Pyestock Testing Facility, Cody Park, Farnborough, Hampshire:

Walkover Survey, Historic Building Record and Watching Brief

Planning Application: 09/00746/MAJOR

National Grid Reference Number: SU 8400 5430

AOC Project No: 30839

Site Code: A2010·85

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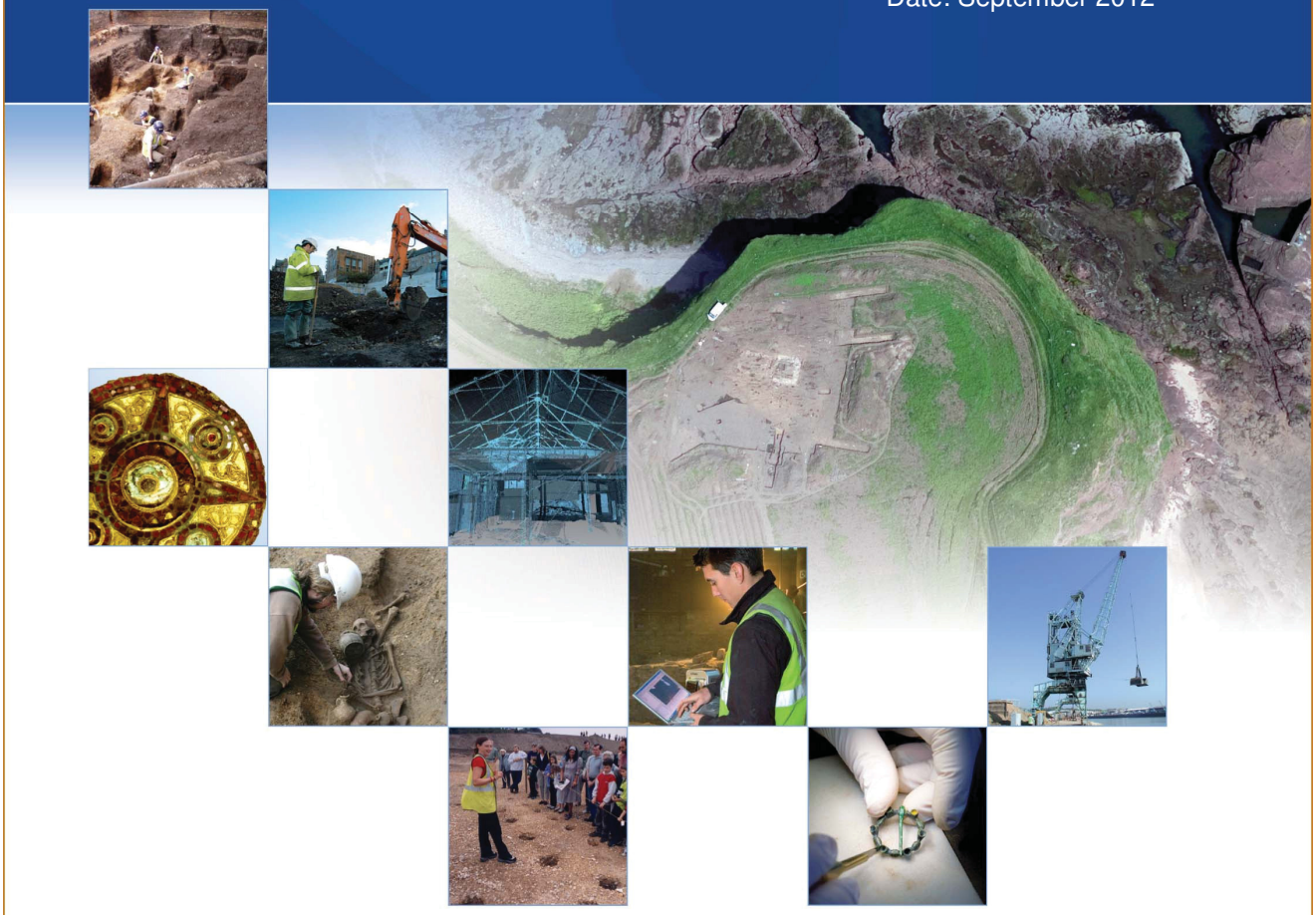

AOC Archaeology Group

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Pyestock Testing Facility, Cody Park, Farnborough, Hampshire: Walkover Survey, Historic Building Record and Watching Brief

On Behalf of:	**Environ** 5 Stratford Place London W1C 1AX
National Grid Reference (NGR):	**SU 8400 5430**
AOC Project No:	**30839**
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This document has been prepared in accordance with AOC standard operating procedures.

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Summary

A programme of walkover survey, historic building recording and watching brief was undertaken at the site of the former Pyestock Testing Facility at Cody Park, near Farnborough, in advance of development. The site was developed from the 1940s, and closed in 2002, having researched and developed military and passenger aeroplane jet engines. After the facility was closed, the buildings were razed to the ground. Only brick and concrete footings with surfaces of tarmac and concrete survive, offering few clues to the function and form of the buildings on site.

Work on the ground beneath the footings and in the general area of the site was also monitored. This showed topsoil directly over clean natural sand, with no subsoil interface. This strongly suggests that the site may have been generally levelled and landscaped during the ownership of the site by the National Gas Turbine Establishment

No further building recording or archaeological monitoring is recommended for this site. The results will be published through the ADS website, and copies of the report available at the local studies library.

1. Introduction

1.1 This document presents the results of a programme of walkover survey, historic building recording and watching brief carried out at the site of the Pyestock Testing Facility southwest of Farnborough. The survey was carried out to Level 1 and additional recording carried out where further information could be collected. A rifle range known to be on site was marked for recording, but lies beyond the development area. Where accessible, this was also recorded. The underlying deposits of the site appear to have been stripped in the past, during the development of the testing facility, and no archaeological remains were identified.

1.2 The site is located at National Grid Reference (NGR) at SU 840 543, north of the Cody Technology Park between the settlements of Fleet and Farnborough. The east of the site was occupied by a car park. The northeast of the site is occupied by mature deciduous woodland comprising a mixture of silver birch and oak trees. The site is bounded by Cody Technology Park to the south and west and by an unclassified road to the north and east. The on-site vegetation was cleared in February 2011 under an ecological watching brief, which reduced most of the vegetation to near ground level. At the time of the archaeological survey the vegetation had re-grown to low levels with isolated patches of scrub around the site.

2. Project Background

2.1 The local planning authority is Hart District Council. Archaeological advice to the borough is provided by Hannah Fluck, Senior Archaeologist at Hampshire County Council's Department of Landscape, Planning and Heritage.

2.2 The testing facility had been demolished after closure, with only the concrete floors, foundations and hardstanding remaining. The proposed new development comprises new high-tech, enterprise and flexible business units, two new data centres and associated parking, access and landscaping.

2.3 Planning consent for the development (Planning Application Ref: 09/00746/MAJOR) was granted subject to a number of conditions.

2.4 An assessment of the potential archaeological significance of the site was undertaken in 2009(AOC) as part of the Environmental Impact Assessment (EIA) and Environmental Statement (ES) that accompanied the planning application (09/00746/MAJOR). Condition 27 to the planning consent required the following:

No development shall take place until the applicant has secured the implementation of a programme of archaeological work in accordance with a written scheme of investigation submitted in writing and approved by the LPA. This programme of work should take into account the recording of structures associated with the Pyestock Jet Engine Testing Facility, the rifle range and the identification and recording of any previously unknown archaeological deposits.

2.5 The next stage in the process was the production of a Written Scheme of Investigation (WSI) for the work (AOC 2010). This detailed the methodology for recording and was approved by Hannah Fluck prior to the start of work on site.

2.6 The WSI conformed to the requirements of the National Planning Policy Framework (NPPF) issued by the Department for Communities and Local Government (DCLG 2010). The methodology was also designed in accordance with current best archaeological practice and local and national standards and guidelines:

- English Heritage – Management of Archaeological Projects (EH 1991).

- Institute for Archaeologists – Code of Conduct (IfA 2008c).
- English Heritage – Understanding Historic Buildings: A Guide to Good Recording Practice (EH 2006)..

3. Geology and Topography

3.1 The site at Cody Park is surrounded by a perimeter bund constructed during the remediation process in 1999. Within the bunded area the site slopes gradually downhill from south to north.

