

RISO14-001



BORDON GARRISON, HAMPSHIRE

*Level 1-2 Building Recording of subterranean bunkers, SEME Sergeant's and
Warrant Officer's Mess and Sandhurst Block*

*for Amec Foster Wheeler on behalf of Whitehill and Bordon Regeneration
Company*

November 2016

BORDON GARRISON, HAMPSHIRE

*Level 1-2 Building Recording of sub-surface bunkers, SEME Sergeant's and
Warrant Officer's Mess and Sandhurst Block*

November 2016

HA Job no.: RISO-001
NGR: SU 790 352
Parish: Whitehill
Council: East Hampshire District
Council

Project Manager: Anthony Walsh
Author: Hayley Goacher
Fieldwork: Hayley Goacher
Graphics: Caroline Norrman
Rafael Maya-Torcelly
Approved by: Tim Holden
Michael Tierney

CONTENTS

1.....	INTRODUCTION.....	59
1.1	Planning Background	59
1.2	Site Description	59
2.....	AIMS AND OBJECTIVES.....	59
3.....	METHODOLOGY	60
4.....	LIMITATIONS.....	60
5.....	HISTORIC BACKGROUND	60
5.1	Previous Investigations	60
5.2	Military Activity at Bordon.....	60
6.....	RESULTS.....	61
6.1	Sandhurst Block	61
6.2	Warrant Officer's and Sergeant's Mess	63
6.3	Bunkers.....	64
7.....	INTERPRETATION.....	65
7.1	Sandhurst Block	65
7.2	Sergeant's Mess.....	65
7.3	Modern Extensions.....	66
7.4	Bunkers.....	66
8.....	CONCLUSION	66
9.....	REFERENCES.....	67

LIST OF ILLUSTRATIONS

Illus 1 Location Plan

- Illus 2 Location of the subterranean bunkers, Sergeant's and Warrant Officer's Mess and the Sandhurst Block
- Illus 3 Southeast elevation of the Sandhurst Block viewed from across the parade ground
- Illus 4 The main entrance and central block ground floor windows of the Sandhurst Block
- Illus 5 The southeast elevation of the northern U block illustrating the doors and windows
- Illus 6 The courtyard within the northern U block showing the rear door and ablution room bay with the modular extensions on the north side
- Illus 7 The former Sandhurst Block library as an example of the central block ground floor rooms
- Illus 8 An example of the modern arrangement of the dormitories in the Sandhurst Block
- Illus 9 An example of the red Modern style balustrades on the stairwells within the Sandhurst Block
- Illus 10 The south façade of the Sergeant's Mess
- Illus 11 The new main entrance, with SEME insignia, added to the west side of the original Sergeant's Mess building
- Illus 12 The interior of the extensions, showing the dining area on the east side
- Illus 13 The interior of the bar on the southeast corner of the original part of the Sergeant's Mess
- Illus 14 The dark wood interior of the former principle entrance of the Sergeant's Mess
- Illus 15 The stairway in the original Sergeant's Mess building in context with its half landing window, the modern décor of the first floor accommodation and the modular extensions seen through the window
- Illus 16 Bunker entrance 8 looking south towards entrance 6
- Illus 17 The interior of bunker 6-8 looking north
- Illus 18 Possible bunker entrance 7 looking southeast with entrance 6 in the top right corner
- Illus 19 The entrances of bunker 9-10 looking northeast
- Illus 20 The interior of bunker 9-10 looking east
- Illus 21 The short northern entrance 12 looking south
- Illus 22 The blocked entrance 11 and the area of collapse over bunker 11-12 looking northeast
- Illus 23 Bunker A-B was only partially subterranean with blocked west facing entrances
- Illus 24 The almost completely hidden entrance D looking southeast
- Illus 25 An example of the collapse and corrosion in the bunkers, in this case bunker C-D
- Illus 26 The infilled north entrance F of bunker E-F with a view east towards bunker A-B

BORDON GARRISON, HAMPSHIRE

LEVEL 1-2 BUILDING RECORDING OF SUB-SURFACE BUNKERS, SEME SERGEANT'S AND WARRANT OFFICER'S MESS AND SANDHURST BLOCK

Amec Foster Wheeler, on behalf of the Whitehill and Bordon Regeneration Company, commissioned Headland Archaeology to carry out a Historic Building Recording (HBR) survey of the subterranean bunkers, the School of Electrical and Mechanical Engineers Sergeant's and Warrant Officer's Mess and the Sandhurst Block; as part of a wider archaeological mitigation strategy for the proposed re-development of the former garrison.

The Historic Building Recording was carried out in accordance with Level 1-2 standards from the Historic England document entitled Understanding Historic Buildings (2006). This recording is the latest phase of archaeological work at Bordon Garrison, with previous fieldwork comprising geophysical surveys, fieldwalking and trial trenching between 2014 and 2016.

The fieldwork confirmed the layout and approximate location of a series of subterranean bunkers and recorded their construction. The layout, use, original features and modernisation of the Sergeant's and Warrant Officer's Mess and Sandhurst Block was recorded. This information has been supplemented by research into the original design and function of all these structures in the context of the 20th century development of the British Army.

1 INTRODUCTION

1.1 Planning Background

Outline planning permission has been granted for the demolition of some of the former MoD buildings and conversion of others as part of the wholesale redevelopment of the former Bordon Garrison (East Hampshire District Council Planning Ref: 55587/001). Due to the potential impact of the development on archaeological remains, conditions have been placed on this planning permission (12-15) which require archaeological work: evaluation, mitigation, recording, and post-excavation work and publication, if appropriate. The first phase of this archaeological work involved evaluation across the Development Area (DA), comprising field-walking in the Hogmoor Enclosure (Area 1); geophysical survey Areas 2, 3, and 4; intrusive trial trenching in grassed areas across parts of Areas 1 and 2; and historic building recording across some upstanding structures (Illus 1). This current phase involves the recording of six subterranean bunkers located in the former assault course area as well as the School of Electrical and Mechanical Engineers (SEME) Sergeant's and Warrant Officer's Mess (hereafter referred to as Sergeant's Mess for simplicity) and the Sandhurst Block (Illus 1).

Headland Archaeology was commissioned to carry out a further programme of archaeological mitigation including historic building recording, for the proposed re-development of Bordon Garrison. A Written Scheme of Investigation (WSI) for this historic building recording work (Headland Archaeology, 2016) was agreed with East Hampshire District Council.

1.2 Site Description

The DA comprises Ministry of Defence Land on the western side of the A325 between Bordon and Whitehill, Hampshire, centred on NGR SU 790 352 (Illus 1). The structures subject to historic building recording were all located within the former Prince Philip Barracks on the south side of Budds Lane. This part of the former garrison included barrack/accommodation blocks, amenity buildings (café/laundrette/sports facilities/workshops etc), a parade ground and an assault course. The wider DA comprises a number of different areas, with a mix of administrative buildings, warehouses, forested and open training areas, playing fields, and residential areas.

