

KINGS TROOP RHA, WOOLWICH, HA-HA ROAD SITE, LONDON BOROUGH OF GREENWICH BUILDING RECORD AND ASSESSMENT

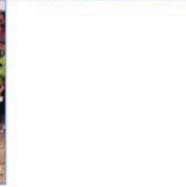
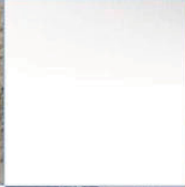
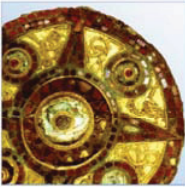
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ARCHAEOLOGY

HERITAGE

CONSERVATION

Kings Troop RHA, Woolwich, Ha-Ha Road Site

London Borough of Greenwich

Building Record and Assessment

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Non-Technical Summary

A Level 2 programme of Historic Building Recording was undertaken by AOC Archaeology Group on two Air-Raid Shelters at the Ha-Ha Road site, the proposed site for the relocation of the Kings Troop. Both shelters were of identical proportion, and built with a metal frame with concrete panels. They are two survivals of a series of shelters built on the site during the Second World War

An Assessment of ten other buildings was carried out. These buildings vary in date from the 1930s to 1990s, and are of varying quality and interest. The buildings are to be demolished as part of the relocation and this report is the final record of their structure and form.

The conclusion of the report values the structures and suggests further works that may be required prior to demolition.

1. Introduction

- 1.1 This document presents the results of a Level 2 Historic Building Record (HBR) of two Air Raid Shelters located at the south edge of the area known as the Ha-Ha Road site, as well as an assessment of above ground buildings, at Ha-Ha Road, Woolwich, London Borough of Greenwich (Figure 1). The work was carried out on the 10th to 12th of January 2011. All works were undertaken by a professional archaeologist.
- 1.2 The site is located on a military complex now known as the Ha-Ha Road site, which is centred on National Grid Reference (NGR) TQ 4282 7767. The complex is bounded to the north by Ha-Ha Road, to the east and south by Woolwich Common, and to the west by Stadium Road. The total site area covers approximately 1.5ha.
- 1.3 The site encompasses various buildings, including offices for varied uses, a chemical store, workshops, and two air-raid shelters and an administration block.
- 1.4 The proposed development involves the relocation of The Kings Troop, Royal Horse Artillery from St John's Wood to Woolwich, with a training area and common land replacing the buildings erected on site since the First World War.

2. Planning Background

- 2.1 The application site is located within the Woolwich Common Conservation Area as designated in the Greenwich UDP (2006). It is not located within a designated Area of Archaeological Potential.
- 2.2 The local planning authority is the London Borough of Greenwich. Archaeological advice to the local planning authority is provided by Mark Stevenson of the Greater London Archaeological Advisory Service (GLAAS). Planning Consent for redevelopment of the Ha-Ha Road site was approved by the London Borough of Greenwich in October 2010. Condition 2 required that the standing buildings be recorded prior to demolition. This is due to the archaeological and historic interest of the site. The buildings represent a historic use of the site, which will be lost to demolition.
- 2.3 The programme of Historic Building Recording was presented in a Written Scheme of Investigation (RPS 2010c). This determined that the air-raid shelters be recorded to Level 2 of the published guidelines (EH 2006), and that all other buildings be assessed to Level 1, to review the need for further recording. An existing paper archive was also examined. The assessed buildings are designated as follows: 10/2, a store; 10/6, a chemical store; 10/8, the Sunlight Building; 10/10, an office; 10/13, a substation; 10/14 a workshop; 10/15, the administration block and 10/17, the Libra Club.
- 2.4 The works conformed to the requirements of Planning Policy Statement 5: Planning for the Historic Environment (PPS 5) issued by the Department for Communities and Local Government (DCLG 2010).

3. Geology and Topography

- 3.1 Topographic survey indicates that the site is at around 49.5m OD with much of the ground covered by tarmac or the footprint of standing buildings. The site is protected by razor-wire-topped fences.
- 3.2 The solid geology of the application site is Harwich Formation sand with black flint (British Geological Survey 1998).

4. Archaeological And Historical Background

- 4.1 The following information is drawn from the archaeological desk-based assessment undertaken by RPS (RPS 2010a, 2010b). The site was first occupied by the military in 1914/16, when the Signal Experimental Establishment was located adjacent to Ha-Ha Road. This organisation initially worked on ground to air wireless communication. Between 1919 and 1925, the Acoustic Branch of Air Defence was also located at Ha-Ha Road.
- 4.2 A plan in the paper archive from march 1938 shows the site in some detail, and titles the land 'Signals Experimental Establishment'. One note on the plan explains that the whole of the area is WD (War Department) property, with the exception of the Ha-Ha and Circular Roads. A second note mentions that the buildings were constructed in 1914-18 and are of wood with CGI (corrugated galvanised iron) or wood and felt roofs, except where otherwise stated. One building standing on site is depicted on this map, building 10/14, depicted as 'Battery Charging'. These buildings were replaced during the 1930s. A plan dated 1939 shows Building 10/17, named as 'Drawing Office'.
- 4.3 A plan of 1950 from the Ministry of Supply depicts these two buildings, as well as part of building 10/8. This is defined as 'Machine Shop' on a 1955 plan of AWRE Woolwich Common. A ring of air-raid shelters along the southern and western limit of the site boundary are also shown. These probably date to the Second World War. AWRE had taken over the site in 1949, and employed 450 staff, the engineering facilities aiding weapon design for British nuclear weapons. Building 10/6, the chemical store and block 10/15, the administration block, are also depicted by 1955, although the latter in a smaller form than present.
- 4.4 AWRE left the site in 1963, and it was taken over by the Ministry of Aviation and/or the mechanical Engineers. Block 10/8 was enlarged in the 1960s, block 10/10 was built by 1967, as was building 10/2, whilst Blocks 10/12 and 10/28, both lightweight temporary structures date to the early 1990s. A large part of the eastern end of the site was cleared of all buildings in 1995, and returned to common land.

5. Aims of the Investigation

- 5.1 The aim of the Historic Building Recording was to make a permanent record of the structure and form of two air-raid shelters, identified as the eastern and western shelters in this report. A photographic, drawn and written record was created. Particular attention was paid to evidence for elements which had been changed, and the location of potential original fittings. The record was carried out to Level 2 of the published guidelines (EH 2006)
- 5.2 The aim of the assessment of the other buildings was to make a Level 1 record with external photography, pro-forma sheets being compiled and presented here as Appendix A. The buildings are discussed in more detail in the body of the report, with a discussion on their historic value.
- 5.3 The final aim is to make public the results of the investigation, subject to any confidentiality restrictions.

6. Methodology

- 6.1 Site procedures were followed according to Levels 1 and 2 of the English Heritage guidelines for recording Historic Buildings (English Heritage 2006).
- 6.2 The site code NAR 10 was obtained for the project from the Museum of London, and used for all fieldwork.

- 6.3 The building record for the shelters corresponded to Level 2 of the English Heritage guidelines (English Heritage 2006). Level 2 is a descriptive record, and comprises an introductory description followed by a systematic account of the building's form and function. The record includes all drawn and photographic records that may be required to illustrate the buildings' appearance and structure.
- 6.4 The assessment of the other buildings corresponds to Level 1 of the guidelines. Level 1 is little more than an assessment, which will inform any requirement for further work if necessary, or as the final record if the buildings are of limited value.
- 6.5 The recording was undertaken by Les Capon (Project Officer) under the overall direction of Melissa Melikian; General Manager, AOC Archaeology Group and monitored by Simon Blatherwick, of RPS on behalf of Morgan Sindall, and Mark Stevenson of GLAAS.

7. Results of the Building Record

7.1 Air Raid Shelters

- 7.1.1 The two Air-Raid Shelters are oriented east-west at the southwestern boundary of the site, some 8m apart. Both are sunk below ground level, with a mound of earth above. These mounds are now grassed. Both shelters have an identical basic structure, although the eastern shelter has internal partitions and the western shelter a new entrance.
- 7.1.2 The design indicates simple construction with easily manufactured and assembled materials, clearly working from a plan. The main body of each shelter is a cylinder 7.36m long with a diameter of 2.19m although a flat floor and ceiling reduces the height to 1.99m, and the floor width to 1.62m. The walls are formed of a series of iron bands 0.69 apart with three longitudinal bars on either side. The panels are infilled with concrete, sheathed on the exterior with sheets of corrugated galvanised iron. The cylinder has a door at each end, set generally centrally. The roof of the shelters seem to have been precast and added to the sides, being flat slabs that do not utilise the iron bands of the body of the structure. The shelters are sealed by deposits of coarse gravel in a sandy clay soil matrix, 0,5m deep over the top of the shelter, and sloping down the sides at an angle of 30 to 35°.
- 7.1.3 Both ends of each shelter have a stair leading in from the north, with a small antechamber at the base, and a small room to the south. Doors at the foot of the stairs and at the entrance to the shelter proper give some blast protection and may also be a gas trap, but the doors and fittings were in poor condition.. There are six steps, and the floor of the shelters lie 1.38m beneath the ground surface outside. The entrance to the stair has an angled concrete wall, reflecting the angle of the earth mounded over the top.
- 7.1.4 The small rooms at the foot of the stairs have no fixtures or fittings remaining, save vertical iron pipes providing ventilation. These small rooms are presumed to have contained the limited toilet facilities, each measuring 0.71m by 0.85m in plan. The walls of the room are concrete, with the imprint of timbers showing that the concrete was poured into wooden formwork.
- 7.1.5 Both shelters retained fuse boxes, electrical fittings, and radiators, although the light fittings were only present in the western shelter.