3.2 Geotechnical site investigation works were undertaken in 1998 (DTS 1998) and 2000 (WYGE 2000). The solid geology of the site is described as Barton Beds resting on Bracklesham Beds overlain by gravel and sand deposits. Geotechnical test pits revealed the thickness of made ground to vary between 0.5m and 3.1m across the site above the orange-brown natural sand (Structural Soils 2007). The natural sand was noted at an average depth of approximately 1.5 m below ground level and as such, any buried archaeological deposits or most features are likely to be located above 1.5m. Made ground was identified in 17 of the 22 locations and was typically found in areas where buildings and previously occupied land in the north, centre and south of the site.

3.3 Made ground in the south of the site typically comprised concrete bases with underlying concrete foundations. The thickness of made ground ranged from 0.4m to 1.25 m. Made ground in the north and centre of the site typically comprised reworked orange/brown fine sands with brick and concrete cobbles identified. Made ground was also identified in the car park in the west of the site. The north-east part of the site which has been least disturbed by past development also contained deposits of peaty clay which were observed to contain wood fragments.

4. Archaeological And Historical Background

4.0.1 The following historical background is taken from Chapter 9 of the approved Environmental Impact Assessment undertaken for the site in 2009 (AOC 2009).

4.1 Prehistoric (c. 500,000 BC – AD 43) and Roman (AD 43 – AD 410)

4.1.1 There is little evidence for use of the study area prior to the Roman period and it is possible that early settlement of the site was inhibited by the poor soil conditions observed across the area. It should be noted however that, owing to long period of government ownership, very little archaeological work has been undertaken in the area and as such, the prehistoric potential of the site remains largely unknown.

4.1.2 Whilst no known significant Roman settlements have been identified in close proximity to the site, the nearby discovery of Roman finds is indicative of Roman activity in the locality. Three copper Roman coins included a probable coin of Commodus dating from 182-192 AD and a probable coin of Antonunianus and Galeniius 305-311 AD. The third coin was defaced and as such unidentifiable. The discovery of possible Roman remains in the new Pyestock testing facility north-west of the Proposed Development was discussed by Holt (Holt 1952), who makes reference to the Romans maintaining *"some sort of a station here"*. The absence of further details regarding these remains precludes further assumptions about them but is indicative of Roman activity near to the site.

4.2 The Early Medieval (AD 410 – AD 1066) and Medieval (AD 1066 – AD 1536) Periods

4.2.1 The site lay within the hundred of Crondall, which was granted to the Old Monastery at Winchester in AD 976 by King Edgar. The hundred of Crondall was described in a charter as containing the parishes of Aldershot, Crondall, Farnborough, Long Sutton and Yateley. By 1086, the hundred of

Crondall was owned by the Bishop of Winchester as evidenced by the Domesday Book. Crookham and Fleet were tithings of Crondall.

4.2.2 The poor sand and loamy acidic soils of the heathland on which the site is located is reflected in the Domesday Book of 1086, which describes sparse settlements and a low population density in what is a comparatively large area of the county. North of the site was the medieval village of Southwood, which was first documented in AD 1248 as 'sudwe' and may have extended south into the site.

4.2.3 The settlement of Fleet, located west of the site, was first recorded in 1313 as 'Flete' and in 1505 as 'Flete pond'. The name 'Fleet' probably derives from the Old English 'Fleot' meaning creek or pond (Coates 1989). Farnborough to the west is derived from the Old English 'fern hill'

4.2.4 In the later medieval period, population growth in the countryside increased the demand for land and new settlements were created upon more marginal land such as the heathlands. Many hamlets grew from isolated farmsteads and these inhabitants expanded their cultivated land (Page 1973). It is thus probable that activity on the site during the medieval period would have been largely related to the exploitation of woodland or heathland.

4.3 Post-Medieval and Modern Periods (AD 1536 – 1900)

4.3.1 Early maps of the site such as Morden's map of 1695 are too small in scale and stylised to provide any indication of land-use at this time and only the larger settlements such as Farnborough and Cove are shown. Taylor's map of 1759 shows the area of the site as heathland associated with Aldershot Common.

4.3.2 Milne's map of 1791 shows the site as unoccupied land south of the enclosed settlement of Southwood. Greenwood's map of 1826 shows the north and central parts of the site as unoccupied land possibly associated with the nearby Ivyley Farm to the south. The southeastern part of the site is part of a wider woodland plantation that extends southwards to the Basingstoke Canal.

4.3.3 The heathland of which the site was a part was largely unaffected by the parliamentary enclosures of the 18th and early 19thcenturies. The Yately Tithe Map of 1846 denotes the centre of the site as heathland under the ownership of a Mr Williams. The northern and eastern parts of the site are recorded as woodland plantation under the ownership of a Sarah Williams.

4.3.4 Ordnance Survey maps from 1871 mark three boundary stones aligned along Ively Road in close proximity to the site. The site is shown to be part of a large area of enclosed heathland. Ordnance Survey maps from 1897 show no changes within the site itself but south of the site Ively Farm and kennels are shown, with Ball Hill further south. North of the site is a farm called Withey Farm, with Witheypond Cottage. Cartographic evidence thus shows that the study area was initially unoccupied open and later enclosed heath in the northern part of Aldershot Common. This was gradually afforested from the early 19th century following the establishment of Pyestock Wood south of the site. By the late 19th century, almost all of the surrounding land was woodland.

4.4 Modern Period (AD 1900 – Present)

4.4.1 The story of aviation in the vicinity of the site begins in 1905 when the Royal Engineers started a balloon factory; later known as the balloon school at the northern end of Farnborough Common north of the site. The arrival of Samuel Franklin Cody in February 1905 brought the first powered aircraft to Farnborough and in 1908 the first sustained manned aeroplane flight in the British Isles (Brooks 1996). On 7 August 1913 he was test flying his latest design, the Cody Floatplane, to Southampton, where the aircraft would be fitted with its floats to carry out test flights from water. He agreed, however, to give a flight to the Hampshire cricketer William Evans and took off at 10:30 am with

Evans as a passenger. After about eight minutes the aircraft broke up in the air at a height of about 200ft (60m) with Cody and Evans, who were not strapped in, being thrown out of the aircraft. The plane crashed at Ball Hill, to the south of the site, which is now within QinetiQ's Technology Park.

4.4.2 In the early part of the 20th century the site itself remained as unoccupied scrub and heathland north of Pyestock Wood. All Ordnance Survey Maps up to 1961 show the site as undeveloped. This is a consequence of it being a Ministry of Defence site, and therefore unmapped.

4.4.3 Increased specialisation in aviation technology during the 1930s led to the development of research facilities dedicated to specifics of aircraft design. In 1936, at a site next to the Royal Aircraft Establishment in Farnborough, the company Power Jets Ltd was started by Sir Frank Whittle, for the research and development of gas turbine technology. Aviation technology was further transformed by the introduction of the jet engine in 1941 (Cooper 1996), which created a demand for new specialised facilities to investigate aerodynamics, and aero engines. This was the Royal Aircraft Establishment (RAE) Turbine Division. During 1942, jet engine research was transferred to a specially built out-station within the site at Pyestock which temporarily became known as the Turbine Division of Experimental Engine Department. In 1944 Power Jets Ltd. (set up by Frank Whittle and two colleagues in 1936) merged with the RAE Turbine Division and was nationalised to form Power Jets (Research and Development) Ltd. In 1946 it was reconstituted as a division of the Ministry of Supply to form the National Gas Turbine Establishment before being renamed Powerjets Ltd in 1944 (Cooper 1996).

4.4.3 The growth and development of the Pyestock testing facility is documented by a series of maps, plans and aerial photographs of the site dating from the 1940s and early 1950s. Aerial photographs from 1942 show the site to be occupied by open heathland. Some disturbance to the eastern portion of the site is indicated by a number of roughly rectangular and circular earthwork structures indicative of the use of the site by the military possibly as a rifle range.