The underlying geology of the DA is sandstone of the Folkestone Formation, a sedimentary bedrock formed approximately 100-125million years ago in the Cretaceous Period. No superficial deposits are recorded (www.bgs.ac.uk).

2 AIMS AND OBJECTIVES

The objective of the building recording is to enable the development by fulfilling the archaeological planning conditions imposed by the local planning authority. Specifically, Historic England (HE) Level 1-2 recording aims to provide a basic descriptive and visual record supplemented by any information needed to identify the building's

location, age and type and to draw brief conclusions regarding the building's development and use (Historic England, 2006, 14).

3 METHODOLOGY

The recording was undertaken in line with ClfA Standards and Guidance (ClfA, 2014) for conducting Historic Building Recording and *Understanding Historic Buildings* (Historic England, 2006, 8 and 14) that includes the following items from the recording specification:

- Drawings: 1 and sometimes one or more of 2-7
- Photography: 1, 2 and 4
- Written Account: 1-4 and 6

Notes were made of the internal and external form, layout, construction, materials, fixtures and fittings for each of the structures. These were accompanied by sketch plans and cross-sections where required. Where a feature was repeated throughout the structure/s this was noted, along with any variations relating to its location or use. Digital photography was used to record all the elevations, spaces and details of fixtures where appropriate. A 1m graduated scale was used in all photographs where appropriate.

4 LIMITATIONS

No accurate plans were available for the locations of the bunkers, primarily because they were not known about at the time of the developer's surveys. Floor plans for the Sandhurst Block and Sergeant's Mess may exist at the Royal Electrical and Mechanical Engineers (REME) archive but this is closed for a prolonged period for relocation so were unavailable for annotation.

5 HISTORIC BACKGROUND

5.1 Previous Investigations

Field-walking was undertaken across the Hogmoor Inclosure in the southern part of the DA (Headland Archaeology, 2016b). Most of the artefacts discovered were modern, mostly relating to military activity, but 22 prehistoric flints were also recovered. The area was also noted to be highly disturbed, probably from military training activity.

Geophysical survey has also been undertaken (Headland Archaeology, forthcoming). This took place in the north-western part of the DA, adjacent to the current cricket pitch. No features of potential archaeological significance were identified.

A Heritage Statement has been produced (AMEC, 2014) which outlines the historic and archaeological potential of the DA. A summary of this is produced here with additional detail on the history of the buildings and structures within the DA.

5.2 Military Activity at Bordon

Eighteenth or early 19th century structures relating to the early activities of the British Army are exceptionally rare. Reforms in the 1870s included a move to permanent regimental and training depots and construction of teaching institutions and barracks that continued until the First World War. Some of these permanent bases were designed for architectural effect, such as the Peninsula Barracks at Winchester (Historic England, 2011, 9), though the majority of new buildings were built to type designs produced by the War Office. It is in this context that Bordon was founded as a military camp in 1901.

The early 20th century was a period of experimentation as the British Army reacted to the demands of Empire and the impacts of wars fought far away as well as rapidly developing technologies both in the context of domestic appliances and with regard to ordnance (Historic England, 2011, 5). Bordon reflected this experimentation. For example, in 1901 it was one of the first camps to be entirely accommodated in new semi-permanent huts. First used at Leipsic Barracks in 1900, and the preferred method for the Army's expansion across the Aldershot area, the SA huts as they became known, used galvanised iron cladding and roofing applied to a deal framework. They were cheap to construct and maintain and incredibly durable with some still in use at Bordon during the Second World War (Evans, 2006, 2-3). domestic

From 1908 the Royal Engineers at Bordon introduced a different hut design consisting of 5in thick brick walls between supporting steel stanchions, plaster and rough cast render and asbestos tiled roof. These were not widely copied but fed into a bigger picture of garrison building renewal after the First World War that persisted into the 1920s (Evans, 2006, 3). There was a realisation that war-related technologies were progressing so fast that new structures could quickly become obsolete. In response, only temporary structures were built so they could be more easily adapted or wouldn't last long enough to become obsolete. This apparent solution was a

'declaration of obsolescence' (c1926) wherein the latest tradition of Army design was abandoned and economical construction and cheaper substitute materials were favoured; hutted camps like Bordon were seen as 'enforced expedients rather than the desired norm' (Evans, 2006, 9). There was still a desire to make the barracks comfortable however and the Light Construction Barrack, as they became known, were almost as cheap to build as the 1908 huts already at Bordon but warmer and cheaper to maintain. In addition to the broadly similar construction these new barracks had fireplaces, sanitary annexes and could be single or double storey. They also made extensive use of artificial stone and concrete 'breeze' blocks (Evans, 2006, 10).

The economic crisis of 1929 brought a collapse in the price of materials and an end to the short-lived obsolescence policy. Stone dressings, handmade tiles and brick facings were reintroduced and military architecture gained its now well-known monumental character (Evans, 2006, 10; Historic England, 2011, 6). Generally, the more formal accommodation, such as the officer's messes, houses and barrack buildings were in neo-Georgian style whilst technical buildings were in the new Modern style (Historic England, 2011, 6). This fits with the context of the 1930s Army where the worsening international and political situation and the difficulty in attracting new recruits created a problem that the War Office were determined to solve by producing attractive barrack blocks as an incentive. The original design of the Sandhurst Block was submitted to the Royal Fine Arts Commission (RFAC) in early 1936. The RFAC had already suggested modified Georgian designs to the RAF, the Forces' leader in building permanent bases. The RFAC was appointed by Royal warrant in 1924 to consider the architectural quality and merits of buildings referred to it by government or other public bodies and had a particular role in helping to alleviate public fears of massive and unsympathetic military expansion into rural settings in this period (Historic England 2003, 5; Evans, 2006, 11; National Archives website). The new Sandhurst Blocks were not completely new in that they referenced several centuries of military discipline and design elements. Ablutions annexes, proportions of fixtures such as staircases and the ratio of beds to windows are all described in the Handbook of Design and Construction of Military Buildings 1905 and 1933 and more than likely in earlier examples. New elements included the provision of rooms that held a maximum of only 12 men each, central heating by hot water radiators and sitting rooms at a ratio of one to every 25 men. These were to include such luxuries as brick fireplaces in addition to the central heating, polished wood floors, comfortable chairs and a plug for a wireless (Evans, 2006, 11). The standard plan for these blocks was a complex butterfly shape of two opposed U shape blocks joined by a central block that housed the dining hall on the ground floor. The first Sandhurst Blocks were incorporated in the rebuilding at Catterick c1937. At Bordon, replacement of buildings started in 1935 at the St Lucia and Quebec Barracks (AMEC, 2014, 43). The Sandhurst Block, initially part of Havanna Barracks, was built in 1939, along with the Sergeant's Mess (AMEC, 2014, 43), and both represent this monumental phase of permanent construction in the replacement of the hutted camp to create one of the Army's largest garrisons.

