 Roman coins, and another day we came across a huge trench in which there must have been 200 horses' heads, almost as sound as they could be, till the air got to them. Then we found grain pressed in all sorts of ways, still sound, or getting black'.
- 2.3.11 An Ordnance Survey Archaeology Branch card further documents that in 1921, fifteen Roman vessels in perfect condition were found in a loft at Valewood House, with a letter saying they were found at a depth of 4.5 ft (approx. 1.4 m) in Ballast Field. OGS Crawford, writer of the card, suggests that the finds may have related to a 'Roman building at SU 452 162', which would be approximately 100 m north of the site. There is no HHER entry of a Roman building at this location, however.
- 2.3.12 While the deposition of such a large quantity of ceramics gives this site considerable significance, the deposition of such a large number of horse heads is even more unusual, and a comparative example of such a practice could not be found. Horse remains become more common in archaeological contexts from the Iron age onwards, but typically only represent a small percent of the total remains of all domesticated animals in any given site. Horse burials were also a type of ritual deposit made during both during the Iron Age and Roman periods, but these would typically consist of a more intact body of single individuals. The deposition of 200 horse skulls at Bishopstoke would have had the potential to be a highly significant assemblage demonstrative of ritual behaviour on an unprecedented scale, had any survived to the present day.
- 2.3.13 In addition to the finds discussed above, a single bronze coin of Cladius Gothicus (AD 268-269) was found 950 m to the east of the site in 1969 (25910), again emphasising a Roman presence within the study area. It was also communicated by the Client during the site visit that a watching brief had recently been undertaken by Cotswold Archaeology immediately

to the north of the site, and this had unearthed Iron Age pottery and ditches (pers. comms). This raises the potential for further Iron Age deposits to be situated within the site.

Saxon and Medieval (AD 410–1500)

- 2.3.14 The name Eastleigh has Old English origins, meaning eastern wood. In the Domesday Book of 1086, Eastleigh is recorded to have had thirteen households, and was a holding of Henry the treasurer. It consisted of two ploughlands, twelve acres of meadow and woodland for five swine render, for a total annual value of two pounds. Eastleigh did not seem to be an important settlement during the medieval period, and further information on the manor could not be found.
- 2.3.15 A medieval field system has been documented by the National Mapping program as a series of linear cropmark features in aerial photographs to the east and north east of the site (58291, 58288). These features are not visible on LiDAR imagery.

Post-medieval (AD 1500–1800)

- 2.3.16 There is a large area of water meadow to the south east of the site, off the river Itchen. It is generally believed that water meadows were first developed in the chalklands of Hampshire, Wiltshire and Dorset in the 16th century, and remained popular as valuable economic resources until the early 19th century. Water meadows were created by the construction of weirs that would control the flow of a river, followed by parallel rows of carriageways to divert the water and distribute it across a wide expanse (Kerridge, 1953). The system was controlled and monitored by somebody appointed the 'Floater' or 'Drowner.' This system of irrigation greatly improved the fertility of the soils and expanded the period of the year in which grasses could be grown, thus providing a vital source of fodder to the livestock industry (ibid).
- 2.3.17 The sections of water meadow closest to the site were numbered by the Hampshire Water-Meadows Survey (2000) as 151, 152, 153, 154 and 155 within the wider scheme. These were all classified as Type 3, 'large complex water meadows, curvilinear in form, which generally tend to occur on broad floodplains'. It was noted that most were in good or fair condition, with many of the system elements surviving as extant earthworks.

19th century (AD 1800–1900)

- 2.3.18 The site remained agricultural through the 19th century, though developing industry meant the character of the wider study area was starting to shift. Two railways were built nearby; the London and South Western Railway Company constructed a line running north to south in 1838, 100 m to the west of the site, which connected Southampton and Winchester (Humby, 2015). A second line was constructed by the company in 1841, which ran north-west to south-east 500 m to the north of the site, and this connected Bishopstoke to Gosport. These lines converged at the newly opened Bishopstoke Station (current-day Eastleigh railway station). The opening of the railways was fundamental in Eastleigh's development; prior to the opening of Bishopstoke station in 1839, Eastleigh had a population of '78 people living in 13 houses', but this rapidly rose to over 500 people by 1870 (Humby, 2015).
- 2.3.19 Eastleigh Railway Gas Works was opened 560 m to the north of the site, which manufactured gas for the lighting of the railway carriages (71897). The gas was stored in high-pressure gas holder tanks, none of which survive today.
- 2.3.20 Another large facility was opened 870 m to the north east of the site. The Eastleigh Sewage Works, which is still an active sewage treatment plant, was first opened in 1895, and some early equipment purportedly survives (55989). This includes original settling tanks, covered

sludge digestion tanks, a gasholder and generator house. Some of the oil engines in the generator house are still in working order and available for use, though seldom see service.

- 2.3.21 The site fell within the parish of North Stoneham during the publication of the tithe map in 1842 and was divided into four parcels. The boundaries of these fields may survive as buried archaeological features. The parcels were Colliers Field to the north-west, Eighteen Acres to the north-east, Rough Pasture to the south-east and Hither Blackheaths to the south-west. All were used for arable farming except for Rough Pasture, which was pastoral. Colliers Field and Hither Blackheaths (meaning 'here is black earth') suggests that there was a known coal deposit somewhere to the west of the site. The site was close to the parish boundary of South Stoneham, which ran along the northern edge of Colliers Field and Eighteen Acres.
- 2.3.22 By the publication of the first edition Ordnance Survey map in 1872), the field boundary between Colliers Field and Eighteen Acres has been dissolved, as had the boundary between Rough Pasture and Hither Blackheaths. As such, the site was then only divided across two parcels, with the boundary running through the north of the site. The 1872 map also shows a house had been built nearby on the opposite site of the Southampton to Winchester railway. It was called Charbourg House and was situated within a large garden with an orchard to its north. It was demolished by 1897.
- 2.3.23 The 1897 Ordnance Survey map shows that clay extraction had occurred in the site's northern field, as demarcated by the 'Old Clay Pit'. This also suggests that the pit had fallen out of use by this time. A series of trackways that are also depicted may suggest other exploratory work had occurred in this field. Two small buildings had been established close to the pit, and it seems probable these are sheds relating to the extraction activities. The map marks that a signal post was located 110 m to the west of the site, along the railway. An 'MP' is also shown, 200 m to the northwest, denoting the presence of a milepost..