4.4.4 Aerial photographs from 1946 show the central south part of the site to be occupied by numerous structures which were part of Whittle's original testing facility. Aerial photographs from July of the same year show the test facility to have expanded north across the site to include a small L-shaped structure and a slightly larger reverse L-shaped structure. Aerial photographs from March 1948 show the ancillary structures associated with the compressor house to have been extended to the east. Aerial photographs from May of the same year do not show any changes within the Site. Oblique aerial photographs from c 1950 show the site to be occupied by a cooling tower

4.4.5 The continued development of the gas turbine engine ensured a need for both more elaborate component test facilities and a full-scale engine test facility to simulate altitude and forward thrust conditions. As a consequence cells one and two were constructed on a new site 'Pyestock north' north-west of the site (Brooks 1996). In the 1960s the National Gas Turbine Establishment (NGTE) became a national research station in its own right and in this situation it rapidly acquired very large research capabilities. The first test facilities provided by NGTE at Pyestock were developed to meet the needs of component testing and comprised air compressing equipment and test house with other associated small-scale buildings. These culminated at the Pyestock site north-west of the Site in the mid 1960s with the massive resources necessary for the development of the Olympus engines and intakes for the Concorde aircraft, as well as, engine development work for P1127 Harrier TSR 2, Jaguar and Tornado. (Cooper 1996).

4.4.6 The relationship between the site and the new Pyestock site is shown on a plan of the site from 1974. The two sites were linked by a road running east-west known as 'The Howf'. By the 1970s the majority of testing was undertaken within the larger facility to the north-west but the structures within

the site continued to function as part of the larger Pyestock facility. Indeed the design and layout of both sites reflects the close spatial and functional interrelationship necessary for the jet engine testing process. The two Pyestock sites were unified in 1982 when NGTE became RAE Pyestock. The RAE remained in existence on the site until 1991 when it became the Defence Research Agency (DRA) and broadened its horizons beyond the world of aviation. There was a name change again in 1995 when it became the Defence Evaluation and Research Agency (DERA) and in 2002 the MOD sold off most of the agency to QinetiQ.

5. Strategy

5.1 Aims of the Investigation

5.1.1 The aims of the archaeological recording were defined as being:

- To establish or otherwise the presence/absence of archaeological remains within the site.
- To determine the extent, condition, nature, character, quality and date of any archaeological remains should they be encountered.
- To record and sample excavate any archaeological remains should they be encountered.
- To assess the ecofactual and environmental potential of any archaeological features and deposits.
- To determine the extent of previous truncations of the archaeological deposits.
- To enable the archaeology advisor to Hart District Council to make an informed decision on the status of the condition and thereby to advise Hart District Council as to this status.
- To make available to interested parties the results of the investigation.

5.2 The specific aims of the archaeological watching brief were defined as being:

- Determine the presence of any Prehistoric/Romano-British activity on site. Does this evidence indicate the presence of settlement at this time?
- Determine the presence of any early medieval/medieval activity on site? Is there any evidence for settlement at this time?
- Assess the potential of the site to inform on the post-medieval development and chronology of the Farnborough/Fleet area
- Record to Level 1 RCHM survey the remains of a former rifle range within the site
- Assess the existing above ground concrete footings for evidence to inform on the activities undertaken within the Pyestock annexe.
- Assess the degree and extent of truncation of earlier deposits by construction of the Pyestock Facility on the site and subsequent remediation.
- Record any below surviving below ground remains associated with the Pyestock Facility.

5.3 The final aim was to make public the results of the investigation, subject to any confidentiality restrictions.

5.2 Methodology

5.2.1 Site procedures were defined in the written scheme of investigation (AOC 2010). All work was carried out in accordance with local and national guidelines (IfA 2008a-c, IfA 2000, English Heritage 2006).

5.2.2 Prior to commencing work, a unique site code (A.2012.85) for the project was agreed in consultation with Winchester Museum and was used as the site identifier for all records produced.

5.2.3 The archaeological work was carried out between 7th August and 14th September 2012.

5.2.4 Whilst the location of the Rifle Range was identified, it was not possible to access the location of the shooting gallery. This lies outside the area of development, within an area of ecologically sensitive and dense woodland, shrubs and undergrowth, and is not expected to be affected by this current development. This area was therefore scoped out of the programme of work in agreement with Hannah Fluck.

5.2.5 The site work was supervised by Les Capon under the overall management of Melissa Melikian, Operations Director. Archaeological advice to the borough is provided by Hannah Fluck, Senior Archaeologist at Hampshire County Council's Department of Landscape, Planning and Heritage.

6. Results

6.1 Introduction

6.1.1 The group of buildings representing the long-demolished Pyestock testing facility at Farnborough are little more than expanses of concrete, with fragmentary brick walls defining the partial remains of the upstanding structures. A total of 13 individual buildings were identified on site. A walkover survey of the site plotted the extent of areas of concrete, and the general topography (Figure 2).

6.2 Sequence of Deposits

6.2.1 The site measures 400m by 250m, and has a general underlying topography of a northward slope downhill from 75mOD in the south to 72mOD in the north, with the western side of the site lying at 74mOD, and the east at 73mOD. The drop from north to south is therefore 3m over 250m: 1:83. This very gentle slope is interrupted by a mound of made ground in the centre of the site, made up to 77.3mOD. This was used as the platform for many of the buildings of the NGTE. The ground was sampled to determine its character during the archaeological work.

Description	Depth	OD Height of deposit
Building Platforms	1.75m	74.94m to 77.27m
Topsoil	0.12m	72.15m to 77.09m
Made Ground	2.65m	74.62m to 77.27m.
Naturally-lain sand	NFE	72m to 75.2m.

Table of site stratigraphy

Plate 1: Made Ground Deposits

6.2.2 Generally, across the site, there was no subsoil interface between naturally lain orange brown sand and the modern topsoil of the site. This strongly suggests that general levelling of the site may have occurred, and it is tempting to ascribe this to work carried out during construction of the test facility. The made ground in the centre of site comprises mixed layers of yellowish brown sandy silt to the north of the area, and bluish grey silty sand in the centre, with occasional inclusions of brick and

lenses of dark greyish brown sandy silt. A maximum depth of 2.7m of made ground was seen by Building 8 (Plate 1). It is possible that the made ground derives from landscaping of the site.

6.2.3 The site has been impacted by the demolition and clearance process following closure of the site. As well as removal of most building materials, fixtures and fittings from this research site, the ground had been landscaped again, with a perimeter bund formed around the edge of the sites. This may therefore represent two phases of ground reduction. The routes around the NGTE were mostly visible, specifically 'The Howf', which runs around a sub-oval bed before linking the old site with the New Pyestock facility to the northwest (Figure 3).

6.2.4 The stripping of current topsoil was monitored through a series of site visits. At no time were any deposits other than natural sand seen, that predated the NGTE building remains.

6.3 Building 1 (Figure 4, Plate 2)

6.3.1 Building 1 is an almost square block, measuring 5.7m by 5.3m, represented by a concrete floor within brick footings standing two courses higher than the surrounding concrete hard standing. The bricks are orange-red, measuring 230mm by 112mm by 68mm, and laid in English Bond. The bricks are slightly frogged, and the bonding material has cement. The foundation is 0.23m wide, suggesting a building without reinforced walls. The concrete floor is 0.25m deep, and has no features. This is not depicted on any available plans of the site, so its function is unclear.

Plate 2: Building 1, Looking East

6.3.2 The lack of any details, including a threshold or evidence of lost fittings in the floor reduces the understanding of the form and function of this building.

6.3 Building 2 (Figure 4, Plate 3)

6.3.1 A long channel with reinforced concrete sides and base marks Building 2. It runs northeast-southwest, for a distance of 54.8m, and is 1.20m wide internally, and 1.15m deep. The walls and floor are concrete, the walls being 0.17m wide and reinforced with steel bars. The channel slopes downhill slightly to the northeast. The northeastern end is somewhat damaged, and widens out towards the northeast, where there are scant remnants of flanking brick structures each 1.11m wider than the channel. The bricks appear slightly more modern than those used for Building 1, being 220mm by 110mm by 70mm, and less-regularly well fired.

6.3.2 The channel is probably a duct for pipework: It has a cruciform southwestern end, which may indicate that pipes within led to/from different locations. Two offshoots from the duct run northwest and southeast; both have brick ends which appear to be blocking events. However, there was no evidence for the duct continuing beyond the bricks. The addition of the bricks indicates a change in use or reduction in scale of the operations carried out in relation to this duct. Again, such poorly preserved remains reduce interpretation, but the building appears to be related to Buildings 3-6. Overlaying its location on the historic map (Figure 3) shows that this duct runs between a garage and a test bed.