Eastern Shelter (Figure 3)

- 7.1.6 The eastern of the two shelters had two internal, off-set brick walls added to the main build. These partitioned the room, with a larger space to the west. A radiator in the eastern part was formed of three parallel pipes. A fuse box on the eastern wall of the shelter has no manufacturer's name and is undated.
- 7.1.7 A door lying broken at the base of the eastern stair displays the sign "Ministry of Aviation Personnel Only" and a worn print with the word 'Radioactive' still visible
- 7.1.8 A sondage excavated through the mound over the structure of the shelter revealed that a layer of topsoil remained buried (105), cut into by the construction cut for the shelter, which appeared to be vertical. After the shelter was built, a layer of dark brown silty sand with high gravel content (104) was mounded up to a height of 0.45m, with a layer of compact yellow sand (103) above this, roughly to the height of the roof. The mound and roof was sealed by a layer of brown sandy clay with moderate gravel content (102), 0.28m thick, and a layer of topsoil and turf above (101), forming the surface of the shelter's mound. The mound may have been originally turfed to camouflage its location.



Plate 1: View of Eastern Air Riad Shelter



Plate 2: Sign on Door, Eastern Shelter



Plate 3: Exterior of Eastern Shelter, Showing CGI Imprint



Plate 4: Eastern Entrance To Eastern Shelter



Plate 5: Eastern Partition of Eastern Shelter



Plate 6: Western End of Eastern Shelter

Western Shelter (Figure 4)

- 7.1.9 The western shelter has been modified, perhaps repaired, with a new stairway in the eastern end with a brick stairwell. The original eastern stair has been blocked and backfilled. The shelter contains wooden decking on the floor, but this does not appear to be original. The fittings are more extensive than the eastern shelter, with all light fittings in place. The fuse box attached to the eastern wall may be an original feature: the cover has a sunburst motif that may be of late 1930s or 1940s date.
- 7.1.10 A sondage excavated at the eastern end of the shelter revealed that a section of corrugated galvanised iron was still extant over the concrete of the body of the structure. A single deposit of gravel-rich brown silty sand (107) formed the mound, 0.33m deep over the roof, and this was sealed by topsoil and turf (106)



Plate 7: Western Bunker, Looking Southwest



Plate 8: Western Shelter, Looking West



Plate 9: Western Shelter, Looking East



Plate 10: Western Shelter Fuse box



Plate 11: Sunburst on Fuse box

7.2 Assessment of the Standing Buildings

7.2.1 The group of buildings that remain at the Ha-Ha site after various stages of demolition until the 1990s are of varying quality, age, condition and value. To judge stylistically, and by examination of historic plans in the paper archive, a sequence of construction can be shown. The earliest buildings on site, constructed in 1914-18 have left no upstanding trace. The earliest standing building is in the centre of the site, southwest of the entrance, and is Building 10/14, and the latest are prefabricated blocks from the 1990s. The buildings are described according to their numeric identity, used by the Military.

Building 10/2 (Figure 5)

- 7.2.2 This roughly rectangular building is built of red brick with a flat roof and ventilator block on the roof. The flat roof is supported by north-south beams on internal brick buttresses to the west, whereas, the east side of the building has beams running east-west.
- 7.2.3 It was clearly a chemical laboratory, since some fittings survive which show this. It is presumed that research was conducted within and that this building probably dates to around 1960 whilst AWRE occupied the site. It has a compressor room with separate access in the southwest corner. The building appears to retain many original features, including Crittal windows on the east and west sides, which light former laboratory spaces within. The windows have concrete sills and lintels.
- 7.2.4 The southernmost room is accessed by a door in the south and a pair in the east, and is lined with thick wooden shelves similar to those in the Chemical store, again with alpha-numeric labelling. This led to a doorway into an antechamber with a laboratory to the east and a second laboratory to the north with sinks, benches and a fume cupboard. In the eastern side, one large room is subdivided by semi-glazed metal partitions. Most fittings and fixtures are still present, including radiators and pipework, gas pipes and water supply. One piece of ephemera is a note encouraging good work (see plate below).
- 7.2.5 A photographic record of this building, including black and white images of the principal areas and a digital record of all rooms was made. The profile of the building was also recorded.



Plate 12: View of Chemical Laboratory Looking northwest.



Plate 13: Chemical Laboratory Looking Northwest,
Internal.



Plate 14: Compressor Room

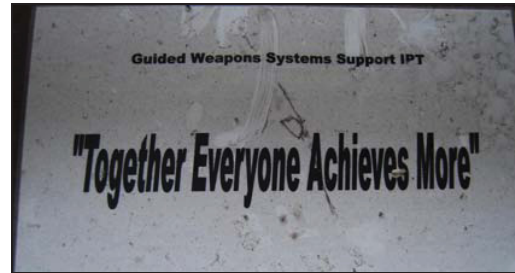


Plate 15: Motivational Note

Building 10/6 (Figure 6)

- 7.2.6 The smallest building on the site is a chemical store near the western boundary. It comprises two rooms within a yellow brick block, with quoins that splay as they rise. The blandness of the walls is relieved by projecting brick headers. The roof slopes down southwards, supported by an internal beam on internal buttresses. It is depicted on the 1955 site map, and may be part of a research facility
- 7.2.7 There is a door in each of the east and west walls. The east door has a weighted spring to help keep it closed. On the brickwork to the south of the door is the designation of the building as 'J' and a warning of CO₂ inside. The east door leads to a larger room. This room is ventilated by two rows of ventilation bricks on either side, and has four brick plinths on the north side. Whatever they held is gone. Above the plinths and bolted to the internal beam is an I-beam with a stencilled note for 10cwt load. On the south are thick wooden shelves on brick walls, numbered A₂ and A₃ to D₂ and D₃.
- 7.2.8 Next to the eastern entrance is a CO₂ station, with fittings for three bottles, and an advertising plaque for Pyrene. CO₂ is a fire retardant, and this may have been present due to the storage of volatile chemicals. A string of reinforced lighting runs along the walls, manufactured by Holophane.
- 7.2.9 The rear room has no features save a door to the west and ventilation bricks in the walls.



Plate 16: Chemical Store Looking West.



Plate 17: Internal View of Chemical Store.



Plate 18: Pyrene Plaque.

Building 10/8 (Figure 7)

- 7.2.10 Parts of Building 10/8 are shown on the 1955 plan, although its full limit is not depicted until 1965. The Building may be divided into three phase. The first phase is represented by a ware-house-like building with a twin pitched northlight roof, with 12 bays. This is open-plan inside. The brickwork is yellow, in stretcher bond.
- 7.2.11 The second phase consists of a long single storey flat-roofed extension to the west, 32m long, slightly wider than the initial phase. This has been slightly extended by the addition of red brick toilet block on the end. Of note is the curious western end, which has a slight point in the centre.
- 7.2.12 The third extension is a twin of the first phase: an identically sized block with a twin northlight roof. The first and third phase builds can be identified by subtle difference in the details, specifically continuous window lintels of the gable ends on the older part, and individual lintels on the newer. This part of the block has been subdivided into offices, whereas the rest is more open plan, recently in use as workshops.
- 7.2.13 The roof trusses for the northlight roof were partially visible: a girder construction with a kingpost to the ridge and triangular half trusses supporting the long side. The roofing material contains asbestos. Entrance was not possible due to this, but a plan of the building was copied from the paper archives, which shows the layout, but not function of the rooms and the activities carried out within.



Plate 19: Building 10/8 Looking Northwest.



Plate 20: Building 10/8 Looking Northeast



Plate 21: West End of Building 10/8 Looking North.



Plate 22: Building 10/8 Looking East

Building 10/10 (Figure 8)

- 7.2.14 Building 10/10 is a long thin building of two storeys in the centre of the site. It has a girder frame infilled with yellow bricks, and is a well-proportioned building with extensive windows along both sides of both floors. The roof is flat, with an additional plant room. The 1965 Plan denotes it as Workshop Wing Less Pubs & W/Study and notes 'occupied 1st January 1965'.
- 7.2.15 The building measures 41.4m by 8.75m in plan. Access was not possible due to the presence of asbestos, but a plan in the paper archives gives the function of some rooms, including Reprographics, Stores and Post-Room, plus toilets and First Aid on the Ground Floor. There is a staircase towards each end of the building. There are also a set of double doors on the ends at ground floor level. Inspection of the interior through windows appeared to show that most signage and fittings that indicate the use of rooms has been removed, but basic fixtures such as pipework and services remains.



Plate 23: Building 10/10 Looking Southeast.



Plate 24: Building 10/10 Looking Northeast

Building 10/12

- 7.2.16 One of two modern blocks on the site; Building 10/12 is a rectangular building with multiple rooms inside. There are plans of this building in the paper archive. The building is typical of modern (post 1990) buildings, with prefabricated walls, floors and ceilings. It is constructed to provide a rapid solution for the office needs, with a lightweight building which may be classed as temporary, although these has been on the site since 1991.
- 7.2.17 The building is single storey, with step and ramped access, with windows on all sides. A door in the north is the principal entrance. Small skylights towards the centre of the building provide natural light for internal rooms. The building stands on breezeblock piers.



Plate 25: Building 10/12 Looking East

Building 10/13

- 7.2.18 This small red brick building houses CO₂ and gas and electricity supplies, with a small addition on the southern end with a Gents toilet. There is no plan of this building in the paper archive, and there was no access because the services within were still active. The building is of single storey, has a flat roof and is of functional design. The few windows are Crittal windows and the sills concrete.
- 7.2.19 The door to the CO₂ store is covered with signage, dominated by a CO₂ sign with a logo for the Pyrene Company Ltd, on the Great West Road, Brentford,



Plate 26: Building 10/13 Looking Southwest



Plate 27: Building 10/13 Looking Southeast



Plate 28: Building 10/13. Door Signage

Building 10/14 (Figure 9)

- 7.2.20 This structure is depicted on the 1938 map, and stylistically suggests an art-deco influence. Although quite plain and utilitarian, the building has well-lit internal rooms with large windows, while the exterior brickwork is adorned with almost rusticated quoins and each long side, facing east and west has a central bay flanked by squared brick pillars. The pillars have tile and bricks on end at the tops, giving a hint of the ornate. The historic map describes the rooms of this building as 'Battery Room' and 'Power Switch', where legible. The rooms are accessed off a central north-south corridor.
- 7.2.21 The window openings are notable for flat brick arches and angled brick sills, in contrast to the majority of the other buildings on the site. Also of note is the white paint that makes this building stand out. This may not have been the war-time colour scheme, but it does suit the building with its hint of design rather than functionality. The brickwork below a damp-course is painted black.
- 7.2.22 There is a small extension on the east side, with new access doors. This detracts from the visual aspect of the site. The western aspect of the building is obscured by the adjacent building (10/13).
- 7.2.23 The partial first floor part of the building is clad in corrugated galvanised iron (CGI), with hints of army green showing through. This may be a later addition or repair to the building, since it contrasts strongly with the building materials of the ground floor.
- 7.2.24 Entrance to the building was not undertaken, due to the presence of asbestos in the structure, but a floor plan in the archives gives the layout. The plan is undated, but is probably post-World War II.