A significant building programme was undertaken across Bordon Garrison during the Second World War, particularly to accommodate the Royal Canadian Engineers who were garrisoned there for the majority of the conflict (AMEC, 2014, 43). These works had no substantial impact on the Sandhurst Block or Sergeant's Mess. It is likely that the subterranean bunkers were built around this time, given their construction and materials, however no note of this activity or their purpose appears to have been made in the records available for use in this assessment and report.

In the 1970s a major expansion programme was undertaken within the Havanna Barracks, now Prince Phillip Barracks, at Bordon. This included stand-alone buildings and extensions by architects Westwood, Piet Poole and Smart on a modular square plan with a pyramidal roofed design. The wings of the Sandhurst Block were enclosed and a significant extension was added to the rear of the Sergeant's Mess (Heritage Statement, 43-44).

6 RESULTS

6.1 Sandhurst Block

The Sandhurst Block is located in the approximate centre of the living accommodation at Prince Phillip Barracks, to the west of the main entrance on Budds Lane (Illus 1).

In plan the Sandhurst Block is described as a complex butterfly (Illus 2). It is formed of two opposing U shaped blocks with southeast and northwest projecting bays on the corners, joined by a recessed central rectangular block. The building at Bordon is orientated northeast-southwest such that the main entrance is on the southeast façade in the central block, facing the parade ground. More recent extensions to the building have enclosed the courtyards of the U shaped blocks at the northeast and southwest ends of the building, added a new block extending northwest from the northwest corner and a small block to the northwest of the main entrance in the central block.

The modern extensions are constructed of smooth faced orange-red brick in stretcher bond with angled brick window sills and jambs and vertical stretcher brick lintels. The windows are metal framed sash type. Each of these additional blocks has a pyramidal ceramic tiled roof, with the exception of that on the central block which has a flat roof.

The exterior of the original Sandhurst Block is faced in brown-red textured brick in stretcher bond (Illus 3). On the ground floor, up to the height of the top of the windows, there are seven recessed string courses. On the projecting corners of the U blocks there are short sections of recessed string courses in place of quoins. A Portland stone band had been used decoratively along the top of the ground floor string course and as a foundation course around the entire block.

On the east façade there are three entrances, located centrally to each of the blocks. The main entrance in the central block is within a single storey projecting porch (Illus 4). The wooden six panel blue double doors are mounted on white painted wood frames with a fanlight window above. The door is surrounded by Portland stone Tuscan style pilasters and arch over the fanlight (Anon, 2010, 60, 97, 130).

The remaining two doors on the east façade are the same as the four found in line to the west opening onto the courtyards of the U blocks (Illus 5). These are eight panel wooden double doors, painted black, in white wooden frames with a rectangular fanlight above. This window had a white diamond pattern across it. The door surround is Portland stone with a projecting keystone echoing the arched main entrance. The surround of the northern door on the east façade had been painted white.

Across the U blocks and upper floors of the central block the windows are white painted, wood framed horned sashes. Of six over six pane arrangement, the panes are of unequal size with the central panes being twice as wide as those down the sides. These windows are recessed into brick jambs with brick sills and, on the upper floors, decorative brick lintels. The ground floor lintel is formed by the Portland stone band. On the east and west facing projecting corners of the U blocks the windows have a different layout on each floor. On the ground floor the standard sash is flanked by two half-width sashes separated by the length of a brick. On the first floor the central sash is replaced by a half-glazed double door leading onto a small concrete balcony with black iron railings. The second floor has the central sash with two half-width sashes separated only by wooden mullions, not brick (Illus 5).

On the ground floor of the central block the windows are large arched casements, four on either side of the main entrance (Illus 4). The panes follow the same proportion as the sashes and arch echoes the fanlight over the main entrance. They are wooden framed with brick jambs and arch, Portland stone sill and keystone.

Over the original Sandhurst Block is a steeply pitched hipped roof with ceramic tiles (Illus 3). The apex of the roofs on the northeast and southwest projecting corners of the U blocks are at right angles to the main roof. Two brick chimneys are positioned at either end of the roof of each north-south block. A central clock tower with weathervane is mounted on the apex of the central block and is visible over much of the garrison.

The courtyards of the U blocks are paved, with occasional trees (Illus 6). The southeastern side is at a higher level and a raised terrace, also paved with sloping sides of orange-red brick has been added to access the door, presumably replacing an earlier terrace or steps.

The northwestern façades of the original building have a projecting central bay housing the ablution rooms (Illus 6). These are identical in form to the rest of the building except that they are flat roofed and have bricked up windows on their north and south elevations.

The ground floor of the central bay is accessed only through the main entrance via a rectangular porch and then much larger reception hall. Two sash windows are located on the internal wall of the porch either side of the inner door. The reception hall consisted of modern plaster painted cream, quarry style brown tiled floor and a brick and wood finished desk. This room gave access to a corridor with five classrooms leading off it to the south, a corridor with a dual aspect former library, a classroom and three offices to the north and a stairwell to the west. These exceptionally large rectangular rooms were lit by the large arched windows but all had modern utilitarian décor (Illus 7). The doors were all of cream colour with black frames, stainless steel handles and signage.

The west stairwell was also covered in brown tiles with bright red cast iron railings of a distinctive horizontal bar design and wooden handrails (Illus 9). Corresponding red metal handrails had been affixed to the walls. This stairwell gave access to the small modern extension of offices added to the west of the central block. It differed in level by half a storey and the stairs appeared to extend upwards despite there being no access to them and no current provision of access to the upper floors of the central block from the main entrance.

The entirety of the U blocks and upper floors of the central block were all used for soldier's accommodation. All the dormitories are located on the east side of the blocks with corridors and ablutions rooms to the west. Rooms were rectangular, two windows wide and were painted cream with black skirting boards, blue carpets and blue doors in black frames (Illus 8). The corridors were similarly decorated. Where furniture remained it was modular fitted MDF units that indicated four beds were usually allocated to each room. A dado rail could be seen in some rooms and along the corridors. Modern radiators were fitted under the windows connected by older pipework, as evidenced by the size of the pipes and the fittings. The ablutions rooms were fitted with modern cubicles, sanitary ware and linoleum flooring.

The stairwells for each of the accommodation blocks were broadly similar to that described for the central block (Illus 9). Those that connected to the modern extensions were dog leg form with tiled flooring and were wider with larger landings. Those within the original building were quite narrow and of square well form with bare concrete floors. All had the red iron railings.