Plate 3: Building 2 Looking Southwest

6.4 Building 3 (Figures 3 and 4, Plate 4)

6.4.1 At the northeastern end of the duct is a concrete bound area with the remains of four brick stub walls projecting northeast for 0.92m, at intervals of 1.20m. In similar military establishments (AOC 2011), such stub walls have been seen to form the supports for benches or be supports for tanks. Adjacent to this is Building 4. This is part of the Fuel and Power Laboratory.

Plate 4: Building 3

6.5 Building 4 (Figure 4)

6.5.1 Building 4 is a short sunken channel 7m long and 0.69m wide, possibly a duct, covered by a welded I-beam frame with cross members. Only a short length of this structure survives, and it may be that the frame once held floor plates. It is sunk within a large expanse of concrete that represents the base of the Fuel and Power Laboratory. There are no upstanding foundations that represent the walls of this building.

6.5.2 The expanse of concrete extends north and eastwards, and encompasses the area shown (Figure 3) as the Anechoic Chamber, that is a chamber with a low degree of reverberation. No upstanding remains or wall footings that were evidence for the location of the extent of the structure were observed during the works.

6.6 Building 5 (Figures 3 and 4)

6.6.1 On the northern side of the long duct are the remains of a rectangular building, standing two courses of brick high, 13m southwest-northeast and surviving for 6m wide. These walls are built of bricks measuring 235mm by 105mm by 67mm. The walls are rendered on the inside, and the base is a single concrete slab. The southern side of the feature is truncated to ground level, and there are no associated fittings. This is marked on the 1970s map (Figure 3) as 'Artificial Load Pond'. The pond would have been used to dissipate or balance electric power from a generator or turbine by the use of a rheostat. This building would have functioned in tandem with the adjacent test bed (Building 6).

6.7 Building 6 (Figures 3 and 4, Plate 5)

6.7.1 2m west of the Artificial Load Pond are the remains of a building, parts of which appeared to have been reduced to below ground level, with fragments of brick lying in short sections above concrete footings 1.1m deep, and a spread of concrete 22m long and 6m wide representing the floor surface of the former test bed. The brick walls are just 0.25m wide, and may have held a lightweight structure other than a solid building. The lines of the walls are only traceable for a limited distance.

The limited survival of building remains may indicate that it was taken down before final closure of the facility.

Plate 5: Building 6 Looking North

6.8 Building 7 (Figures 3 and 4)

6.8.1 Near the southern edge of the mound is a rectangular patch of concrete measuring 15.7m by 8.4m with small extensions on the north and east sides. This is another test bed. The central rectangular area is concrete, and is bound by brick walls 0.25m wide atop deep concrete footings. The floor is built with three sections of below-ground ducts. One runs from the centre of the building in a southwesterly direction. A second duct runs near the northwest side before turning southeast, the third runs near the southeast side before turning northwest. This effectively gives a central platform as the test bed. Each of the ducts is bound by I-beams set in concrete, and are just 0.4m wide.

6.8.2 On the east is a smaller rectangular area of flooring, just 4m by 2m in plan, which may be the location of a subsidiary activity such as a store or switch room. A second ancillary space on the northern edge may have been for a similar function.

6.9 Building 8 (Figures 3 and 4, Plates 6 and 7)

6.9.1 The building is represented by a rectangular footing on the edge of the flat plateau in the centre of the site. It measures 9.9m by 6.4m east-west. This is the southern part of one of the test beds (Building 239), and has two parts of different character. The western part of the building foundation has a concrete footing 0.25m wide which may represent the line of a wall. On the north and south sides are thick reinforcing I-beams across the length of the block. These are set into the concrete footings, which are 1.20m deep. The floor surface of the block is formed on a concrete slab 0.30m thick, with a concrete-lined duct in the centre, running eastwards. This presumably held pipework associated with the testing facility. It seems that the substantial concrete foundations and ironwork provide an immobile frame for mounting engines for testing.

6.9.2 The western side of the block has a cast iron ridged plate measuring 4.6m by 1.5m, set within a bed of concrete 0.40m thick, again with an outer wall footing 1.20m deep. The iron plate was 0.22m thick,

with a circular plate towards the western end. As part of the testing facility, this clearly had a slightly different function to the elements of the other remaining test beds.

Plate 6: Iron Plate, Building 8

Plate 7: Building 8, Looking Northeast

6.10 Building 9 (Figures 3 and 4)

6.10.1 A C-shaped building footprint represents the northern part of a test bed , which is of sufficiently different character to be identified separately. It lies directly adjacent to Building 8, at 77.25mOD, upon the flat platform at the top of the mound. The building measures 9.6m square, and has concrete footings with a single surviving course of brickwork above. The red bricks measure 235mm by 105mm by 67mm. and are bonded with cement mortar. There are the remains of internal walls running east-west, suggesting two flanking rooms either side of a central space 3.5m wide. Within the foundations is a spread of concrete, just 0.25m deep. Individual remains of bonding cement show that this surface was formerly tiled, with tiles 0.20m square. The presence of this surface suggests that this was an area subsidiary to the test bed, perhaps an associated laboratory or workstation.

6.10.2 An undefined spread of broken concrete spreads east from the building footings, and was probably once part of it. Two iron plates bolted to the concrete lie 1.8m apart, each 0.25m by 0.15m in plan, with 30mm hexagonal-headed bolts. West of these is a pair of iron reinforcing strips, both 1.7m long.

6.11 Building 10 (Figure 4, Plate 8)

6.11.1 This large expanse of concrete overlooks the northern edge of the central mound at the Pyestock site. The concrete had no defined footings associated with it. It is L-shape in plan, 21.3m northeast-southwest 29.1m southeast-northwest. There is a ramp of tarmac running downhill northeastwards. The lack of any structural evidence suggests that this may have been an open area of hardstanding. If it was covered, it may have been an area of impermanent structures. Building 11 lies at its western end. It is shown on the 1970s plan as a dotted outline rather than an active building, indicating that what was present had been removed by that date, perhaps in conjunction with the expansion of the new Pyestock site.

Plate 8: Concrete of Building 10, Looking East

6.12 Building 11 (Figures 4-6)

6.12.1 This is a rectangular block, part of an area shown only as a dotted outline of the plan from the 1970s. The only area definable as a single unit is an area 12m east-west by 16m north south, divided into two rectangular compartments. To the west is a concrete pad 0.3m thick, which is built concurrently with the western compartment. To the east is an iron-framed bed with ducts either side, leading to a northern, east-west duct. The central bed is 2.50m wide and 9.15m long, with a wider area at the northern end 4.9m by 2.75m. The central bed is supported on a reinforced concrete pad 1.75m deep. This has vertical expanded rubber jointing and a welded hollow rectangular frame running its length with cross members. Both side ducts are 1.75m wide and 0.85m deep, their bases 0.30m thick. The outer walls of the unit are 0.55m wide, and again are or reinforced concrete.

6.12.2 The ducts are narrower as they skirt the northern platform, leading to a cross-duct at the end of the unit that is 0.85m wide. This continues to the western edge of the concrete slab representing building 10.

6.12.3 The form of the block suggests that it may be another test bed, with fuel carried in the ducts, perhaps with a control area at the northern, wider end.

6.13 Building 12 (Figures 3-6, Plates 9 and 10)

6.13.1 This is a small concrete block at the northern edge of the building mound, lying 6.1m north of Building 11. It is not shown on the plan from the 1970s. The block is built on a bed of concrete 0.75m thick, with a footprint of 4.75m east-west and 5.2m north-south. This lies at 74.88mOD. It was unclear whether the base was cut into the made ground, or if the ground was added only after the block was built. The walls of the block rise by 1.75m, and are 0.45m thick, reinforced with steel rods. The concrete appears to have been poured into shuttering. There is a 0.9m square opening in the eastern and western walls, and these are the only openings into the building. The roof of the block is a concrete slab 0.5m thick. The reason for this structure is not clear: there are no internal fixtures or fittings that indicate a function. Equally, the square holes in the walls are not easily accessible.