Modern (AD 1900–present day)

- 2.3.24 The 1911 Ordnance Survey map demonstrates increasing urbanisation around Eastleigh was occurring at the start of the 20th century. A large amount of residential development had been completed to the north-west of the site, including on the new Cherbourg Road, named after the former Charbourg House. Further housing plots are shown to have been planned to the west of the site and were in a state of semi-completion. To the immediate north of the site, a new rail depot had been constructed, and the southernmost track ran through the northern part of the site. A gravel pit is illustrated as being located over the site boundary to the north-west. The prior field boundary that cut across the site east-to-west had been dissolved but replaced by a trackway that was faithful to the boundary's route.
- 2.3.25 It was during this period that the field to the south of the site was first used as a place to land aircraft. Rowland Moon first flew his tractor monoplane 'Moonbeam II' from land at North Stoneham Farm in June 1910, and was later joined by Graham White and Maurice Tetard and their aircraft (Hampshire Airfields, 2014). The field did not gain official recognition as an airfield until 1917, when the War Office moved to build an Aircraft Acceptance Park on the site.
- 2.3.26 Subsequent historic mapping around the site becomes demonstratively incomplete following the 1911 map through to 1983, which was a common practice to obscure the activities of military bases and airfields. It is known that before the Aircraft Acceptance Park was completed, the site was given to the US Naval Air Service in July 1918, and became known as NAS Eastleigh (Hampshire Airfields, 2014). A plan of the aerodrome from 1918 shows a series of buildings had been constructed along the eastern side of the field, which

included galleys, mess halls, machine shops and aircraft hangers (UK Airfields, 2014). Interestingly, the plan notes it was the largest European USNAF base constructed during WWI. The site was used for a short time to assemble and test aircraft destined for the warfront in France, before being passed back to the RAF in April 1919.

- 2.3.27 Between 1920 and 1935 there was no military presence within the airfield, and it became a civil landing ground. An aerial photograph from 1932 (EPW044873) shows the airfield still had grass runways, and that the ex-NAS buildings were still extant. In 1935 the north-eastern corner of the airfield was given to the Fleet Air Arm and became known as 'RAF Eastleigh' (and later 'RAF Southampton' in 1936). It was used as a facility to build and test Spitfires, Seafires and hydro bi-planes, as well as the failed Burnelli Flying Wing project. It was from RAF Southampton that the first Spitfire flight was made on the 5th March 1936 (Hampshire Airfields, 2014). An aerial photograph from 1939 shows a new compound had been constructed within the north-eastern part of the site, with no fewer than 10 hangers and 36 personnel buildings (there may be more, but the edge of the photograph crops out some of the buildings). One of the hangars along the eastern part of the airfield also appears to have been enlarged (EPW060855).
- 2.3.28 In July 1939, the airfield changed hands again and became a Royal Navy airbase called HMS Raven. The airfield was used as safety equipment and air medicine schools. It is recorded that 739 Royal Navy personnel were stationed there (including 48 officers), as well as 191 members of the Women's Royal Naval Service. It had two grass runways, aligned NNE-SSW and WNW-ESE, and Bessonneau-1 type hangars (Willis & Holliss, 1990). Bessonneau hangars were timber and canvas hangars which were designed to be portable and temporary, so it is unlikely there would be any archaeological evidence of these structures.
- 2.3.29 There is, however, documentation and physical evidence of a large number of defensive structures around the airfield, including barrage balloon bases (58239, 58284, 58286), air raid shelters (71000, 70238), pillboxes (58243, 25934, 25935, 58276), gun emplacements (58276, 58278) and the site of an anti-aircraft battery (37722). Other recorded structures relating to the activities of HMS Raven include an aircraft dispersal site (58285), zig-zag training trenches (58290), a firing range (58275) and miscellaneous barrack buildings (58279).
- 2.3.30 Despite its defences, the base evidently came under attack on occasion. Southampton was badly hit during the Blitz, and military bases were often targets during raids. Luftwaffe files containing plans and aerial photographs of the airfield and adjoining railway works would suggest that the bombing was planned. Eleven circular bomb craters have been identified 'in the area immediately north of Southampton Airport', which means the site may have feasibly been hit at this time (58287). On September 11th, 1940, one of the toolrooms of the aircraft hangars was directly hit, supposedly killing up to 52 workers (Eastleigh & District Local History Society, date unknown). It was reported that the bombing was undertaken by three Blenheim Bombers, which had been captured by the Luftwaffe following the allies retreat from Dunkirk.
- 2.3.31 A number of aircraft are known to have crashed within and around the airfield during its operation as a military base. While there are a total of 30 instances of crashes broadly attributed to 'Eastleigh', 12 of these explicitly state that they occurred at the airfield (Hampshire Airfields, 2012). Only one accident is recorded as fatal, but these records aren't thorough, and it is likely many more caused loss of life (Hampshire Airfields, 2012). This is supported by recorded oral history, with one testimony stating that they had memory of at least four fatal crashes, and that many planes were downed by hitting the balloon barrages

positioned around the airfield and at the recreation ground (Pidgeon, 2005). The testimony details that in one instance, 'a formation of New Zealand Mustangs came into Eastleigh Airport and two collided, with one crashing into the fields by the Portsmouth railway line' (and potentially near the site). Military aircraft crash sites are controlled sites under the Protection of Military Remains Act 1986 and would require a licence issued by the MoD to unearth or move.