Plate 29: Building 10/14, Looking Northeast



Plate 30: Building 10/14 Looking South

Building 10/15 (Figure 10)

- 7.2.25 Part of this building is depicted in 1955, when it described as Police Buildings, and it is shown with an extension to the south on the 1965 plan. The building is an irregular shape with many small rooms: office space, as well as facilities for washing, and cleaning. It is a single storey and constructed of yellow brick with a flat roof. All windows are recent, so the originals are lost.
- 7.2.26 The main entrance to the building is across an apron of tarmac, and this was also the entrance for the site. The doors open onto a fairly large room with a reception desk towards its rear. A corridor leads east to a group of four rooms: two offices and two toilets. A second corridor leads south to more toilets and kitchen areas, as well as to two 1960s extensions: one is a store; the other is of unknown function. To the west of the reception area are two offices.
- 7.2.27 The interior is in good condition, with floor and wall surfaces undamaged. What is notable is the lack of signage designating functions of each room, or the personnel who may have worked there.



Plate 31: Front of Building 10/15, Looking South.



Plate 32: Building 10/15 Corridor Looking East.

Building 10/17 (Figure 11)

- 7.2.28 Directly east of Building 10/14 is a rectangular two-storey structure first depicted in 1939, and therefore slightly later than Building 10/14. It is well-proportioned and appears to be in good condition. The map describes this as a drawing office, but also telephone exchange and 'Libra club'.
- 7.2.29 The ground floor has one large room and three small, with a roughly central staircase with landings leading to the first floor. The upper floor has more partitions, with a suite of rooms on either side.
- 7.2.30 The external aspects are plain yet attractively proportioned, and the large windows give adequate light to all internal spaces. The sills are brick, the lintels concrete. The tops of the walls have concrete wall plates with a low parapet wall above. The exterior is painted white with black paint below the damp course, and makes an attractive group with Building 10/14. It should be noted that this white colour was not suitable for camouflage during the Second World War, the site being a potential target for bombing raids, therefore a post-war paint scheme.



Plate 33: Building 10/17, Looking Northeast.



Plate 34: Building 10/17 Looking Northwest

Building 10/28

- 7.2.31 One of two modern blocks on the site, Building 10/28 is an extensive building measuring some 47m by 30m, and is a lightweight construction of prefabricated panels. The entire building is supported on breezeblock piers.
- 7.2.32 There is access to the building on the west side and south side, with both ramped and stepped approaches. Light to the building is provided by windows on all sides, and by skylights on the roofs for internal rooms.



Plate 35: Building 10/18 Looking Northeast

8. Conclusions and Interpretation

- 8.1 The buildings on the site at Ha-Ha Road represent partial survivals of various phases of development and evolution of the site; these developments suited the differing requirements of the various departments of the Armed Services that were stationed there. The earliest structures date to the mid 1930s, when the site was occupied by the Signals Experimental Establishment the earliest building is designated Building 10/14, an art-deco style building described as 'Battery Charging' on the 1939 site plan (Figure 13). The building has been slightly extended, and its current white-painted exterior may not be the original finish. Also of early date is Building 10/17, originally a Drawing Office, situated close to the Battery Charging, and stylistically similar, although plainer. The building is well proportioned, and entirely suitable as a drawing office, with a lot of light provided by the large windows. Some original fittings may remain. These two buildings are the only two surviving buildings predating the Second World War on the site. Their significance is reduced, now that they are divorced from their original function, but they have style and a degree of design that is lacking in the more functional, recent structures.
- 8.2 The Air Raid Shelters seem likely to have been constructed during the Second World War, as shelters for the SEE staff. They were built in identical form, using identical materials, and are the only two that survive on the site; thirteen are shown on a plan of 1955. They are built of materials that could be rapidly assembled; they appear to be formed of metal struts, panels infilled with cement, with wooden formwork providing the *in-situ* mould for the entrances and Corrugated Galvanised Iron the formwork for the body of the shelter. The fittings such as lights, radiators and the fuse box in the western shelter are probably original. The sunburst on the fuse box in the western shelter owes much to 1930s design rather than 1950s, so may indicate that the shelters date to the Second World War. These buildings have been photographed, planned, and reported upon fully in this report.
- 8.3 Part of Building 10/8 is first depicted on a Ministry of Supply Plan of 1950, when it is smaller than its present form; the northern two ranges only being shown. This is shown again on a plan of 1955 entitled 'AWRE Woolwich Common', and two new buildings are depicted: Buildings 10/6 and 10/15. The Air Raid Shelters are also depicted on plan for the first time, but this may be more the result of Post-War openness, rather than evidence for their construction in the 1950s. These buildings have functions that relate to the use of the site by AWRE during the early years: Building 10/8, Machine Shop, Building 10/6, Oil Store, and Building 10/15, Police Buildings. These buildings have slight architectural interest. The taller parts of Building 10/8, with its northlight roof have a typical girder frame and are common in buildings of this date. The other two buildings display the necessities of function. The Oil Store, later Chemical Store is a simple brick construction as befits a store building,

- notably separate from other structures, presumably because of flammable contents. The Police Building (Building 10/15) provides security for the site, and is entirely functional, with a reception desk, offices and welfare facilities. The need for Police Buildings rather than a regular guard may be necessitated by conducting Atomic Weapons Research on the site. The police were probably Military Police rather than civilian.
- 8.4 The use by AWRE saw one further building erected; Building 10/2, the Chemical Laboratory. This is another building of functional and practical design, mostly containing original fixtures, and many original fittings including a fume cupboard, cabinets, sinks, and a gas supply. The building is of low architectural merit, but it retains its original Crittal windows, unlike most other buildings on site.
- 8.5 The Chemical store was also refurbished by the early 1960s: the Pyrene Company Ltd's signage is of this date.
- 8.6 After the departure of the AWRE, the 1965 Map shows REME and MOA in charge of the site. Building 10/15 has been enlarged, as has Building 10/8. Building 10/13 is dated as 1964, and Building 10/10 as 1965 (Figure 15). The 1965 Map gives functions and uses for all buildings. These later buildings are mostly functional, but the girder frame of Building 10/10 gives an attractive, regular building with elements of design.
- 8.7 The two pre-fabricated large offices, Buildings 10/12 and 10/28 date to 1991 and are common buildings of this style, although rather large. They are of little historical interest, but are elements of the site as it continued in use at the end of the 20th century and the beginning of the 21st.
- 8.4 The focus of the buildings is their use to the military, and the requirements, at first, for research. The importance of this group of disparate parts has been reduced. Their lack of furnishings and signage fittings has made their original function unclear, but each had a specific function when first established, relevant to the Department running the site.

9. Further Work and Publication

- 9.1 Given the limited survival of fixtures and fittings within the standing buildings, and the existence of ground plans for most, only limited further fieldwork may be necessary. This would have to take place after the removal of any potential hazards such as the known asbestos in most buildings. Given the low architectural quality of the buildings, only limited additional photography of principal rooms, corridors, roof trusses, is recommended. Should plant be present in any of the buildings that sheds light on the activities carried out during the research years from 1930-1963, a photographic record may be merited, particularly if manufacturers names are present, which may provide a tight date.
- 9.2 The earliest standing buildings, 10/14 and 10/17 may merit a slightly more detailed examination, possibly including a profile of the buildings to understand and illustrate the height and construction methods,.
- 9.2 Copies of the report will be issued to the LPA archaeological advisor, the SMR Manager, LAARC and the local studies library on the understanding that it will become a public document after an appropriate period of time.
- 9.3 A short summary of the results of the evaluation will be published with a short summary submitted to the London Archaeologist roundup, and grey literature added to the online ADS OASIS project (Appendix A).

10. Archive Deposition

- 10.1 The archive will be prepared in accordance with local and national guidance (UKIC 1990, Brown & AAF 2007). On completion of the project, the archive, consisting of paper records, drawings, and digital photographs, will be deposited with the London Archaeological Archive and Resource Centre.