6.13.2 The block was almost fully filled with mixed clayey sand, and a fibreglass pipe runs through it, between the openings. Possibly, this is a solid base, and rather than using solid concrete, clay was used as infill. However, the clay was uncompacted.

Plate 9: Building 12, Looking Northwest

Plate 10: Passage Around Building 12. Looking Southeast

6.13.3 Along the eastern side of the block is a passageway 1.20m wide, the outer edge formed of 0.17m thickness of reinforced concrete, standing to 77.08mOD. Four projecting corroded iron bars on the wall of Building 12 may mark the height of a wooden walkway. It runs north, where it appears to have opened onto the slope made by the made ground. Southwards, it was accessed from next to Building 11. There is a supporting arch across the passage at the rear of the bock, which is 0.6m deep.

6.14 Building 13 (Figure 4, Plate 11)

6.14.1 A circular brick soakaway was recorded during a watching brief, to the south of the site near building 3. It was constructed of red bricks, each 220mm by 110mm by 72mm, and header coursed. The top was domed, and sealed with a concrete slab 1.5m across. The soakaway was fed by a ceramic pipe of 0.14m diameter in the west side. This is not marked on historic maps, but being of 20th century date, must be part of the Pyestock testing facility infrastructure.

Plate 11: The Soakaway

6.15 The Rifle Range (Figures 3 and 4, Plates 12 and 13)

6.15.1 The rifle range is depicted and titled on the 1970s plan (Figure 3). This still survives on site in part. It is oriented southwest-northeast, with a sheltered shooting stand at the southwest end yet to be located. The targets lay along the range, and leading to a pair of backstops at the northeast end, which probably flanked an end target. The shooting range has been planted or colonised by low grass and birch saplings. The low level of general undergrowth along the range may be an indicator of an underlying surface still present.

6.15.2 The shooting stand is yet to be located, but the Ordnance Survey plans indicate a length of some 100m. There is no extant northwestern boundary to the range: it is presumed lost to modern fencing, general dereliction, and the creation of the bund around the current development area that derives in part form the demolished buildings of the testing facility. The southeastern side of the range is marked by a low fence of chestnut paling in poor condition. Towards the end is a gate that states 'Danger Rifle Range Keep Out' on a wooden board. This is adjacent to the southern of two backstops. The backstops are rounded mounds of sandy silt and gravel 7m by 3m in plan with a concave face towards the shooting stand. A space of 7m between the mounds would have been the location for a target or series of targets. The mounds are now overgrown, yet still stand up to 1m high.

Plate 12: Overgrown Backstops

6.15.3 Approximately 50m southwest of the backstops is a wooden frame comprising two uprights and a crossbeam. This is likely to be a mid-target. It currently leans against a semi-mature birch tree.

Plate 13: Mid Target

7 Conclusions

7.1 The site of the former National Gas Turbine Establishment (NGTE) contains the fragmentary remains of concrete and brick buildings relating to the testing of engines from the 1940s to its closure in 2002. The site appears to have been reduced piecemeal during some of its working life, with all the buildings removed after closure. The removal of the upstanding remains involved the loss of all walls, pipework, machines, plant, temporary buildings, and generally any evidence for the exact nature of the work carried out here. The principal remaining features are landscaping associated with the construction of the testing facility and large expanses of concrete representing the footprints of buildings and external surfaces.

7.2 Building 1 of the survey was a small rectangular footing not recorded on available maps, so its function in unknown.

7.3 Building 2 is a long concrete duct located between a Test Bed (Building 6 and 235 on Figure 3) and a Garage (234 on Figure 3). It ran to/from the Fuel and Power Lab (230 on Figure 3), which is represented by a fragmentary base of a storage area (Building 3) and a short duct (Building 4). Without the 1970s plan, it is unlikely that a function for these buildings could have been determined. The Anechoic Chamber (231 on Figure 3) was represented only by a spread of concrete, and the Garage was not represented at all. The lack of any satisfactory evidence for the Garage may suggest that it was a lightweight structure, little more than a covered area of hard standing. Building 5 is associated with the Test Bed, and is evidence of the technology used on the site, being the pond for the Artificial Load.

7.4 Two Test Beds are represented slightly better. One (Building 7, 237 on Figure 3), had a central solid bed with ducts around it within the building, and may have had brick walls. The second test bed (Building 8 and 9) has a solid iron plate in the southern part, while the northern part of the building had a tiled floor, indicating two very different activities were being carried out. The iron plate is presumed to be the location of the turbine for testing, the tiled floor more likely to be an area for staff.

7.5 The spread of concrete identified as Building 10 offers no real clues to function, and was possibly a store. Next to it, Building 11 appears to have been another Test Bed, if the form of central deep concrete pads surrounded by below-ground ducts is a characteristic of the Test Beds. This building is not shown on the 1970s plan (Figure 3), and is presumed to have been taken down by this time.

7.6 Building 12 is a small concrete block approximately 5m square with openings in the sides through which a pipe passes. Next to it, a partially enclosed walkway seems to have run along the northern edge of the made ground forming the mound upon which the structures were founded. The square block itself is an odd feature. The openings through which the pipe passes are formed as part of the building, yet are not access points. The structure is filled with silty sand, yet it is uncompacted, as if it were a later addition. This, may be a large platform for heavy plant, but the surface is smooth with no fixings. If it were a shelter for safety, then an access would have been expected. It is not shown on the 1970s plan, so had fallen from use.

7.7 Of particular note is the depth of the foundations of the test beds, with the pads up to 1.75m thick, and the use of rubber jointing. The depth of concrete would help stabilise the Test Beds from vibration, and the rubber jointing may also help against vibration.

7.8 Apart from the remains of the NGTE, no archaeological remains were revealed. Although there may have been no ancient remains present prior to the establishment of the facility, the site appears to have been stripped when the site was developed, and a mound raised in the centre of the site, possibly using the stripped materials. This work would have removed any subtle archaeological features.

8 Archive Deposition and Publication

Archive Preparation

8.1 Following completion of each stage or the full extent of the fieldwork (as appropriate) the site archive will be prepared in the format agreed with Winchester Museum. The excavation archive will be security copied and a copy deposited with the National Archaeological Record (NAR).

8.2 The site archive will comprise all artefacts, environmental samples and written and drawn records. It is to be consolidated after completion of the whole project, with records and finds collated and ordered as a permanent record. The archive will be prepared in accordance with *Guidelines for the preparation of excavation archives for long-term storage (UKIC 1990).* On completion of the project

the developer/landowner will discuss arrangements for the archive to be deposited with Winchester Museum

Publication

8.1 Copies of the report will be issued to the Archaeological Advisor, the Local Planning Authority, and the client on the understanding that it will become a public document after an appropriate period of time; any document relating to the planning process is a public document. Copies will also be supplied to the Farnborough Local Studies Library.

8.2 The OASIS form (Appendix A) will be uploaded, and an electronic copy of the report deposited with the Archaeological Data Service (ADS).