2.3.32 Following the end of the war, the wartime aerodrome returned to being a municipal airport in 1945. At this time, it was still operating with a grass runway; the concrete runway was not constructed until 1965 (Hampshire Airfields, 2014). It was slightly shorter than it is today, terminating around 40 m to the south of the site. While it is not clear when the runway was extended, historic satellite imagery shows that it was completed by 1999. The 1983 Ordnance Map shows that the northwest of the site, on landside, was an undeveloped parcel of land with a 100 m wide depression in it; this is the remains of the old chalk pit as shown on the 1911 map. This piece of land was later developed in 2000, to become a carpark for the airport, which was subsequently extended southwards in 2005 and 2010. The original airport terminal was demolished and redeveloped in 1995.

2.3.33 It is noted on the LiDAR survey that there are a series of linear features 100 m to the south-west of the site that are not accounted for by the HER. It is thought these are 'french drains' based on the feature's distinctive herringbone pattern, which is a type of drainage created by channels of buried gravel (rather than buried pipes). The feature presents itself on the LiDAR as a 350 m long ditch orientated north-east to south-west, with smaller ditches branching off at an angle that are askew to the main channel but are parallel to one another.

3 AIMS AND OBJECTIVES

3.1 Aims

3.1.1 The aims (or purpose) of the watching brief, as defined in the ClfA *Standard and guidance for an archaeological watching brief* (ClfA 2014a), are to:

- allow, within the resources available, the preservation by record of archaeological deposits, the presence and nature of which could not be established (or established with sufficient accuracy) in advance of the development or other works;
- provide an opportunity, if needed, for the watching archaeologist to signal to all interested parties, before the destruction of the material in question, that an archaeological find has been made for which the resources allocated to the watching brief itself are not sufficient to support treatment to a satisfactory and proper standard; and
- guide, not replace, any requirement for contingent excavation or preservation of possible deposits.

3.2 Objectives

3.2.1 In order to achieve the above aims, the objectives of the watching brief are to:

- determine the presence or absence of archaeological features, deposits, structures, artefacts or ecofacts within the specified works area;
- record and establish, within the constraints of the works, the extent, character, date, condition and quality of any surviving archaeological remains (a preservation by record);

- place any identified archaeological remains within a wider historical and archaeological context in order to assess their significance; and
- make available information about the archaeological resource on the site by preparing a report on the results of the watching brief.

4 FIELDWORK METHODS

4.1 Introduction

- 4.1.1 Health and safety will override archaeological considerations in all works since, as stated in ClfA guidance, *Health and Safety regulations and requirements cannot be ignored no matter how imperative the need to record archaeological information; hence Health and Safety will take priority over archaeological matters* (ClfA 2014a, 10).
- 4.1.2 All works will be undertaken in accordance with the detailed methods set out within this WSI. Any significant variations to these methods will be agreed in writing with the County Archaeologist and the client prior to being implemented.
- 4.1.3 The watching brief will monitor all below groundwork related to the development. This will include, but is not limited to, the runway extension, the blast screen, removal of the bund and improvement works to the carparks, which should all fall into the watching brief area shown in Figure 1. Monitoring will also be required for any utility trenching and other below groundwork needed to link the new development to existing facilities.

4.2 Service location and other constraints

- 4.2.1 The client and/or their principal contactor will be responsible for the identification and protection of any above- and below-ground services within the watching brief area/s. The client and/or their principal contactor will also be responsible for informing Wessex Archaeology of, and delimiting, any other areas of environmental, ecological or other constraints.

4.3 Watching brief methods

- 4.3.1 The watching brief will be undertaken by at least one archaeologist, subject to the number of site operations being carried out at any one time. All mechanical excavation will, where possible, be undertaken using a toothless ditching bucket and will be constantly monitored by the watching archaeologist.
- 4.3.2 The site is within a working airport and construction is planned to take place at night. The works site will be illuminated using 5-6 conventional tower lights placed differently each night to ensure that the team undertaking the works can see what they are doing. They can be adjusted to better suit the watching brief archaeologist, if that becomes necessary. Additionally, a head torches can be fitted to hard hats and large handheld torches will be available.
- 4.3.3 Without causing unnecessary delay to the groundwork programme, the archaeologist may ask for the groundwork to be temporarily halted whilst investigations are carried out. If appropriate, areas of archaeological interest will be defined and suitably protected in advance of their investigation and recording.
- 4.3.4 Where necessary, the surface of archaeological deposits will be cleaned by hand. A sample of the archaeological features and deposits identified will be hand-excavated and recorded, sufficient to address the aims of the watching brief. Spoil derived from both machine

stripping and hand-excavation will be visually scanned for the purposes of finds retrieval, and where appropriate will also be metal-detected by trained archaeologists. Artefacts and other finds will be collected and bagged by context.

4.3.5 If extensive, complex or well-preserved archaeological remains are identified, for which the scope of the approved watching brief WSI is insufficient, the watching archaeologist will halt the groundwork, delimit the area of archaeological interest, and report immediately to the Wessex Archaeology project manager. Wessex Archaeology will then inform the groundwork contractor, the client and the County Archaeologist, as a contingent excavation or revised strategy may be required. The programme, and additional resources, for any contingent excavation will be agreed with the client. Accordingly, this WSI will need revising before any further fieldwork proceeds – the revised WSI will need the approval of the County Archaeologist, on behalf of the LPA.