11. Bibliography

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KING'S TROOP RHA, WOOLWICH, HA-HA SITE, LONDON BOROUGH OF GREENWICH:
BUILDING RECORDING AND ASSESSMENT

Site Location Within London

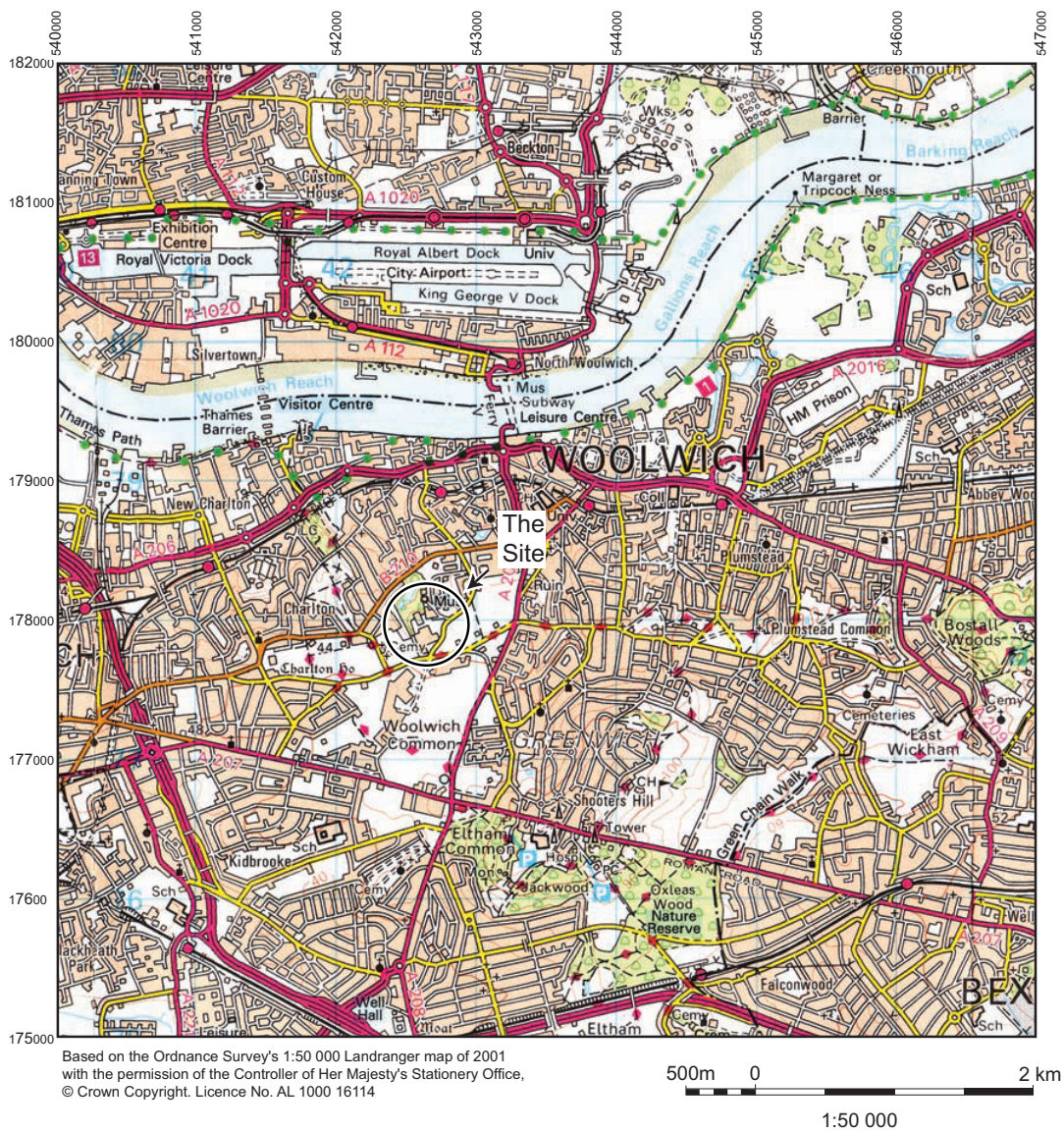
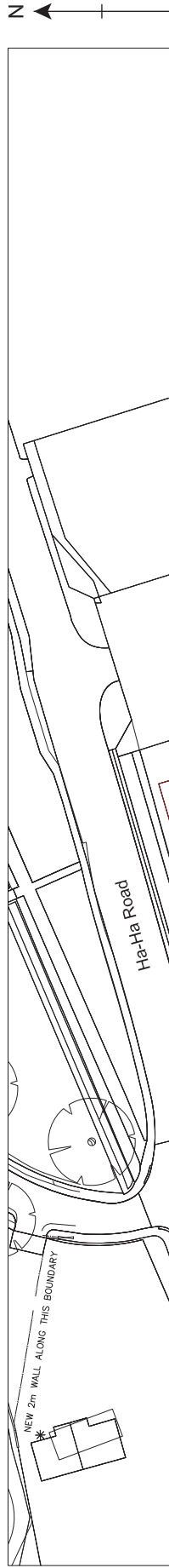