9 Bibliography

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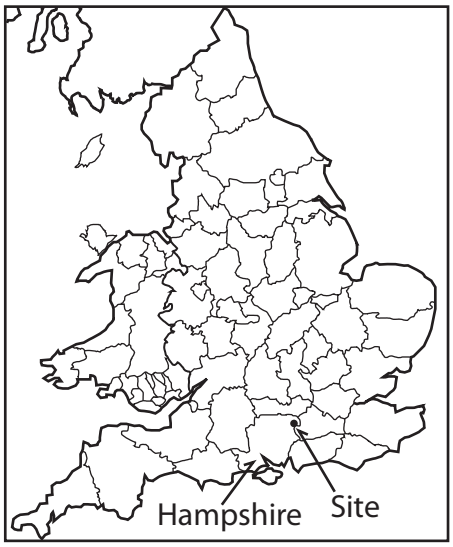
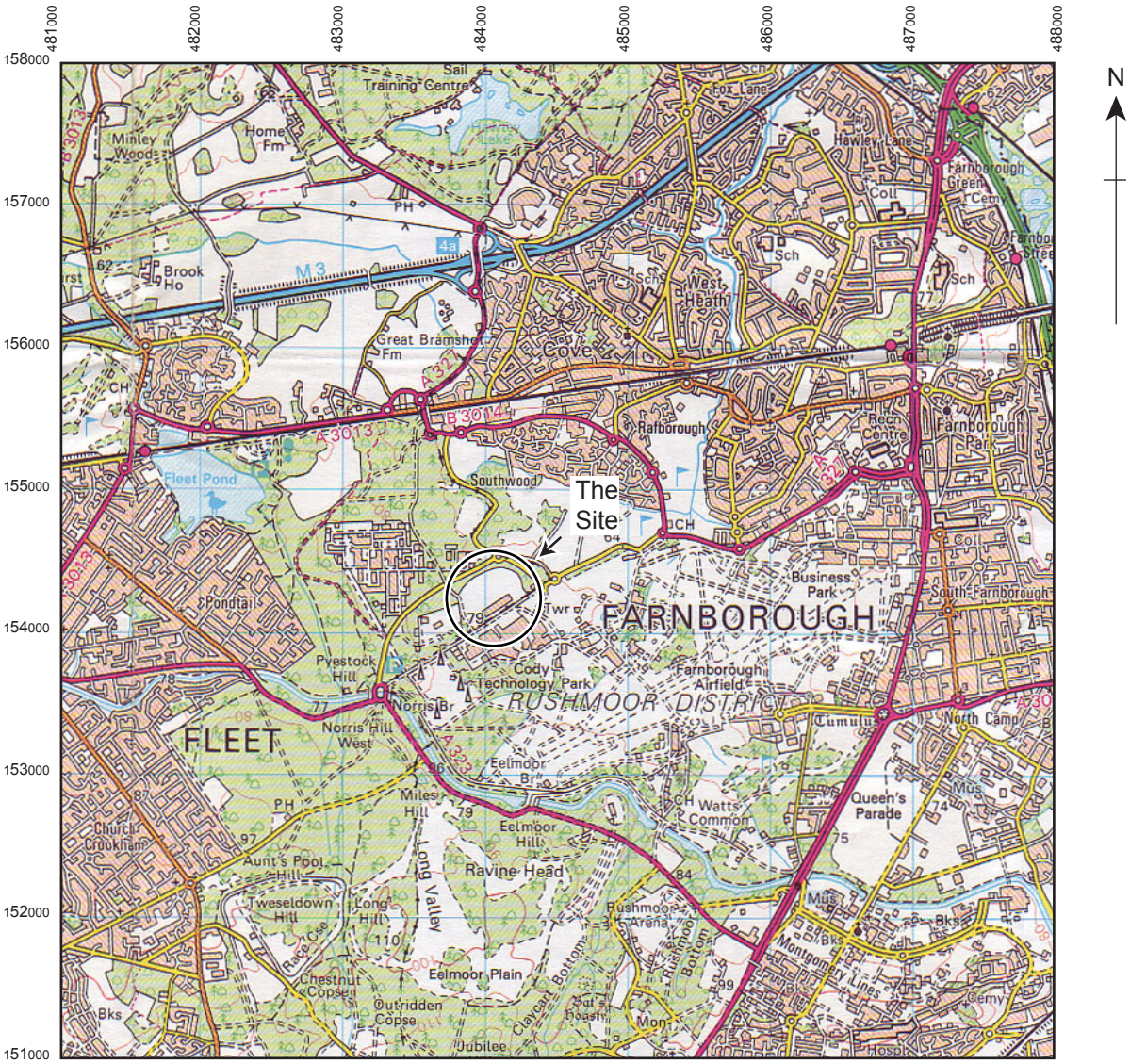


Approximate Site Location
Within England & Wales



Based on the Ordnance Survey's 1:50 000 Landranger map of 2003
with the permission of the Controller of Her Majesty's Stationery Office,
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500m 0 2 km

1:50 000

Figure 1: Site Location

PYESTOCK TESTING FACILITY, CODY PARK, FARNBOROUGH, HAMPSHIRE:
HISTORIC BUILDING RECORD

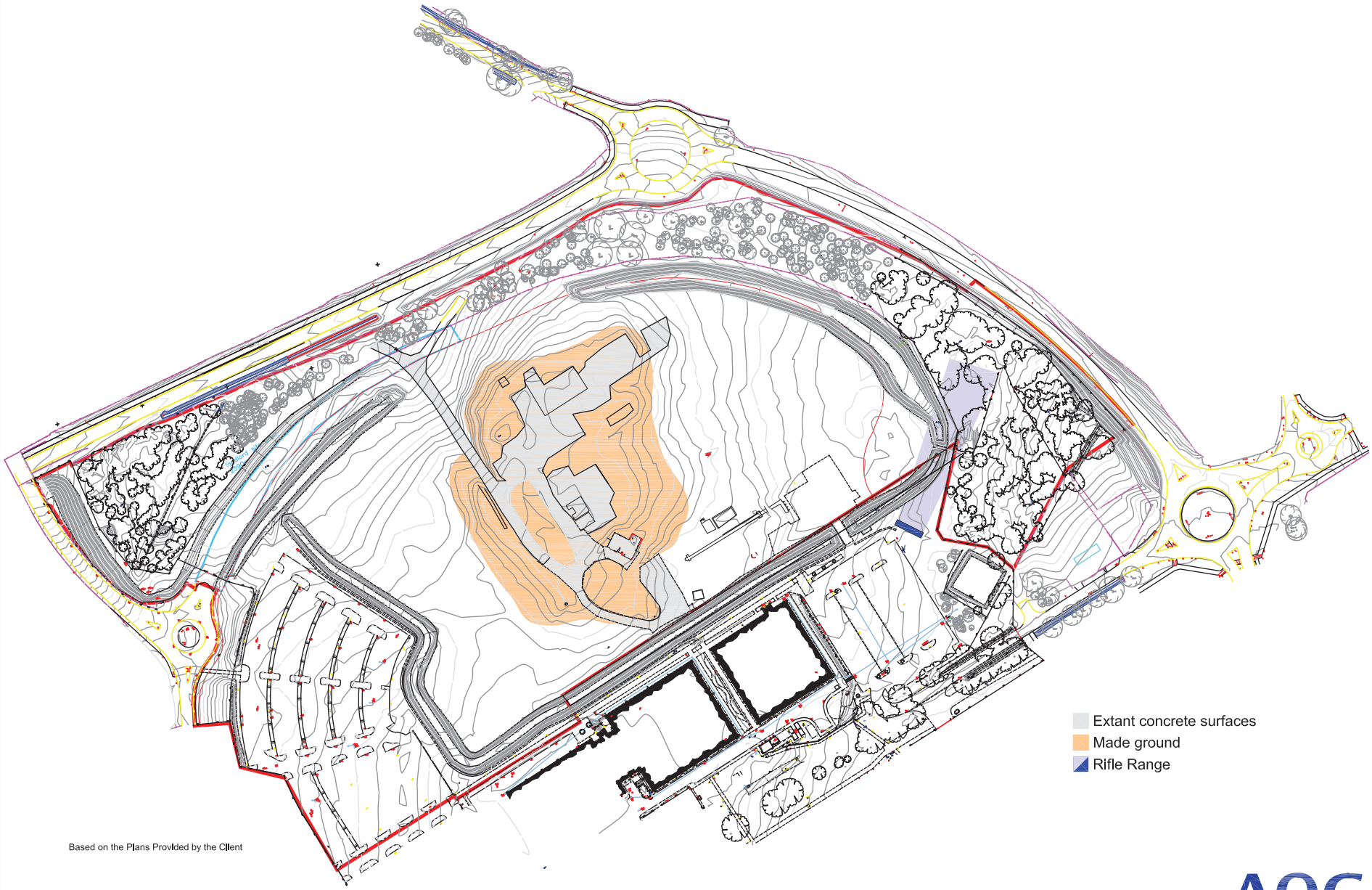
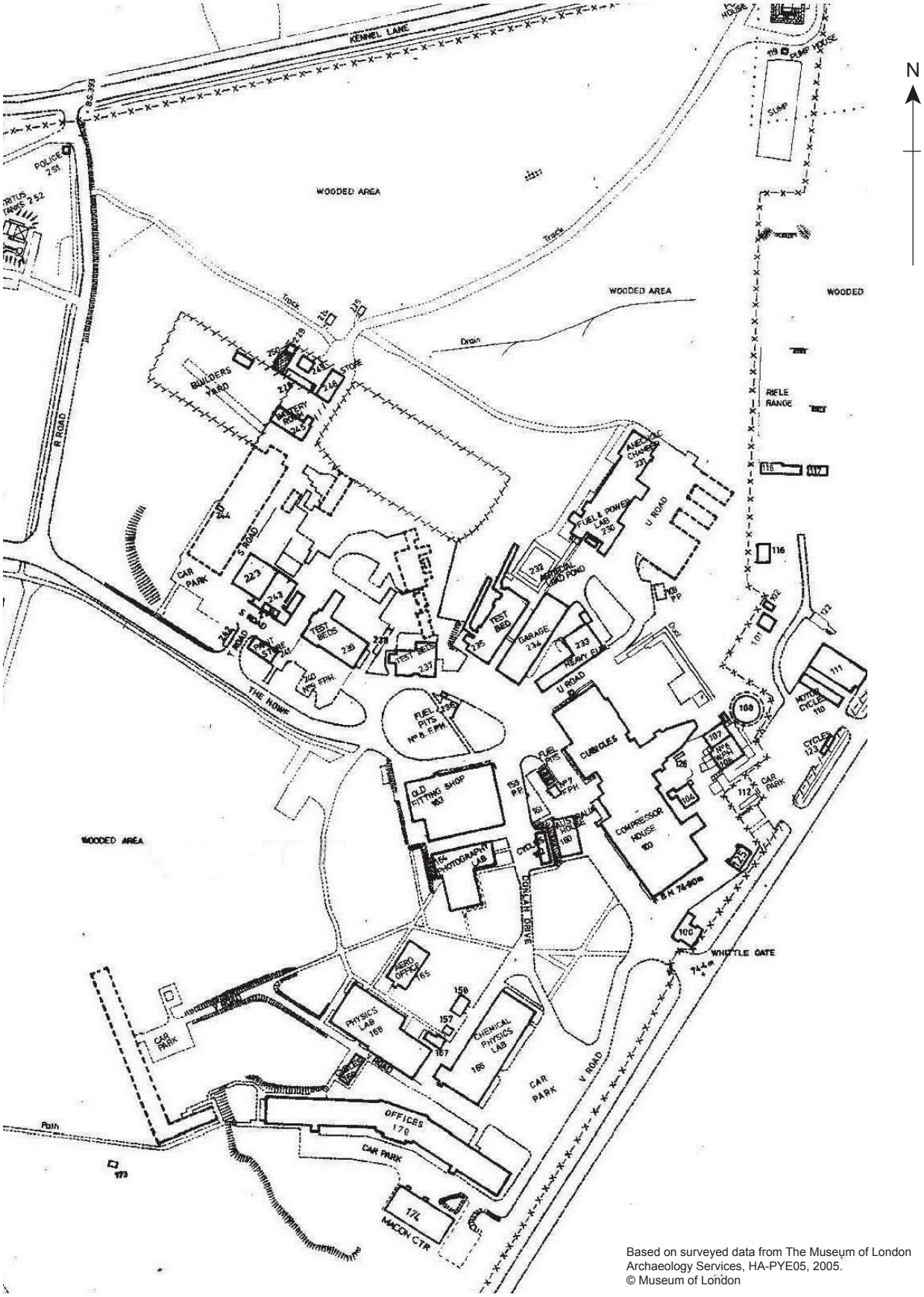