4.3.6 If human remains are uncovered, the specific methods outlined below (section 4.7.2) will be followed.

4.4 Recording

4.4.1 All exposed archaeological deposits and features will be recorded using Wessex Archaeology's pro forma recording system.

4.4.2 A complete record of excavated archaeological features and deposits will be made. This will include plans and sections, drawn to appropriate scales (generally 1:20 or 1:50 for plans, 1:10 for sections) and tied to the Ordnance Survey (OS) National Grid.

4.4.3 A full photographic record will be made using digital cameras equipped with an image sensor of not less than 10 megapixels. This will record both the detail and the general context of the principal features and the site. Digital images will be subject to managed quality control and curation processes which will embed appropriate metadata within the image and ensure long term accessibility of the image set.

4.5 Survey

4.5.1 The real time kinematic (RTK) survey of all archaeological features will be carried out using a Leica Global Navigation Satellite System (GNSS) connected to Leica's SmartNet service. All survey data will be recorded in OS National Grid coordinates and heights above OD (Newlyn), as defined by OSTN15 and OSGM15, with a three-dimensional accuracy of at least 50 mm.

4.5.2 If, due to unforeseen circumstances, it is not possible to survey using survey equipment prior to the destruction of the material, archaeological features will be located to either client plans that are related to OS mapping or structures/features that appear on OS mapping. This will be achieved using hand-held measuring tapes and the basic principles of triangulation.

4.6 Monitoring

4.6.1 The client will inform the County Archaeologist of the start of the watching brief and its progress. Reasonable access will be arranged for the County Archaeologist to make site visits to inspect and monitor the progress of the watching brief. Any variations to the WSI, if required to better address the project aims, will be agreed in advance with the client and the County Archaeologist.

4.7 Finds

General

- 4.7.1 All archaeological finds will be retained, although those of clearly very recent origin with negligible potential to provide information relevant to the project aims and objectives may be recorded on site and not retained. Where appropriate, soil samples may be taken and sieved to aid in finds recovery. Any finds requiring conservation or specific storage conditions will be dealt with immediately in line with *First Aid for Finds* (Watkinson and Neal 1998).

Human remains

- 4.7.2 In the event of discovery of any human remains (articulated or disarticulated, cremated or unburnt), all excavation of the deposit(s) will cease pending Wessex Archaeology obtaining a Ministry of Justice licence (this includes cases where remains are to be left *in situ*).
- 4.7.3 Initially the remains will be left *in situ*, covered and protected, pending discussions between the client, Wessex Archaeology's osteoarchaeologist and the County Archaeologist regarding the need for excavation/removal or sampling. Where this is deemed appropriate, the human remains will be fully recorded, excavated and removed from site in compliance with the Ministry of Justice licence.
- 4.7.4 Excavation and post-excavation processing of human remains will be in accordance with Wessex Archaeology protocols and in-line with current guidance documents (e.g., McKinley 2013) and the standards set out in ClfA Technical Paper 13 (McKinley and Roberts 1993). Appropriate specialist guidance/site visits will be undertaken if required.
- 4.7.5 The final deposition of human remains subsequent to the appropriate level of osteological analysis and other specialist sampling/examinations will follow the requirements set out in the Ministry of Justice licence.

Treasure

- 4.7.6 Wessex Archaeology will immediately notify the client and the County Archaeologist on discovery of any material covered, or potentially covered, by the *Treasure Act 1996*. All information required by the *Treasure Act* (i.e., finder, location, material, date, associated items etc.) will be reported to the Coroner within 14 days.

4.8 Environmental sampling

- 4.8.1 All sampling will be undertaken following Wessex Archaeology's in-house guidance, which adheres to the principles outlined in Historic England's guidance (English Heritage 2011 and Historic England 2015b).
- 4.8.2 Bulk environmental soil samples, for the recovery of plant macrofossils, wood charcoal, small animal bones and other small artefacts, will be taken as appropriate from well-sealed and dateable contexts. In general, features directly associated with particular activities (e.g., pits, latrines, cesspits, hearths, ovens, kilns, and corn driers) should be prioritised for sampling over features, such as ditches or postholes, which are likely to contain reworked and residual material.
- 4.8.3 If waterlogged or mineralised deposits are encountered, an environmental sampling strategy will be devised and agreed with the County Archaeologist as appropriate. Specialist guidance will be provided by a member of Wessex Archaeology's geoarchaeological and environmental team, with site visits undertaken if required.

4.8.4 Any samples will be of an appropriate size – typically 40 litres for the recovery of environmental evidence from dry contexts, and 10 litres from waterlogged deposits.

4.8.5 Following specialist advice, other sampling methods such as monolith, Kubiena or contiguous small bulk (column) samples may be employed to enable investigation of deposits with regard to microfossils (e.g., pollen, diatoms) and macrofossils (e.g., molluscs, insects), soil micromorphological or soil chemical analyses.

5 POST-EXCAVATION METHODS AND REPORTING

5.1 Stratigraphic evidence

5.1.1 All written and drawn records from the watching brief will be collated, checked for consistency and stratigraphic relationships. Key data will usually be transcribed into a database, which can be updated during any further analysis. The preliminary phasing of archaeological features and deposits will be undertaken using stratigraphic relationships and the spot dating from finds, particularly pottery.

5.1.2 A written description will be made of all archaeologically significant features and deposits that were exposed and excavated, ordered by period and/or feature group as appropriate.

5.2 Finds evidence

5.2.1 All retained finds will, as a minimum, be washed, weighed, counted and identified. They will then be recorded to a level appropriate to the aims and objectives of the watching brief. Recording and reporting will conform to the Type 1 (Description) level according to ClfA's *Toolkit for Specialist Reporting*, to include appropriate quantification and characterisation. The report will include a table of finds by feature/context.