Figure 1: Site Location

KING'S TROOP RHA, WOOLWICH, HA-HA SITE, LONDON BOROUGH OF GREENWICH:
BUILDING RECORDING AND ASSESSMENT



Based on the Plan Provided by the Client

Figure 2: Detailed Site Location, Showing Buildings for Recording

□ Buildings Recorded/Assessed

KING'S TROOP RHA, WOOLWICH, HA-HA SITE, LONDON BOROUGH OF GREENWICH:
BUILDING RECORDING AND ASSESSMENT

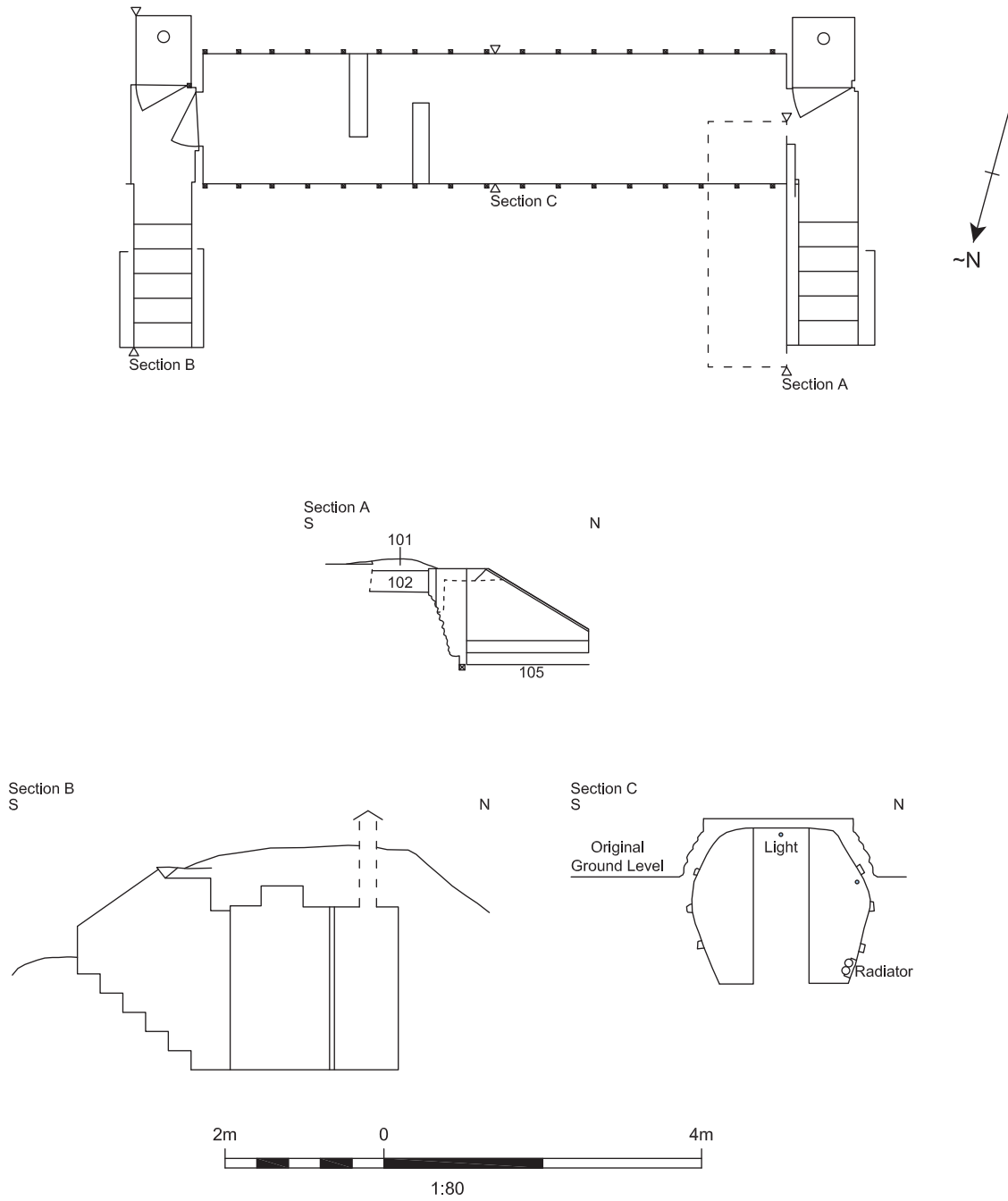


Figure 3: Eastern Shelter: Plan & Profiles

KING'S TROOP RHA, WOOLWICH, HA-HA SITE, LONDON BOROUGH OF GREENWICH:
BUILDING RECORDING AND ASSESSMENT

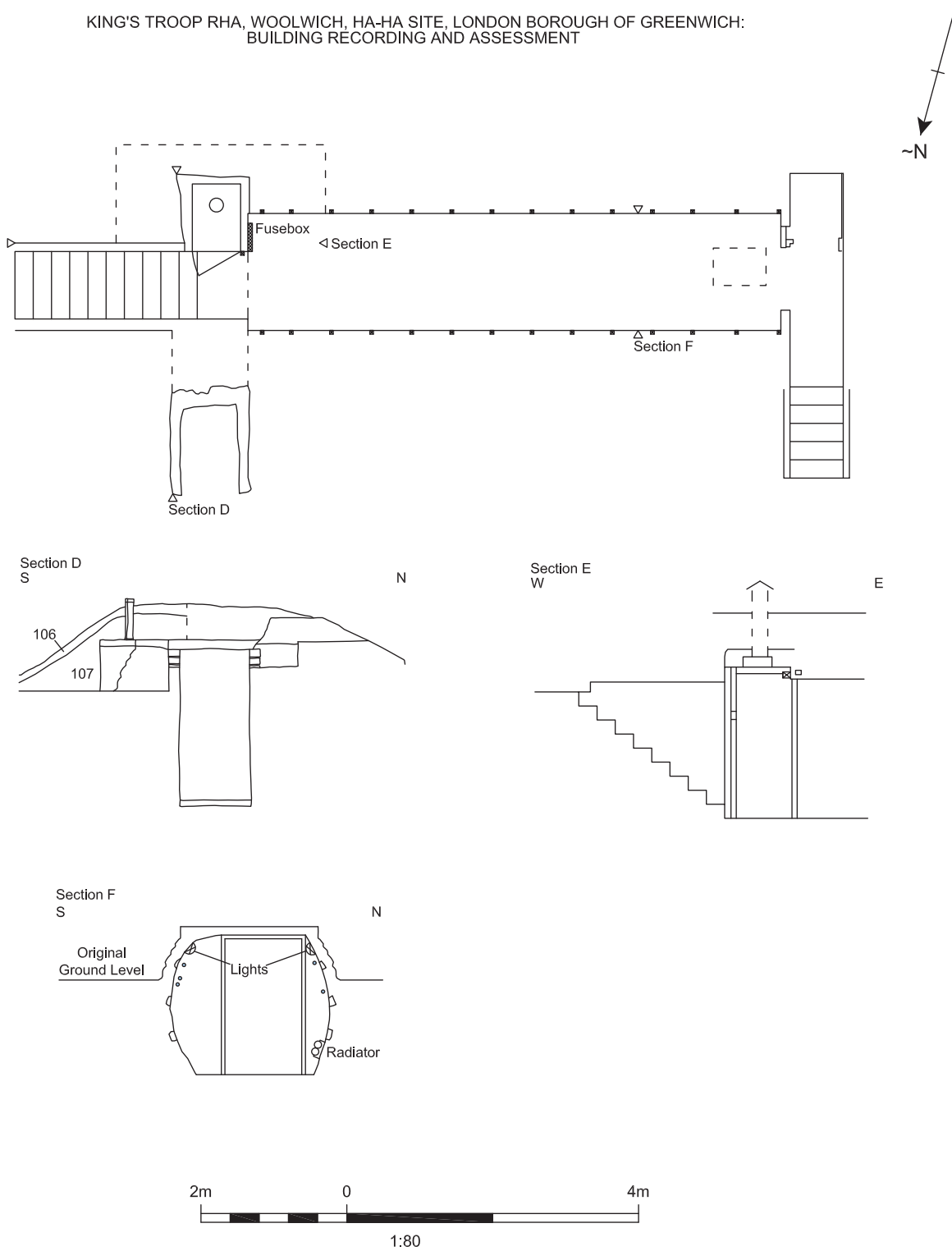


Figure 4: Western Shelter: Plan & Profiles

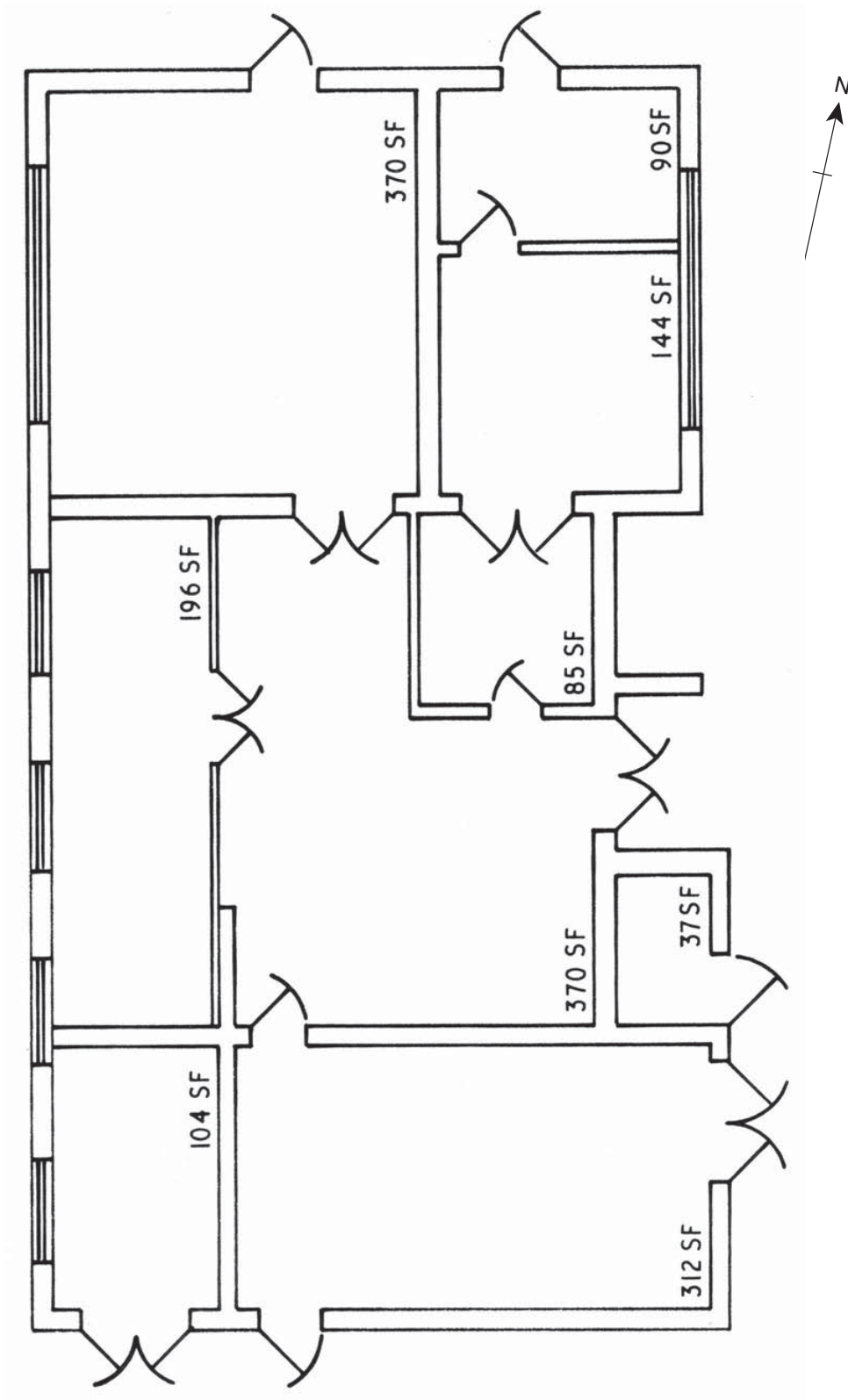


Figure 5: Building 10/2 Plan

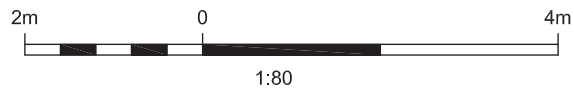
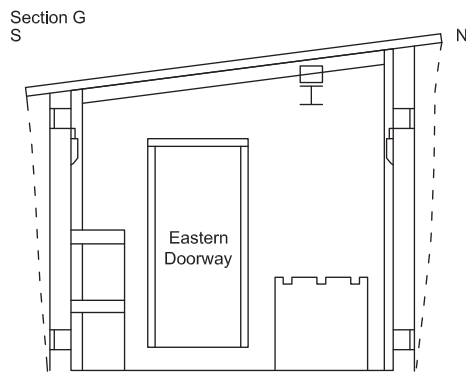
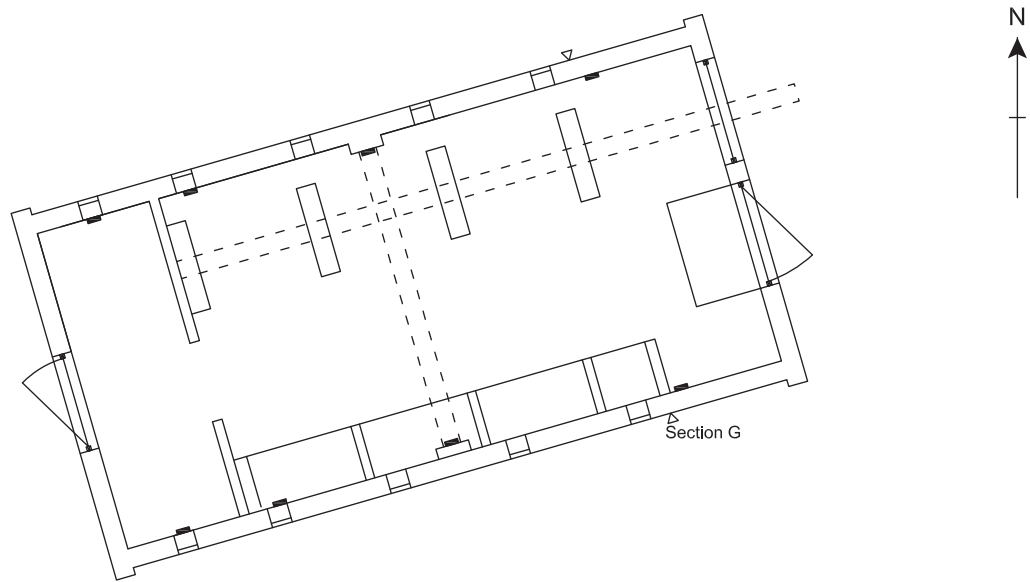