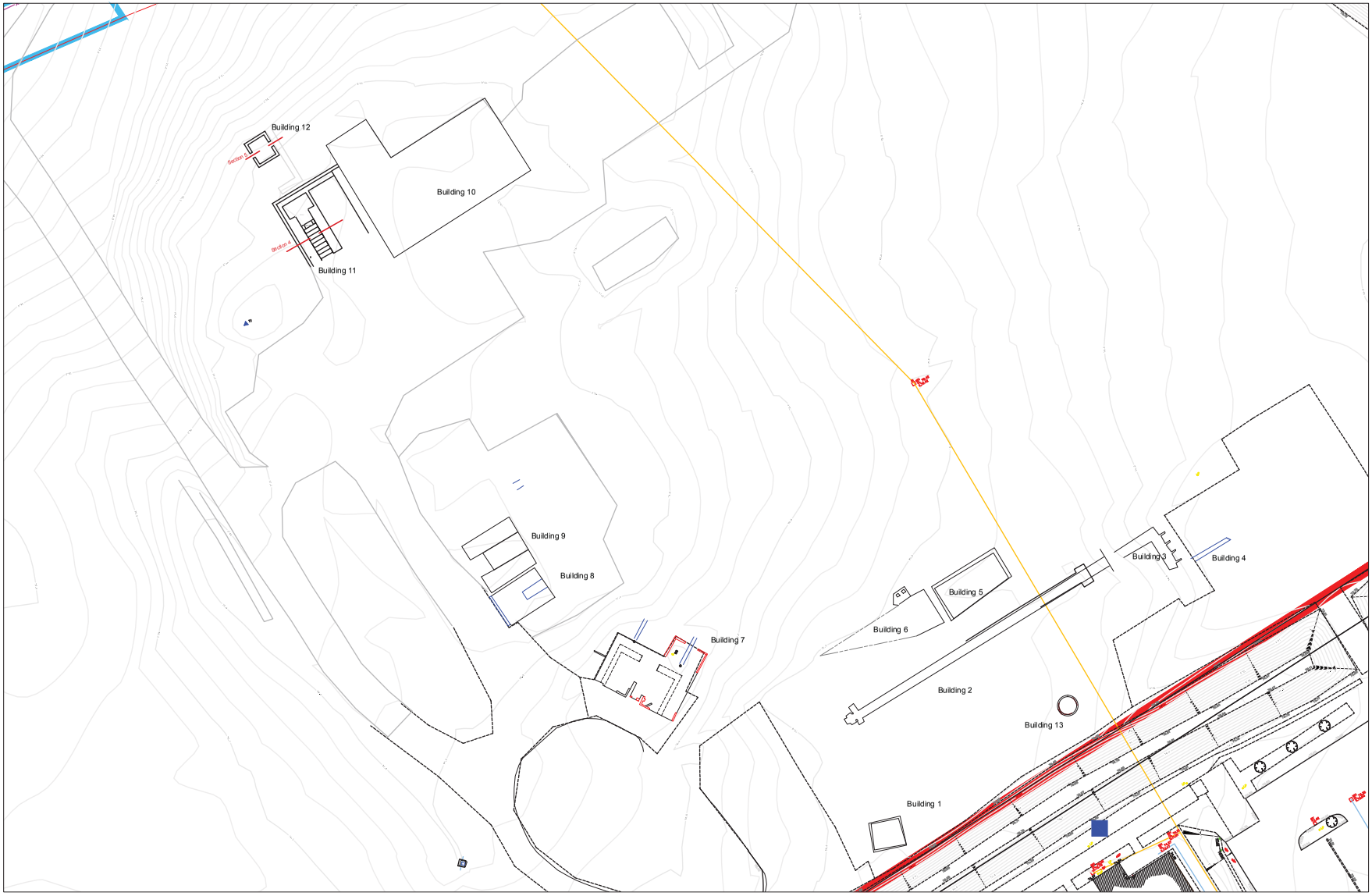
Figure 2: Detailed Site / Trench Location Plan



Based on surveyed data from The Museum of London Archaeology Services, HA-PYE05, 2005.
© Museum of London