5.2.2 Metalwork from stratified contexts will be X-rayed and, along with other fragile and delicate materials, stored in a stable environment. The X-raying of objects and other conservation needs will be undertaken by Wessex Archaeology in-house conservation staff, or by another approved conservation centre.

5.2.3 Finds will be suitably bagged and boxed in accordance with the guidance given by the relevant museum and generally in accordance with the standards of the ClfA (2014b).

5.3 Environmental evidence

5.3.1 Bulk environmental soil samples will be processed by standard flotation methods. The residues will be fractionated into 5.6/4 mm and 1 mm and dried if necessary. The coarse residue fraction (>5.6/4 mm), and the fine fraction when appropriate, will be sorted and discarded, with any finds recovered given to the appropriate specialist. The flot will be retained on a 0.25 mm mesh and scanned to assess the range of environmental remains present and their preservation. Unsorted fine residues will be retained until after any analyses and discarded following final reporting (in accordance with the Selection policy, below).

5.3.2 In the case of samples from cremation-related deposits the flots will be retained on a 0.25 mm mesh, with residues fractionated into 4 mm, 2 mm and 1 mm. In the case of samples from inhumation burial deposits, the sample will be wet-sieved through 9.5 mm and 1 mm mesh sizes. The coarse fractions (9.5 mm) will be sorted with any finds recovered given to the appropriate specialist together with the finer residues.

5.3.3 Any waterlogged samples will be processed by standard waterlogged flotation methods.

- 5.3.4 Recording and reporting will conform to the Type 1 (Description) level according to ClfA's *Toolkit for Specialist Reporting*, to include appropriate quantification and characterisation.

5.4 Reporting

- 5.4.1 Following completion of the fieldwork and the assessment of the stratigraphic, artefactual and ecofactual evidence, a draft report will be submitted for approval to the client and the County Archaeologist for comment. Once approved, a final version will be submitted.

- 5.4.2 The report will include the following elements:

- Non-technical summary;
- Project background;
- Archaeological and historical context;
- Aims and objectives;
- Methods;
- Results – stratigraphic, finds and environmental;
- Conclusions in relation to the project aims and objectives, and discussion in relation to the wider local, regional or other archaeological contexts and research frameworks etc;
- Archive preparation and deposition arrangements;
- Appendices;
- Illustrations; and
- References.

- 5.4.3 A copy of the final report will be deposited with the HER, along with surveyed spatial digital data (.dxf or shapefile format) relating to watching brief.

Publication

- 5.4.4 If no further excavation works are undertaken, a short report on the results of the watching brief will be prepared for publication in a suitable journal, if considered appropriate and agreed with the client and the County Archaeologist.

OASIS

- 5.4.5 An OASIS (online access to the index of archaeological investigations) record (<http://oasis.ac.uk>) will be created, with key fields completed, and a .pdf version of the final report submitted. Subject to any contractual requirements on confidentiality, copies of the OASIS record will be integrated into the relevant local and national records and published through the Archaeology Data Service (ADS) ArchSearch catalogue.

6 ARCHIVE STORAGE AND CURATION

6.1 Museum

- 6.1.1 It is recommended that the project archive resulting from the watching brief be deposited with Hampshire Cultural Trust. Provision has been made for the cost of long-term storage in the post-fieldwork costs. The museum will receive notification of the project prior to fieldwork commencing, and an accession number will be obtained.

6.2 Transfer of title

- 6.2.1 On completion of the watching brief (or extended fieldwork programme), every effort will be made to persuade the legal owner of any finds recovered (i.e., the landowner), with the exception of human remains and any objects covered by the *Treasure Act 1996*, to transfer their ownership to the museum in a written agreement.

6.3 Preparation of archive

Physical archive

- 6.3.1 The complete physical archive, which may include paper records, graphics, artefacts and ecofacts, will be prepared following the standard conditions for the acceptance of excavated archaeological material by Hampshire Cultural Trust, and in general following nationally recommended guidelines (Brown 2011; ClfA 2014c; SMA 1995). The archive will usually be deposited within one year of the completion of the project, with the agreement of the client.

Digital archive

- 6.3.2 The digital archive generated by the project will be deposited with a Trusted Digital Repository, in this instance the Archaeology Data Service (ADS), to ensure its long-term curation. Digital data will be prepared following ADS guidelines (ADS 2013 and online guidance) and accompanied by metadata.

6.4 Selection strategy

- 6.4.1 It is widely accepted that not all the records and materials (artefacts and ecofacts) collected or created during the course of an archaeological project require preservation in perpetuity. These records and materials will be subject to selection in order to establish what will be retained for long-term curation, with the aim of ensuring that all elements selected to be retained are appropriate to establish the significance of the project and support future research, outreach, engagement, display and learning activities, i.e., the retained archive should fulfil the requirements of future researchers and the receiving Museum.
- 6.4.2 The selection strategy, which details the project-specific selection process, is underpinned by national guidelines on selection and retention (Brown 2011, section 4) and generic selection policies (SMA 1993; Wessex Archaeology's internal selection policy) and follows ClfA's *Toolkit for Selecting Archaeological Archives*. It should be agreed by all stakeholders (Wessex Archaeology's internal specialists, external specialists, local authority, museum) and fully documented in the project archive.
- 6.4.3 In this instance, given that the level of finds recovery is expected to be relatively low, decisions on selection will be deferred until after the fieldwork stage, and no detailed strategy is presented here. Any material not selected for retention may be used for teaching or reference collections by the museum, or by Wessex Archaeology.