6.2 Warrant Officer's and Sergeant's Mess

The Warrant Officer's and Sergeant's Mess (Sergeant's Mess) is located at the eastern end of the Prince Phillip Barracks, southeast of the main entrance and adjacent to the northern edge of the assault course area (Illus 1).

The Sergeant's Mess was originally of C shape plan and has a modern H shaped extension added on to the north side with a kitchen extending to the east and an accommodation block attached to the west. The original building is two storeys with the principle entrance on the south façade (Illus 10). The majority of the extension is single storey however the accommodation blocks are three storeys. The extension had also relocated the main entrance to the west elevation (Illus 11).

The exterior of the extension is of orange-red smooth faced brick in stretcher bond. It is formed of square modular blocks with pyramidal roofs capped with roof lights over communal areas and linked with short sections of glass sided corridors. In communal areas the windows are almost full height and rectangular with small opening fanlights above. In accommodation blocks the windows are metal-framed sash type recessed in brick jambs. The main entrance has a canopy of three shallow arches, brick steps and terrace leading to glazed double doors and a central window engraved with the SEME insignia (Illus 11).

The original block is constructed of brown-red textured brick in stretcher bond. The windows are white timber framed small horned sashes of 12 over 12 pane arrangement. They have wooden sills with decorative Portland stone sills beneath and vertical stretcher brick lintels. On the ground floor of the south façade the windows are taller arched sashes of 16 over 16 pane design. The former principal entrance has a Portland stone portico of classical proportions flanked by Tuscan columns and pilasters and arched niche style openings (Illus 10). The wooden double doors are each glazed with 12 rectangular panes and have brass door handles. There is a fanlight with a diamond pattern above and two sash windows in complementary style to either side of the door. This door opens out on to a paved terrace and shallow steps leading down to a garden with a pond.

The interior of the extension has bare brick walls, red carpets or linoleum with pale yellow wood finishes for the majority of the communal areas that formed a theme over this part of the building. The dining room in the east side of the H plan has a section of wooden floor in the southern third of the room, presumably a dance floor (Illus 12). The kitchen, to the east of the dining room, is a utilitarian space of industrial scale stainless steel cooking equipment and hygienic stainless steel or tiled surfaces. In the accommodation blocks the individual rooms have plastered and cream painted wall, synthetic carpets and modular, fitted, MDF furniture.

The interior of the original building varied according to use. The corridors have cream painted or woodchip papered walls and red carpets, as did the offices on the northern side of the ground floor. All bathrooms have modern fixtures and fittings. On the south side of the ground floor are two large rectangular rooms either side of the former principal entrance lobby. The eastern room contains a bar with a dark wood finish and complementary doors and panelling (Illus 13). Brass coloured wall mounted light fittings and red velvet curtains adorn the room along with three electric chandeliers. Decorative plaster moulding of overlapping leaves forms a rectangular border around the ceiling. A fireplace is located in the west wall and similar chimney breasts, one in the centre of the eastern half of this room and two in each end of the west room suggest further fireplaces had been present. Both rooms have radiators boxed in with decorative dark wood. The room to the west is similarly decorated although there is no panelling and the plaster moulding has been painted red. There were two wooden platforms along the north wall and holes in the carpet indicated this room had once housed snooker/pool/billiards tables. A second bar, in similar style, is located in the east arm of the C plan with a store room beyond.

Within the former principal entrance lobby is a second set of double doors, half glazed with square panes and with brass handles (Illus 14). The doors are of a lighter colour than the surrounding woodwork and repaired patches next to the handles suggest neither are original to the decorative scheme. The geometric pattern in the rectangular fanlights above these doors and the elongated handles with horizontal banding are in a simplified Art Deco style. The lobby has dark wood panelling and parquet floor leading to a well stair with Art Deco stylised newel posts. The white plaster ceiling has a central circular rose repeating the overlapping leaf motif with a plain centre from which hangs an electric chandelier. On the half landing of the stair was an arched sash window of the same style as those on the south façade with six rectangular panes on each side of the sash separated by wooden mullions (Illus 15).

The first floor of the original building is entirely accommodation consisting of individual bedrooms, connecting study rooms, kit storage areas and ablutions rooms in the east and west arms of the C plan. The décor was entirely modern with synthetic carpets, green-grey standardised doors, cream painted walls, modular fitted MDF furniture and modern sanitary ware (Illus 15).

6.3 Bunkers

All six bunkers were located in the assault course area in the southeast corner of the Prince Phillip Barracks (Illus 1). They were arranged in two groups of three either side of a north-south orientated pathway through the approximate centre of the assault course and slightly west of the area entrance. Bunkers 6-8, 9-10 and 11-12 were to the east of the path and bunkers A-B, C-D and E-F were to the west.

Bunker 6-8 was located slightly north of the centre of the assault course in the approximate centre of the group of bunkers with A-F to the northwest and 9-11 to the southeast. Apart from the concrete collars around the two stepped entrances and a slight rise in the ground level over it, bunker 6-8 was entirely subterranean. Pine trees were located above and around it.

This bunker had stepped entrances at the southern and northeastern corner and a possible third manhole type entrance at the northwestern corner. The stepped entrances were formed of a concrete collar 0.6m high above ground level sitting on concrete walls around the steps, which were 0.85m wide (Illus 16). Four concrete steps were visible at the southern end before a deep layer of vegetation debris formed a slope down into the bunker. The steps and slope entered a short 1.5m long vestibule at right angles between the steps and bunker itself. This vestibule was 1.4m high above the debris that had spread on to the floor with concrete walls and a reinforced concrete ceiling. Horizontal lines on the concrete suggest it may have been cast *in situ* using timber shuttering. The northeastern entrance appeared to be identical to the southern one but had been sealed with concrete blocks at the base of the steps. As a result, the steps had been filled with vegetation and other debris.

The main space of the bunker resembled a tunnel, 9.2m long, 2m wide and 2m high, and orientated north to south. It was formed of an arch of single spans, set into coarse yellow sand, of square profile corrugated metal sheeting, probably wrought iron or steel that may have had zinc galvanising though the complete corrosion suggests this was absent or had failed (Illus 17). At each end of the tunnel the ceiling had severely corroded and begun to collapse. The floor was of concrete with a covering of sand spilling out from the sides and ceiling. The interior had been most recently used to store ropes and cardboard boxes amongst other modern debris.

The third manhole style entrance was 1.45m² formed of a red brick edge and a central concrete cap, now sealed and barely visible in the low vegetation (Illus 18). There was no indication from the interior of the bunker that it connected to any entrance to the northwest and this manhole may be unrelated to the bunker.