Figure 6: Building 10/6: Plan & Profile

KINGS TROOP RHA, WOOLWICH, HA-HA SITE, LONDON BOROUGH OF GREENWICH:
BUILDING RECORDING AND ASSESSMENT

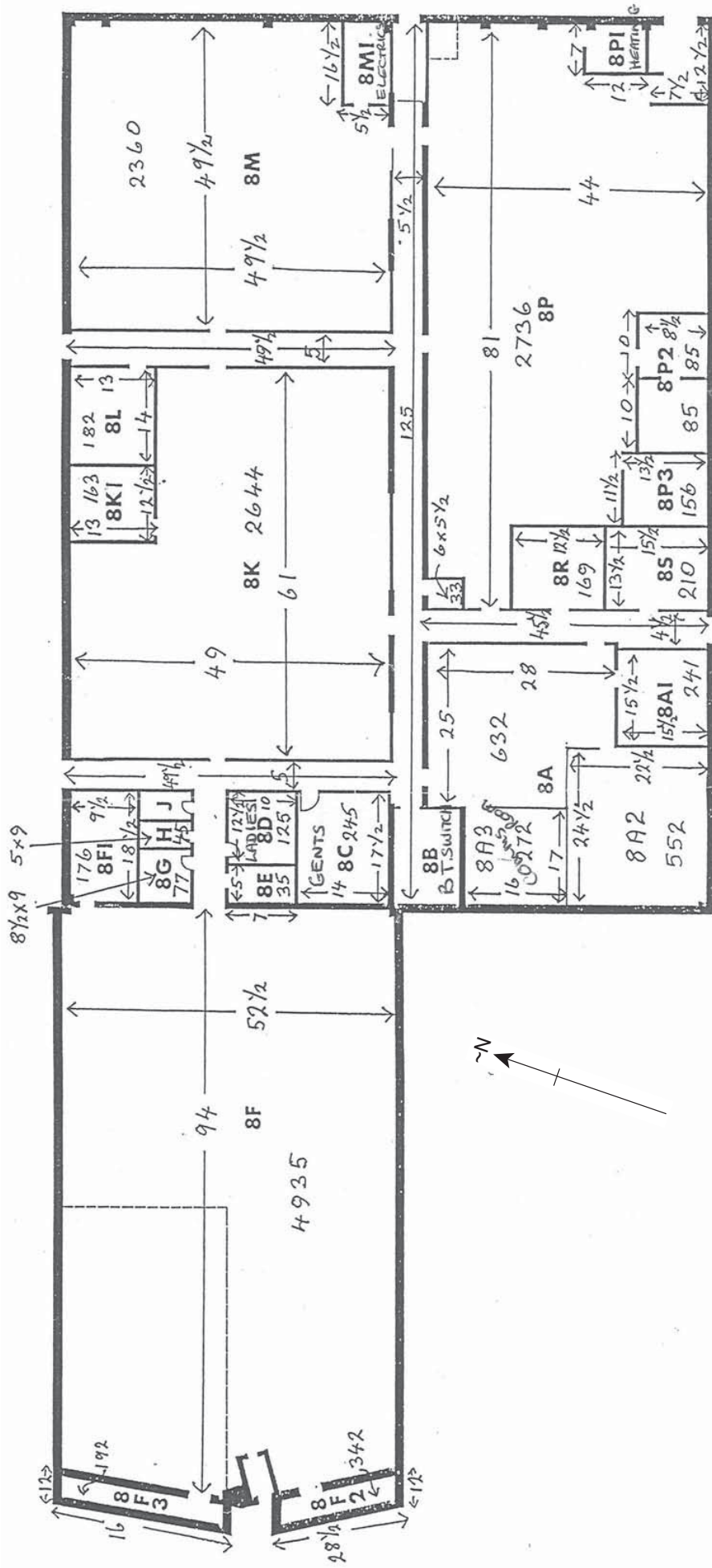


Figure 7: Building 10/8 Plan

KINGS TROOP RHA, WOOLWICH, HA-HA SITE, LONDON BOROUGH OF GREENWICH:
BUILDING RECORDING AND ASSESSMENT

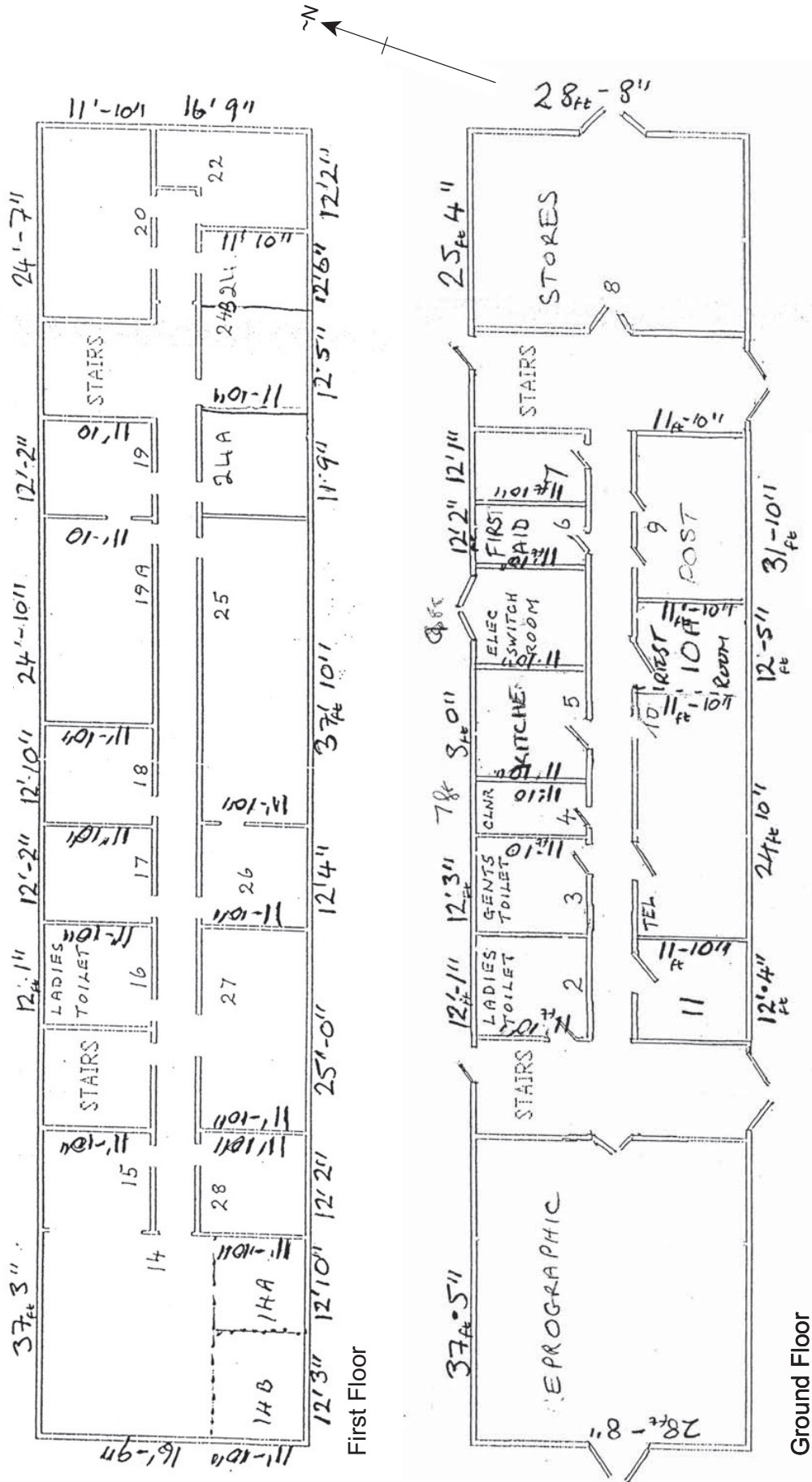


Figure 8: Building 10/10 Ground Floor and First Floor Plans