6.5 Security copy

- 6.5.1 In line with current best practice (e.g., Brown 2011), on completion of the project a security copy of the written records will be prepared in the form of a digital PDF/A file. PDF/A is an ISO-standardised version of the Portable Document Format (PDF) designed for the digital preservation of electronic documents through omission of features ill-suited to long-term archiving.

7 OUTREACH AND SOCIAL MEDIA

- 7.1.1 In line with its charitable aims, Wessex Archaeology will, where possible and in consultation with the client, seek opportunities to disseminate the results of the watching brief and engage with the local community through social media, press releases, open days and volunteer involvement, while taking into account issues such as health and safety, confidentiality and vandalism.

8 COPYRIGHT

8.1 Archive and report copyright

- 8.1.1 The full copyright of the written/illustrative/digital archive relating to the project will be retained by Wessex Archaeology under the *Copyright, Designs and Patents Act 1988* with all rights reserved. The client will be licenced to use each report for the purposes that it was produced in relation to the project as described in the specification. The museum, however, will be granted an exclusive licence for the use of the archive for educational purposes, including academic research, providing that such use conforms to the *Copyright and Related Rights Regulations 2003*.
- 8.1.2 Information relating to the project will be deposited with the Historic Environment Record (HER) where it can be freely copied without reference to Wessex Archaeology for the purposes of archaeological research, or development control within the planning process.

8.2 Third party data copyright

- 8.2.1 This document, the watching brief report and the project archive may contain material that is non-Wessex Archaeology copyright (e.g., Ordnance Survey, British Geological Survey, Crown Copyright), or the intellectual property of third parties, which Wessex Archaeology are able to provide for limited reproduction under the terms of our own copyright licences, but for which copyright itself is non-transferable by Wessex Archaeology. Users remain bound by the conditions of the *Copyright, Designs and Patents Act 1988* with regard to multiple copying and electronic dissemination of such material.

9 WESSEX ARCHAEOLOGY PROCEDURES

9.1 External quality standards

- 9.1.1 Wessex Archaeology is registered as an archaeological organisation with the Chartered Institute for Archaeologists (CIfA) and fully endorses its *Code of conduct* (CIfA 2014d) and *Regulations for professional conduct* (CIfA 2014e). All staff directly employed or subcontracted by Wessex Archaeology will be of a standard approved by Wessex Archaeology, and archaeological staff will be employed in line with the CIfA codes of practice, and will normally be members of the CIfA.

9.2 Personnel

- 9.2.1 The fieldwork will be directed and supervised by an experienced archaeologist from Wessex Archaeology's core staff. The overall responsibility for the conduct and management of the project will be held by one of Wessex Archaeology's project managers, who will visit the fieldwork as appropriate to monitor progress and to ensure that the scope of works is adhered to. Where required, monitoring visits may also be undertaken by Wessex Archaeology's Health and Safety manager. The appointed project manager and fieldwork director will be involved in all phases of the investigation through to its completion.

9.2.2 The analysis of any finds and environmental data will be undertaken by Wessex Archaeology core staff or external specialists, using Wessex Archaeology's standard methods, under the supervision of the departmental managers and the overall direction of the project manager. A complete list of finds and environmental specialists is provided in Appendix 1.

9.2.3 The following key staff are proposed:

- Project Manager Bianca Williams-San Martin
- Fieldwork Director Jan Beresford

9.2.4 Wessex Archaeology reserves the right, where necessary due to unforeseen circumstances, to replace nominated personnel with alternative members of staff of comparable expertise and experience.

9.3 Internal quality standards

9.3.1 Wessex Archaeology is an ISO 9001 accredited organisation (certificate number FS 606559), confirming the operation of a Quality Management System which complies with the requirements of ISO 9001:2015 – covering professional archaeological and heritage advice and services. The award of the ISO 9001 certificate, independently audited by the British Standards Institution (BSI), demonstrates Wessex Archaeology's commitment to providing quality heritage services to our clients.

9.3.2 Wessex Archaeology assigns responsibility to individual managers for the successful completion of all aspects of a project including reporting. This includes monitoring progress and quality; controlling the budget from inception to completion; and all aspects of health and safety for the project. At all stages, the project manager will carefully assess and monitor performance of staff and adherence to objectives, timetables and budgets, while the manager's own performance is monitored by the team leader or regional director. The technical managers in the Graphics, Research, GeoServices and IT sections provide additional assistance and advice.

9.3.3 All staff are responsible for following Wessex Archaeology's quality standards but the overall adherence to and setting of these standards is the responsibility of the senior management team who, in consultation with the team leaders/regional directors, also ensure projects are adequately programmed and resourced within Wessex Archaeology's portfolio of project commitments.

9.4 Health and safety

9.4.1 All works will be undertaken in accordance with the *Health and Safety at Work Act 1974*; the *Management of Health and Safety at Work Regulations 1999* and all other applicable health and safety legislation.

9.4.2 Wessex Archaeology is an ISO 45001 accredited organisation (certificate number OHS 744383), confirming the operation of an Occupational Health and Safety Management System that complies with the requirements of ISO 45001:2018. The award of the ISO 45001 certificate, independently audited by the British Standards Institution (BSI), demonstrates Wessex Archaeology's commitment to delivering effective risk management across all its activities.