Bunker 9-10 was the most southerly of the bunkers, approximately 20m southeast of bunker 6-8. Except for the entrances this bunker was subterranean with only a very slight rise in the ground level over it (Illus 19). In plan bunker 9-10 was C shaped with the long axis orientated east to west and the entrances at each end orientated to the south.

The bunker was accessed down ten concrete steps at each entrance. These were 0.96m wide and flanked by red brick walls in stretcher bond with cement mortar (Illus 19). The bricks were 0.25m long and 0.1m high and were very weathered in places. Collars 0.45m high on top of the brick walls protected the entrances and were constructed of concrete. Horizontal shuttering marks suggested they had been constructed *in situ*. The base of the steps and floor of the bunker was covered in vegetation and other debris obscuring any original flooring.

Between the two entrances bunker 9-10 was a tunnel 8.05m long, 1.4m wide and 1.90m high. Corrugated and galvanised iron or steel sheeting, with a round profile, was used to form the single span arch of the tunnel that was oval in section (Illus 20). The eight panels of sheeting had been overlapped slightly and set into a coarse yellow sand. At each end between the last panel and the base of the steps were steel lintels 0.1m wide and brick jambs 0.25m wide and 0.12m deep though there was no evidence remaining for a door. There was graffiti in red paint on the north side of the tunnel, dated 1996.

To the south, exterior to the bunker, there was a slight oval mound between the entrances with a shallow ditch curving around its southern edge. As the ground was generally undulating and covered in leaf litter, these may have been natural features or even unrelated to the bunker.

Bunker 11-12 was the most easterly of the group, located approximately 35m south of the entrance to the assault course area. It was orientated north to south with two entrances, one on the northeast corner facing north and one on the southwest corner facing south. This bunker was discernible above ground as a mound between the entrances (Illus 21).

The concrete stepped entrances were similar though shorter in length than those observed on other bunkers and the northern entrance had been sealed by concrete blocks at the base of the steps, allowing it to fill up with debris. At the southern end, significant collapse and the growth of substantial tree roots had occurred such that safe access into the bunker was not possible and this entrance had also filled up with debris (Illus 22). Where the collapse allowed a view internally, it appeared to be comparable with bunker 6-8 with arched panels of square profile corrugated iron sheets. From surface measurements this bunker was approximately 12m long, including the entrances, which is consistent with the other bunkers.

Bunker A-B was located in the westerly group of bunkers and orientated approximately north-northwest to south-southeast. It was only semi-subterranean and a large linear flat-topped mound 2-3m high could clearly be seen. The entrances were at either end of the bunker on the west facing side so that the bunker had a C shaped plan (Illus 23).

The entrances were formed of a light grey concrete with only a few small gravel inclusions and steel reinforcement. They were over 3m long and only 0.6m wide and both had been partially blocked by a wall of concrete blocks. This was probably at the base of some steps but a dense build-up of debris had completely covered any trace. This wall did not extend up to the ceiling at the southern end and so part of the internal space could be observed. Internally this bunker had a concrete floor, walls and ceiling and was rectangular in section. No debris or evidence of use was observed. External measurements indicate that bunker A-B was a maximum of 9m long.

Bunker C-D was the most northerly of the bunkers and was orientated northeast to southwest. It was similar to bunkers 6-8 and 11-12 in having entrances north and south facing on the northeast and southwest corners and a linear tunnel between them. It was entirely subterranean and set into ground that sloped down to the west.

The southern entrance had been sealed with concrete blocks at the base of the steps and had completely filled up with debris, largely as a result of recent tree clearance. The northern entrance was also significantly infilled with vegetation such that access was difficult but possible (Illus 24). They both had concrete collars, walls and steps and even the collars were barely above ground level for this bunker, partly because of the debris left behind from the tree clearance.

Internally bunker C-D was formed of single span arches of square profile corrugated wrought iron sheeting where the galvanising had either been absent or had failed. This was very heavily corroded with large areas of collapse and the sheets peeling inwards along the walls such that it was not safe to proceed very far into the space (Illus 25). The floor was concrete with a covering of gravel and debris.

Bunker E-F was located on the western edge of the group and orientated approximately north-south. It was entirely subterranean with the concrete collars around the stepped entrances on the north and south ends only just visible in the tree clearance debris (Illus 26). The northern entrance had been blocked by a wall and a build-up of debris whilst the southern end was filled by vegetation and large fragments of corrugated metal sheeting such that there was no safe access to the interior. It is presumed from the surface layout, size and construction that this bunker is similar to 6-8, 11-12 and C-D.

7 INTERPRETATION

7.1 Sandhurst Block

The brick and stone exterior of the Sandhurst Block represents the return to permanent barracks for the British Army that occurred in the late 1930s. It is comparable to the first Sandhurst Block at Catterick, now Listed, and typical of the Neo-Georgian style endorsed by the RFAC. The classical proportions and finishes, particularly evident on doors, windows and fanlights, lend the building a sense of scale and importance consistent with trends in civic amenity buildings, such as Fire Stations and Local Authority offices, being built in British towns at the same time.

The interior of the Sandhurst Block is now entirely modern with the ground floor of the central block being converted for use as a learning centre and offices. The rest of the building has continued in use as dormitories in much the same way as the original plan. However the dormitories most recently only slept four, probably as a result of a change to military accommodation policy, and there were no sitting rooms. Recreational areas had been removed to purpose-built facilities elsewhere, probably in the 1970s when significant extensions to the site were built. Each floor of accommodation was uniform in layout however the presence and absence of dado rails on the walls and blocked windows in the ablutions rooms indicate changes of layout to suit modern requirements. The rooms on the corners of the block are the most likely candidates for the sitting rooms as their dual aspect and larger windows or doors are unlikely to have conformed to the 1930s ratio of beds to windows. They are also positioned close to the chimneys and contemporary documents indicate only the sitting rooms had fireplaces (Evans, 2006, 11).

Also of note on the interior of the Sandhurst Block are the stairs and balustrades for their clean lines and simplicity. Despite the exterior being Neo-Georgian in influence these owe more to the Modern style, usually reserved for the Army's technical buildings at this time. Modernism was partially based on a concept of utilitarianism and these stairways therefore represent a practical and appealing solution given that these barrack buildings were in part designed to encourage men to join the Army.

7.2 Sergeant's Mess

As with the Sandhurst Block the external use of brick and stone marks the return to permanent structures throughout the Army's facilities. The Sergeant's Mess building shows more extensive use of classical finishes,

including the windows and decorative Tuscan style porch, indicative of its higher status within the barracks but still in keeping with the favoured Neo-Georgian design of the late 1930s. The grandeur of this principal entrance is somewhat diminished externally by the change to the entrance to the west façade and inhibited access resulting from the accommodation block.