KINGS TROOP RHA, WOOLWICH, HA-HA SITE, LONDON BOROUGH OF GREENWICH:
BUILDING RECORDING AND ASSESSMENT

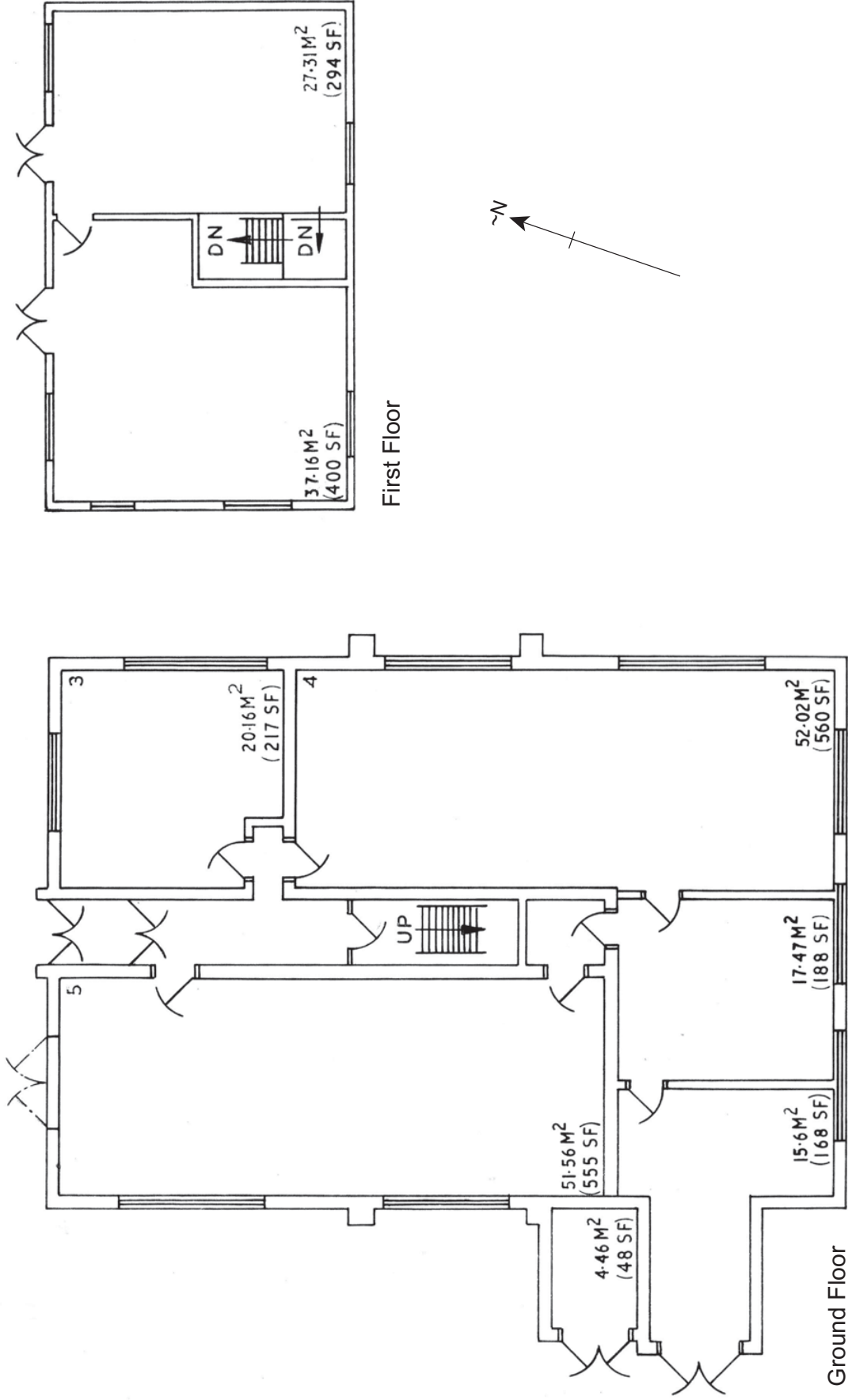


Figure 9: Building 10/14 Ground Floor and First Floor Plans

KINGS TROOP RHA, WOOLWICH, HA-HA SITE, LONDON BOROUGH OF GREENWICH:
BUILDING RECORDING AND ASSESSMENT

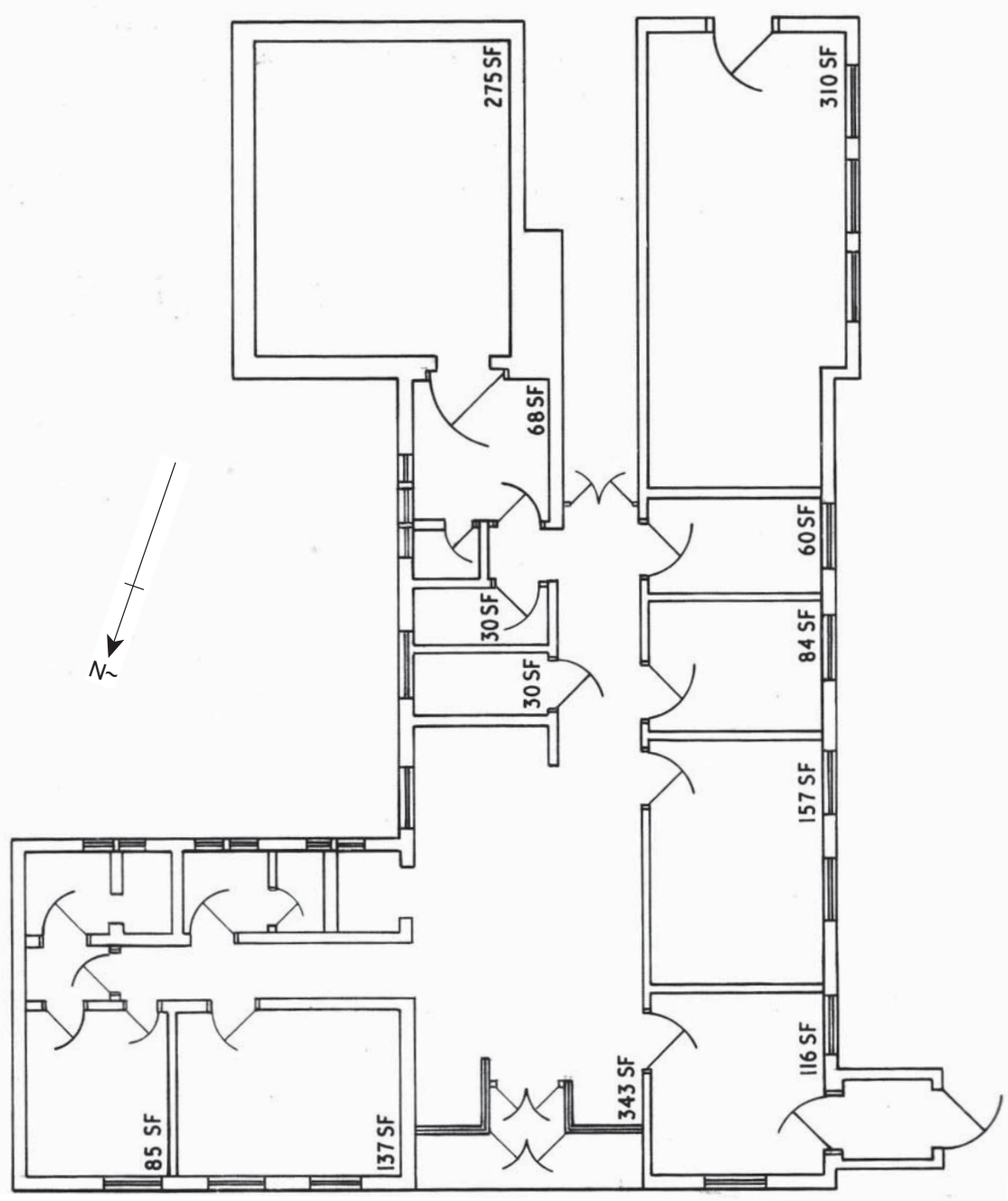
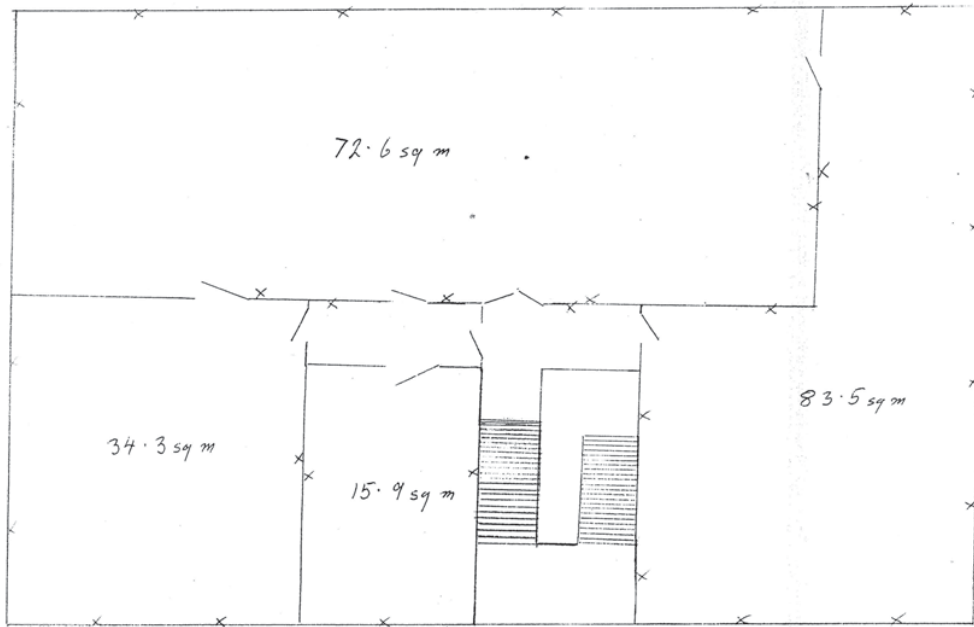
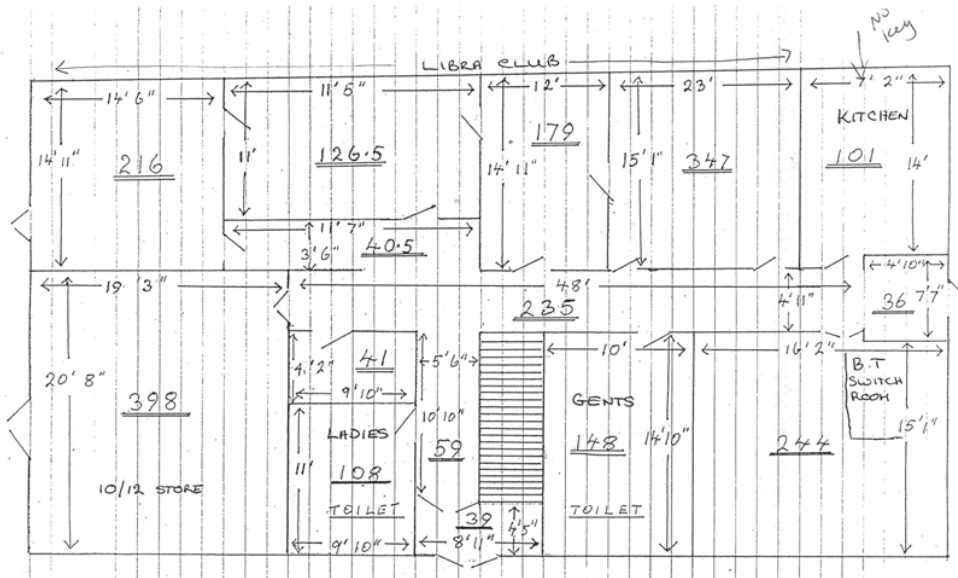