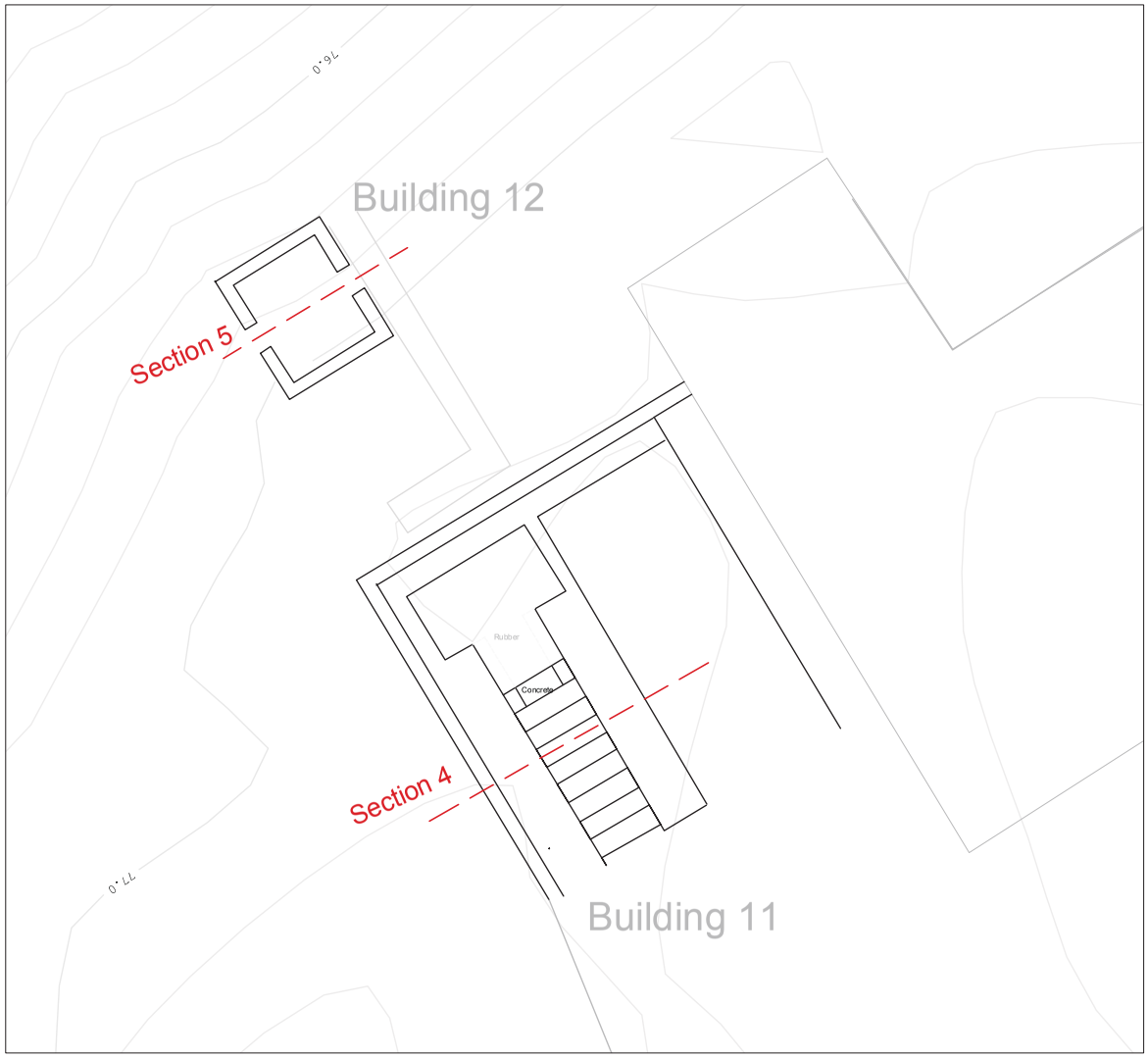
Figure 3: Historic Map of the Site in the 1970s

PYESTOCK TESTING FACILITY, CODY PARK, FARNBOROUGH, HAMPSHIRE:
HISTORIC BUILDING RECORD



Based on the Plans Provided by the Client

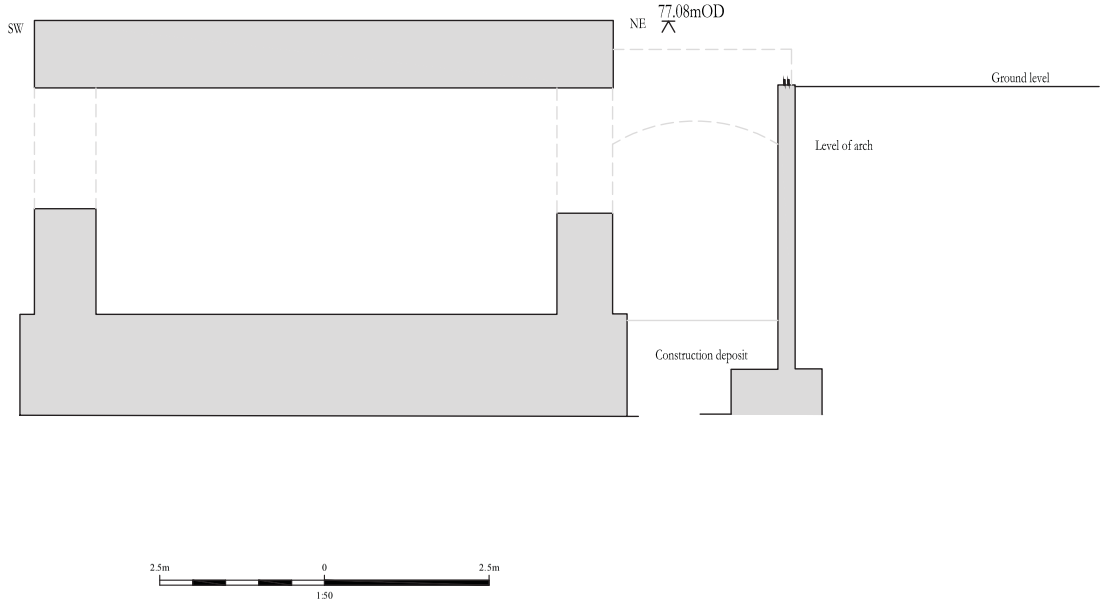
Figure 4: Recorded buildings



Based on the Plans Provided by the Client

Figure 5: Detailed Plans of Buildings 11 and 12

Section 4



Section 5

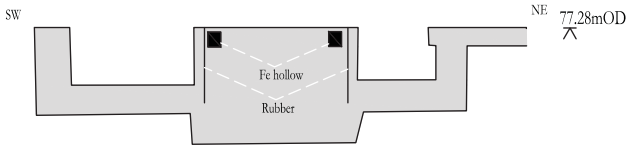


Figure 6: Profiles Through Buildings 11 and 12

Appendices

Appendix A – OASIS Form

OASIS ID: aocarcha1-87257

Project details

Project name	Cody Park, Ively Road, Farnborough
Short description of the project	12 buildings identified at former National Gas Turbine Establishment, but the site had generally been demolished with little evidence of building function
Project dates	Start: 07-08-2012 End: 14-09-2012
Previous/future work	Yes / No
Any associated project reference codes	30839 - Contracting Unit No.
Any associated project reference codes	A 2010.85 - Museum accession ID
Type of project	Recording project
Site status	None
Current Land use	Other 13 - Waste ground
Monument type	RESEARCH FACILITY Modern
Significant Finds	NONE None
Investigation type	"Field observation", "Watching Brief"
Prompt	Direction from Local Planning Authority - PPS

Project location

Country	England
Site location	HAMPSHIRE RUSHMOOR FARNBOROUGH Pyestock Testing Facility, Cody Park, Ively Road,
Postcode	GU14
Study area	9.00 Hectares
Site coordinates	SU 8400 5430 51 0 51 16 52 N 000 47 43 W Point
Height OD / Depth	Min: 72.00m Max: 77.00m

Project creators

Name of Organisation	AOC Archaeology
Project brief originator	Hannah Fluck, Hants CC
Project design originator	AOC Archaeology Group
Project director/manager	Alan Ford
Project supervisor	Les Capon
Type of sponsor/funding body	Architects

Project archives

Physical Archive Exists?	No
Digital Archive recipient	Hampshire County Museum
Digital Archive ID	A.2010.85

Digital Media available	"Images raster / digital photography", 'Images vector", "Survey"
Digital Archive notes	held at AOC until transfer
Paper Archive recipient	Hampshire County Museum
Paper Archive ID	A 2010.85
Paper Media available	"Drawing", "Notebook - Excavation',' Research',' General Notes" "Photograph", "Plan", "Report", "Section"
Paper Archive notes	held at AOC until transfer

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Pyestock Testing Facility, Cody Park, Farnborough Hampshire, Historic Building Record
Author(s)/Editor(s)	Capon, L.
Date	2012
Issuer or publisher	AOC
Place of issue or publication	London
Description	A4, 33 pages, 12 plates, 6 figures

Entered by	les capon (les.capon@aocarachaeology.com)
Entered on	26 September 2012

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