The interior of the Sergeant's Mess was clearly subdivided into formal reception areas, indicated by red carpet and cream or brick walls; living accommodation utilising synthetic carpets, grey-green doors and stainless steel signage; and service areas consisting of kitchens and store rooms. The layout of the formal reception areas explains the change of entrance as the new extension provided more space and more direct access to the dining room. In the original part of the Mess building the retention of period features, such as the entrance vestibule, plaster ceiling decoration and stairs, display a pared-down Art Deco style with the use of dark wood finishes and geometric shapes. This is in keeping with the use of Art Deco motifs in otherwise Neo-Georgian or classical architecture in other civic amenity buildings, particularly in formal spaces, at this time. The remaining décor in this part of the building was modern, including the bar, carpets and lighting but reflected the more formal use, past and present, of these rooms.

7.3 Modern Extensions

The modern extensions to the Sandhurst Block and Sergeant's Mess reference the original Neo-Classical style through the use of rectangular sash type windows at regular intervals and the use of brick. The flexible modular design echoes the principles of the hutted camps and temporary structures that Bordon Garrison started with. They can easily be added on in any number of combinations of blocks and storeys, with the square shape being suitable for a wide range of uses. They stand out as clearly very modern buildings compared to the more elegant 1930s structures but they represent a continuation of a practical response to the changing requirements of a modern Army.

7.4 Bunkers

The presence of the six bunkers in the assault course area was not previously known and there are no references to them in the formal or colloquial literature on Bordon Garrison. They have recently been noted as Stanton air raid shelters however a number of factors suggest this may not be a true reflection of their form or function.

Stanton shelters were named after the company that devised them and most usually consisted of interlocking panels, usually concrete, bolted at the top and down the sides into a pointed arched tunnel. They could be made to almost any length and usually had one or two entrances at right angles to each end, although variations including an escape hatch in the roof, entrances in line with the tunnel, or construction using a corrugated iron or a concrete shell also occurred. They could be surface, semi-sunken or completely subterranean and were used in both civilian and military contexts. None of the bunkers at Bordon have bolted panels, entrances in line or escape hatches. Two have entrances at right angles, A-B and 9-10, the remaining bunkers have them offset from the corners and there is a mix between semi-sunken, A-B and 11-12, and completely subterranean. However there are enough similarities in the construction and layout to suggest they may have been a local version, inspired by the Stanton shelters. The engineers at Bordon had already set a precedent for this when they modified the design of the hutted accommodation in the early 20th century to make a cheaper, more sustainable alternative.

Their function as air raid shelters can also be called into question as their location far from the garrison's buildings, random arrangement with entrances facing in all directions and the narrow entrances with no evidence for doors, along with their small scale, makes them seemingly unsuitable for quickly accessible protection. They are currently located in a mature pine plantation used as an assault course with minimal evidence for past buildings but with infilled evidence for earthworks, possibly former trenches. It is reasonable that this area has been consistently used for training exercises and these bunkers may have formed part of that activity, at least recently.

The use of different types of corrugated metal sheeting and the colour and aggregation in the concrete suggests that not all the bunkers were built at the same time. However these materials in a military context are most frequently used in the first half of the 20th century and it is likely that these bunkers, whatever their intended use, were built around the time of the Second World War when the camp became a permanent garrison. The relatively good condition of the majority of the bunkers suggests frequent use since then though no major periods of repair were observed.

8 CONCLUSION

This phase of historic building recording on the Sandhurst Block, Sergeant's Mess and subterranean bunkers at Bordon has identified structures dating from the late 1930s and 1970s that are important in the development of the garrison in a wider military context. A major theme of the 1930s was the making of all Army bases permanent with an emphasis on good design in terms of practicality, comfort and aesthetics, encouraged by the RFAC. The resultant monumentality is encapsulated in the huge scale of the rebuilding and, at Bordon, the scale of the Sandhurst Block. The inclusion of sitting rooms in the Sandhurst Block refer to the comfort element whilst the

design element can be seen in the use of Neo-Georgian facades and classical, Art Deco and Modern motifs, particularly in the interior of the Sergeant's Mess.

Although the apparent lack of documentary and artefactual evidence makes the bunkers somewhat unquantifiable their use of cheap, practical materials has ensured considerable durability; fulfilling or even exceeding the aims of Army facilities built in the first half of the 20th century. Their differing construction and layout makes it unlikely that they are true Stanton air raid shelters and more probable that they are a local variation built for a different purpose associated with the SEME training exercises.