9.4.3 Wessex Archaeology will, for all projects, produce one or more task and site-specific risk assessments and method statements (RAMS), which will ensure our staff can work safely



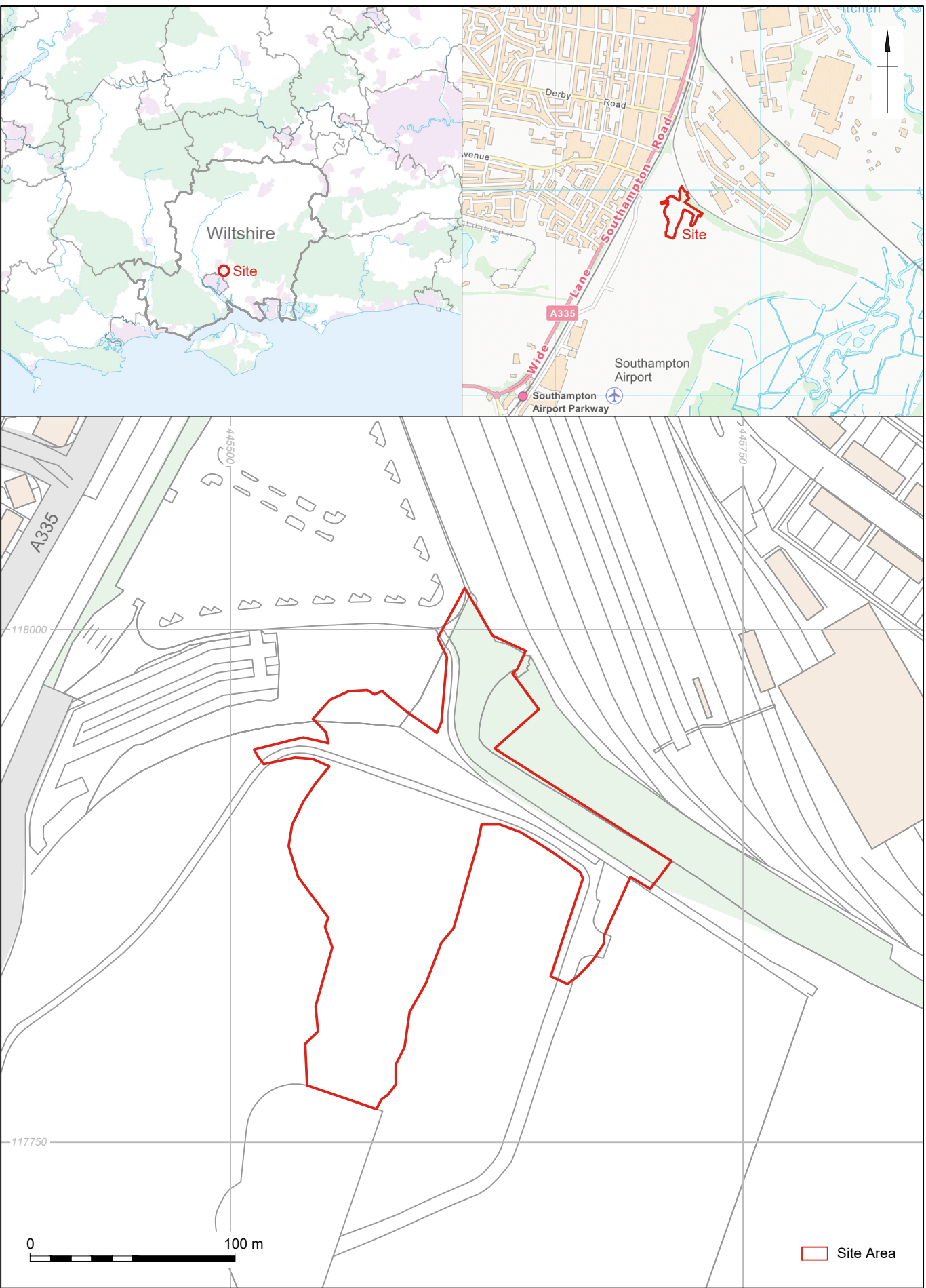
on the site. A copy of the RAMS and our Health and Safety Policy can be provided to the client. All staff on our sites will be made fully familiar with the RAMS before work commences.

9.4.4 We aim to work collaboratively on health and safety with clients and, where separately appointed, with principal contractors. We expect clients to provide in good time all the necessary risk information about a site that may affect the archaeological work, such as locations of utilities or any known ground contamination. We will comply with the project specific Personal Protective Equipment (PPE) requirements, and any other specific additional requirements of the Principal Contractor.

9.4.5 All fieldwork staff are certified through the Construction Skills Certification Scheme (CSCS) and have undergone UKATA Asbestos Awareness Training. Staff who carry out specific tasks are suitably trained and competent to do so through training accredited by the Construction Industry Training Board (CITB), Institution of Occupational Safety & Health (IOSH) and the National Plant Operators Recognitions Scheme (NPORS).

9.5 Insurance

9.5.1 Wessex Archaeology holds Employers Liability (£15,000,000), Public Liability (£15,000,000) and Professional Indemnity (£10,000,000) policies.