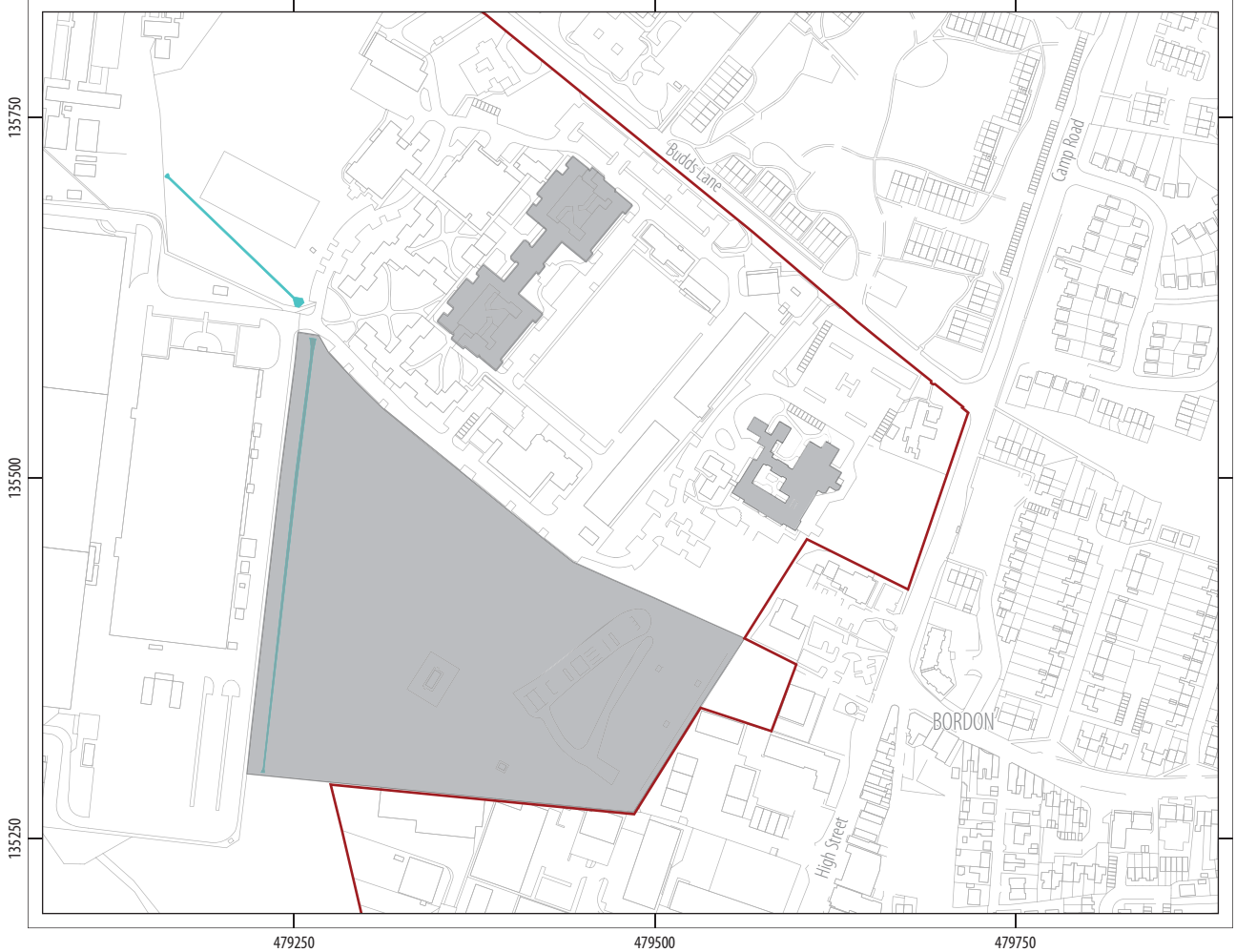
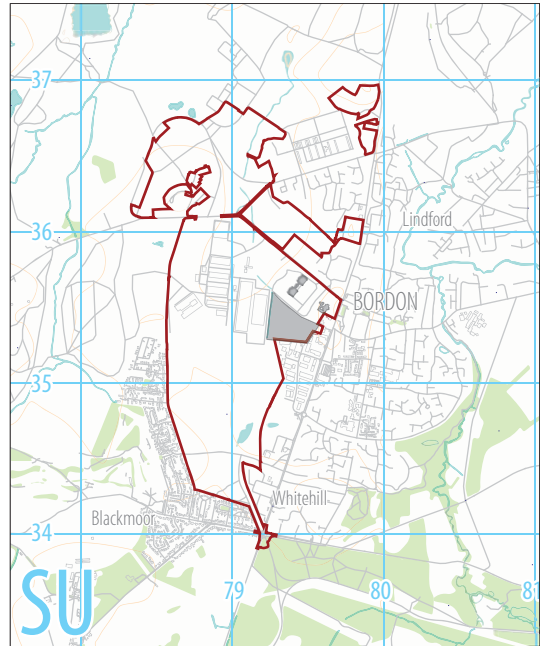
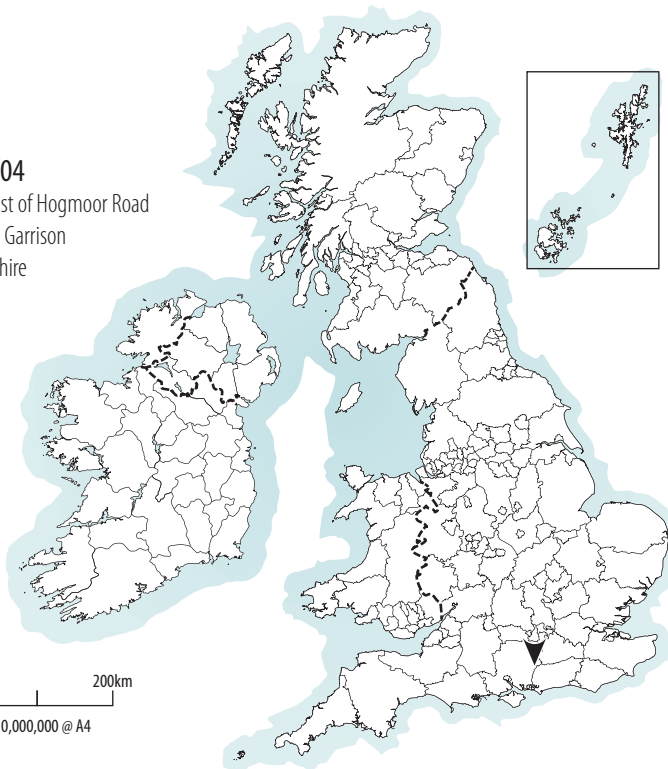
9 REFERENCES

- AMEC 2014. *Bordon Garrison Redevelopment, Heritage Statement and Significance Evaluation*.
- British Geological Survey (Website) <http://bgs.ac.uk> (accessed 25/5/16).
- Anon, 1905. *The Handbook of Design and Construction of Military Buildings* extract online at <https://www.scribd.com/document/49206980/Design-and-Construction-of-Military-Buildings-a-Handbook-for-the-Use-of-Royal-Engineer-Officers-and-Their-Staff>
- Anon, 1930. *The Handbook of Design and Construction of Military Buildings* extract online at <https://www.scribd.com/document/49206980/Design-and-Construction-of-Military-Buildings-a-Handbook-for-the-Use-of-Royal-Engineer-Officers-and-Their-Staff>
- Anon, 2010. *Pevsner's Architectural Glossary*. Yale University Press, London for The Pevsner Books Trust
- British Geological Survey (Website) <http://bgs.ac.uk> (accessed 4/11/16)
- ClfA 2014 *Standard and guidance for the archaeological investigation and recording of standing buildings or structures*. ClfA
- Evans, D. 2006. *Army Camps: history and development 1858-2000*. Online document accessed at http://archaeologydataservice.ac.uk/archiveDS/archiveDownload?t=arch-460-1/dissemination/pdf/Stage_1/army_camps_history.pdf
- Historic England, 2003. *Twentieth Century Military Sites. Current approaches to their recording and conservation*. Historic England
- Historic England, 2011. *Military Structures. Designation listing selection guide*. Historic England
- Historic England 2006 *Understanding Historic Buildings; A Guide to Good Recording Practice* [online document] Accessed from <https://content.historicengland.org.uk/images-books/publications/understanding-historic-buildings/heag099-understanding-historic-buildings.pdf>
- Headland Archaeology 2016, *Historic Building Recording of the Bunkers, Bordon Garrison, Hampshire. Written Scheme of Investigation*
- Headland Archaeology 2016b, *Archaeological Field-walking at Hogmoor Inclosure (Area 1) Bordon Garrison, Hampshire*.
- Headland Archaeology forthcoming, *Geophysical Survey Bordon Garrison, Hampshire*.
- National Archives website – Details of the records of the Royal Fine Arts Commission accessed at <http://discovery.nationalarchives.gov.uk/details/r/C35> (accessed 14/11/2016)