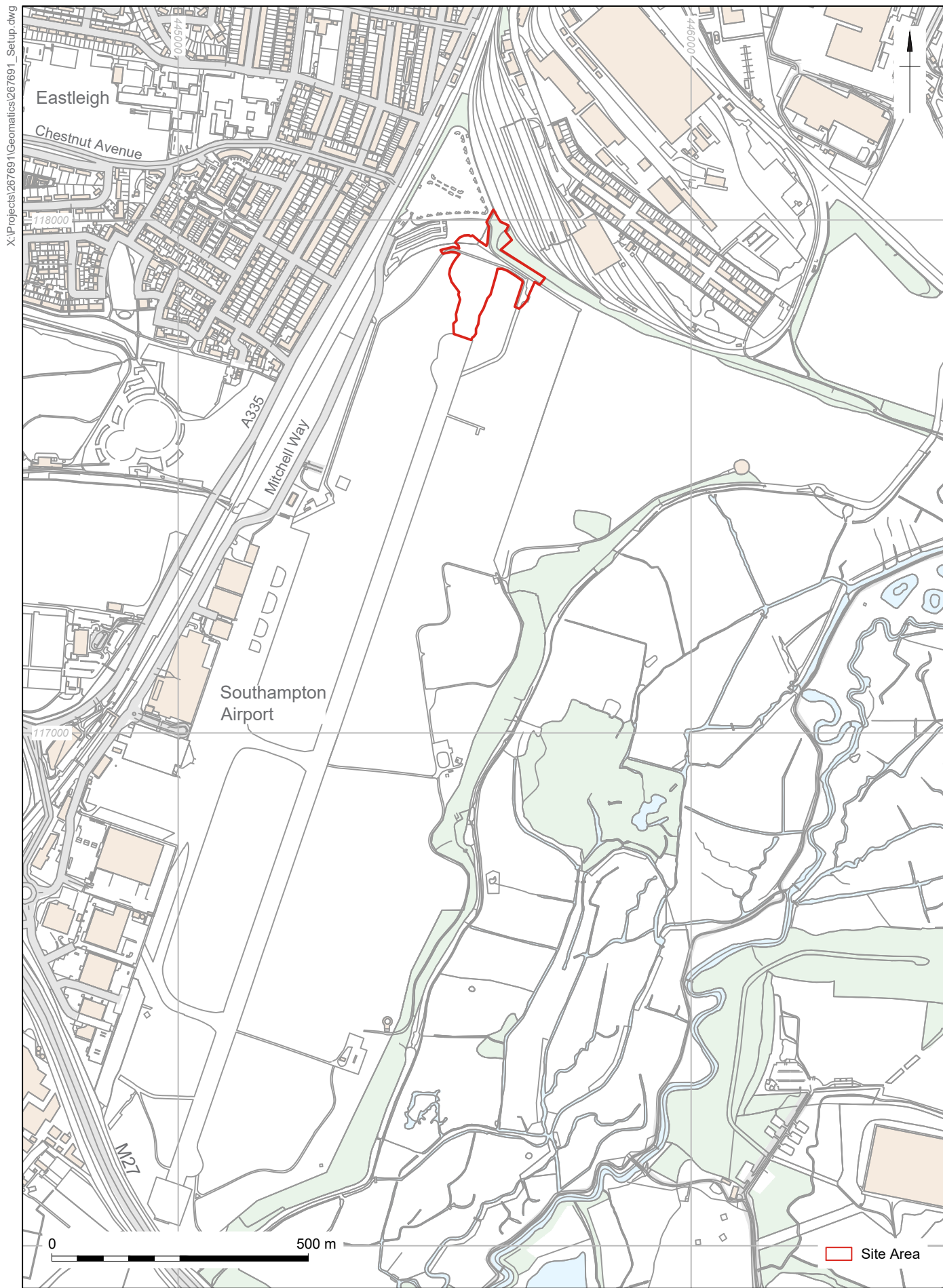


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Figure 1: Site location and proposed works





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Figure 2: Site area in context

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APPENDICES

Appendix 1 Finds and environmental specialists

Name	Qualifications	Specialism
Sander Aerts	BA, MSc	Archaeoentomological remains, animal bone, marine shell and archaeobotanical remains (carbonised)
Phil Andrews	BSc; FSA; MCIfA	Slag and metal working debris
Ceridwen Boston	BSocSc; MA; MSc; DPhil	Osteoarchaeology; funerary archaeology
Elina Brook	BA; MA; PCIfA	Later prehistoric and Romano-British pottery, and small finds
Alex Brown	BA; MSc; PhD	Geoarchaeology, palynology
Kirsten Egging Dinwiddy	BA; MA; MCIfA	Human remains (inhumations)
Erica Gittins	BA; MA; PhD	Prehistoric flint
Phil Harding	PhD	Prehistoric flint, particularly Palaeolithic flint
Lorrain Higbee	BSc; MSc; MCIfA	Animal bone
Matt Leivers	BA; PhD; ACIfA	Prehistoric pottery and flint
Inés López-Dóriga	BA; MA; PhD	Archaeobotanical remains
Erica Macey-Bracken	BA; ACIfA	Post-medieval finds, ceramic building material and worked wood
Katie Marsden	BSc	Pottery from prehistoric to post-medieval/modern. Metalwork of all periods, including coins. Small and bulk finds including fired clay, ceramic building material, worked bone
Jacqueline McKinley	BTech; FSA	Human remains (inhumations and cremations)
Lorraine Mephram	BA; MCIfA	Pottery and other ceramic finds of all dates, concentrating on later prehistoric and post-Roman; ceramic building material; clay tobacco pipe; glass of Saxon or later date; small finds
Nicki Mulhall		Geoarchaeology and archaeobotanical remains
Richard Payne	BSc; MSc; MPhil	Geoarchaeology
Emma Robertson	BA; MSc	Human remains (inhumations)
Megan Scantlebury	BA, MSc	Archaeobotanical remains
Rachael Seager Smith	BA; MCIfA	Pottery with particular emphasis on Roman ceramics; and metalwork, fired clay, ceramic building material, stone, worked bone, shale, glass, and wall plaster
Andrew Shaw	BA; MA; PhD	Palaeolithic lithic artefacts and Pleistocene geoarchaeology
Amy Thorp	BA; MA	Pottery with emphasis on Roman ceramics, small finds
Ed Treasure	BSc; MRes; PhD	Archaeobotanical remains, including plant remains and charcoal/wood



Wessex Archaeology Ltd registered office Portway House, Old Sarum Park, Salisbury, Wiltshire SP4 6EB
Tel: 01722 326867 Fax: 01722 337562 info@wessexarch.co.uk www.wessexarch.co.uk



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