RISO/04
land east of Hogmoor Road
Bordon Garrison
Hampshire

0 200km
1:10,000,000 @ A4

Contains OS data © Crown copyright and database right 2016



0 100m
1:5,000 @ A4

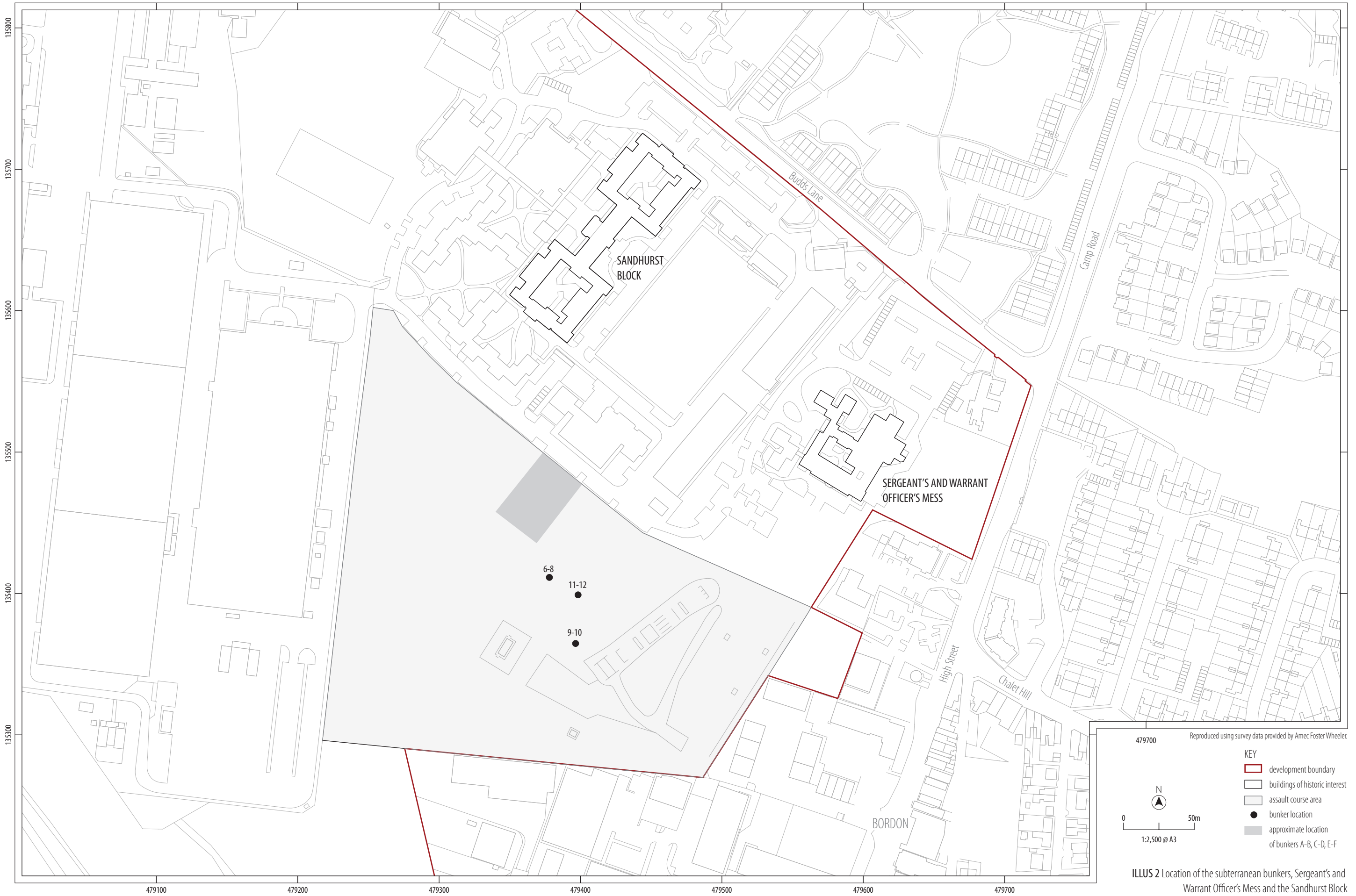
KEY
 development boundary
 study area

HEADLAND
ARCHAEOLOGY

SOUTH & EAST

Building 68C, Wrest Park, Silsoe
Bedfordshire MK45 4HS
01525 861 578
www.headlandarchaeology.com

ILLUS 1 Site location



479700 Reproduced using survey data provided by Amec Foster Wheeler

KEY

- development boundary
- buildings of historic interest
- assault course area
- bunker location
- approximate location of bunkers A-B, C-D, E-F

N
0 50m
1:2,500 @ A3

ILLUS 2 Location of the subterranean bunkers, Sergeant's and Warrant Officer's Mess and the Sandhurst Block



ILLUS 3 Southeast elevation of the Sandhurst Block viewed from across the parade ground **ILLUS 4** The main entrance and central block ground floor windows of the Sandhurst Block **ILLUS 5** The southeast elevation of the northern U block illustrating the doors and windows **ILLUS 6** The courtyard within the northern U block showing the rear door and ablution room bay with the modular extensions on the north side **ILLUS 7** The former Sandhurst Block library as an example of the central block ground floor rooms



ILLUS 8 An example of the modern arrangement of the dormitories in the Sandhurst Block **ILLUS 9** An example of the red Modern style balustrades on the stairwells within the Sandhurst Block **ILLUS 10** The south façade of the Sergeant's Mess **ILLUS 11** The new main entrance, with SEME insignia, added to the west side of the original Sergeant's Mess building **ILLUS 12** The interior of the extensions, showing the dining area on the east side **ILLUS 13** The interior of the bar on the southeast corner of the original part of the Sergeant's Mess



ILLUS 14 The dark wood interior of the former principle entrance of the Sergeant's Mess **ILLUS 15** The stairway in the original Sergeant's Mess building in context with its half landing window, the modern décor of the first floor accommodation and the modular extensions seen through the window **ILLUS 16** Bunker entrance 8 looking south towards entrance 6 **ILLUS 17** The interior of bunker 6–8 looking north **ILLUS 18** Possible bunker entrance 7 looking southeast with entrance 6 in the top right corner **ILLUS 19** The entrances of bunker 9–10 looking northeast



ILLUS 20 The interior of bunker 9–10 looking east **ILLUS 21** The short northern entrance 12 looking south **ILLUS 22** The blocked entrance 11 and the area of collapse over bunker 11–12 looking northeast **ILLUS 23** Bunker A–B was only partially subterranean with blocked west facing entrances **ILLUS 24** The almost completely hidden entrance D looking southeast **ILLUS 25** An example of the collapse and corrosion in the bunkers, in this case bunker C–D **ILLUS 26** The infilled north entrance F of bunker E–F with a view east towards bunker A–B