Figure 10: Building 10/15 Plan



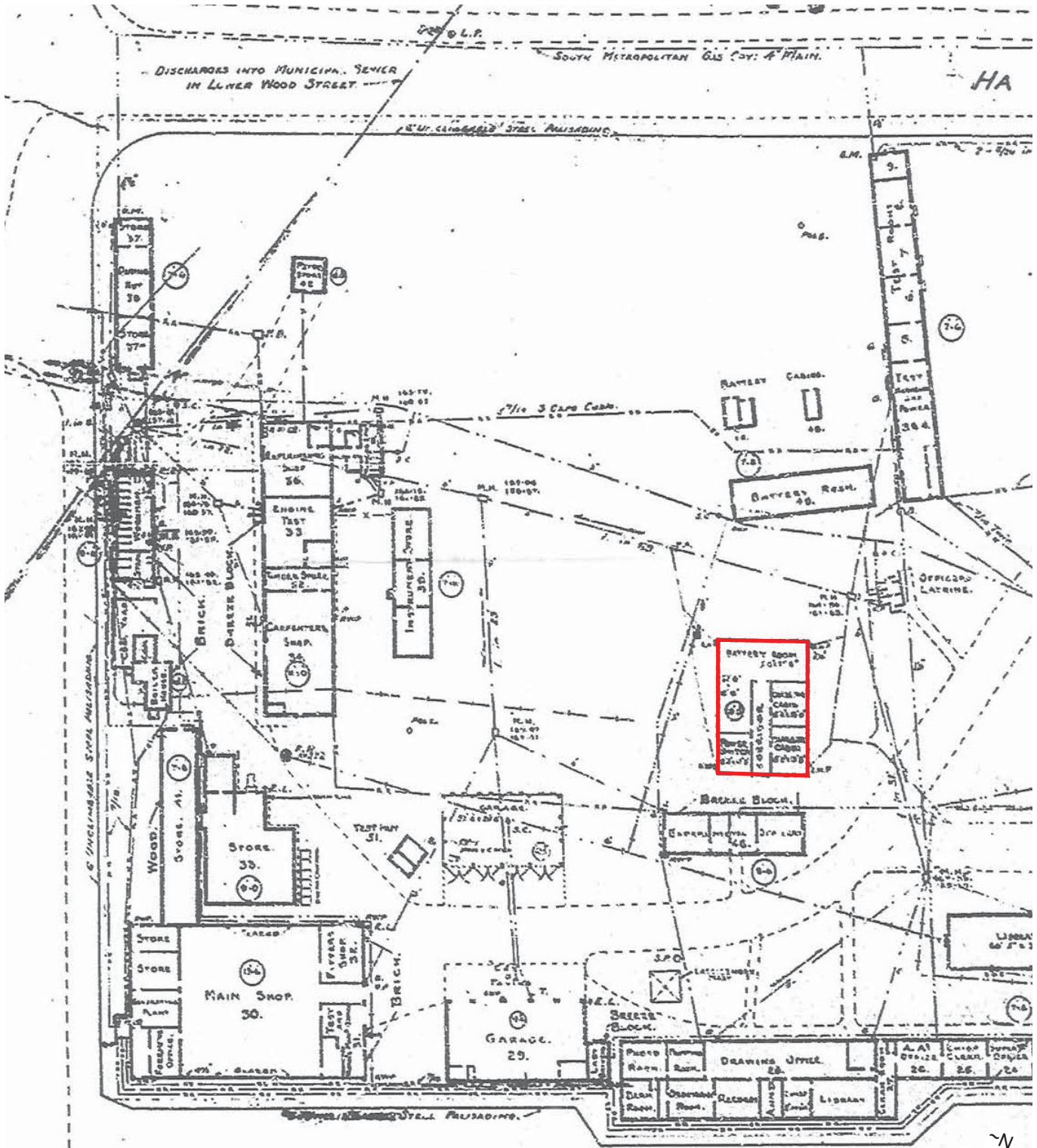
First Floor



Ground Floor

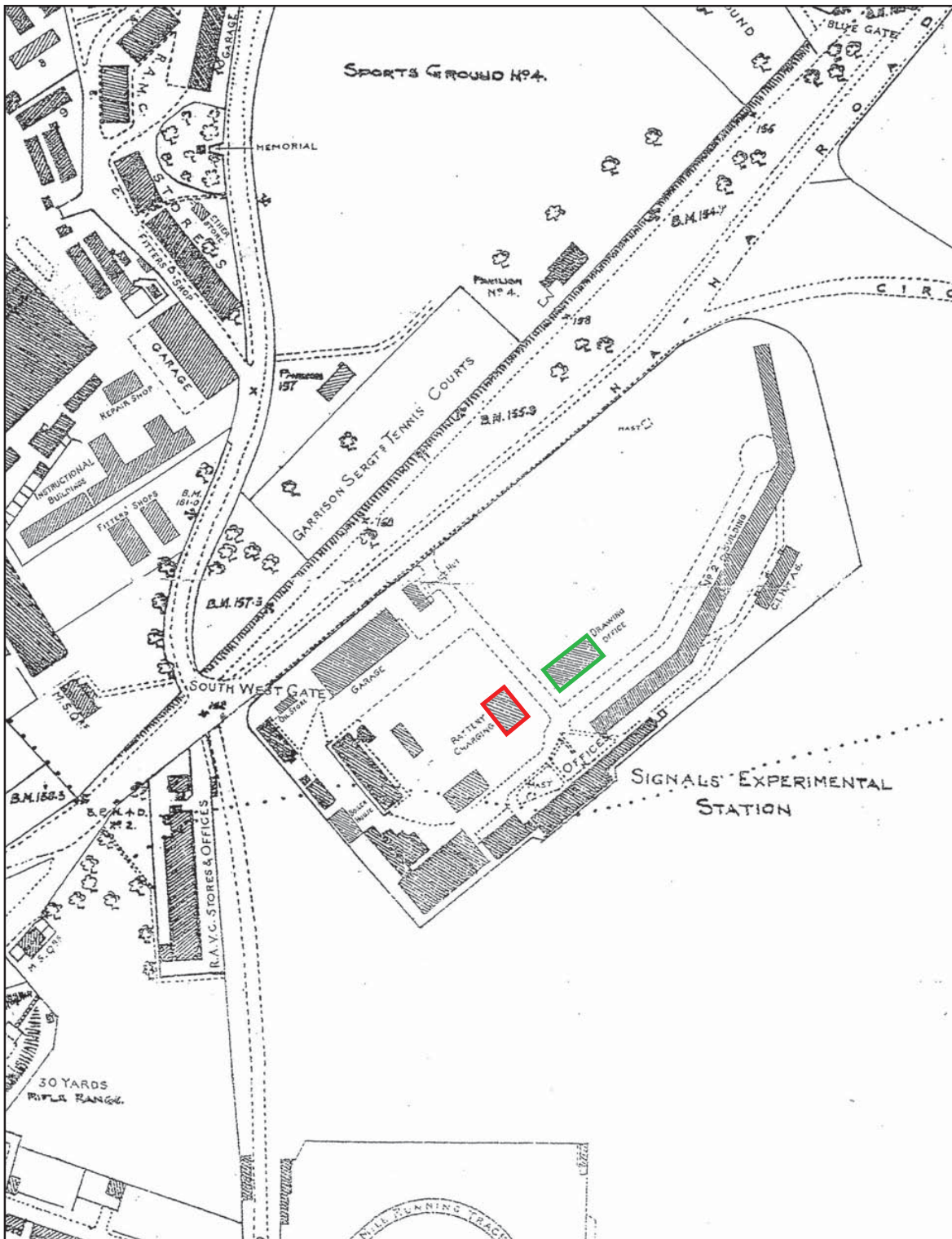
Figure 11: Building 10/17 Ground Floor and First Floor Plans

KING'S TROOP RHA, WOOLWICH, HA-HA SITE, LONDON BOROUGH OF GREENWICH:
BUILDING RECORDING AND ASSESSMENT



Building 10/14

Figure 12: 1938 Site Plan

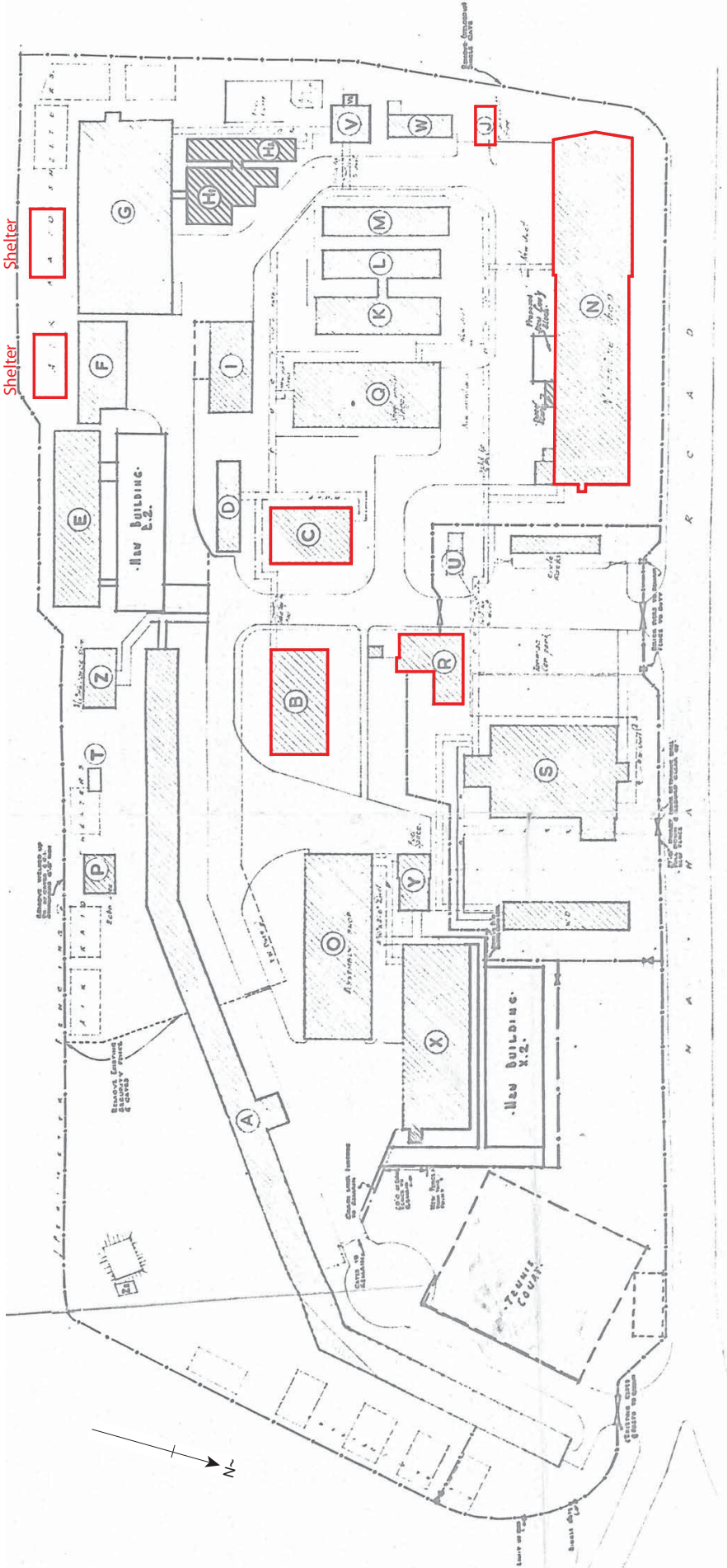


Building 10/14

Building 10/17

Figure 13: 1939 Site Plan

Fig. 3: Eastern Shelter
Fig. 4: Western Shelter



- Buildings Still Standing & Air Raid Shelters
- B = Building 10/17
- C = Building 10/14
- J = Building 10/6
- N = Building 10/8
- R = Building 10/15

Figure 14: 1955 Site Plan

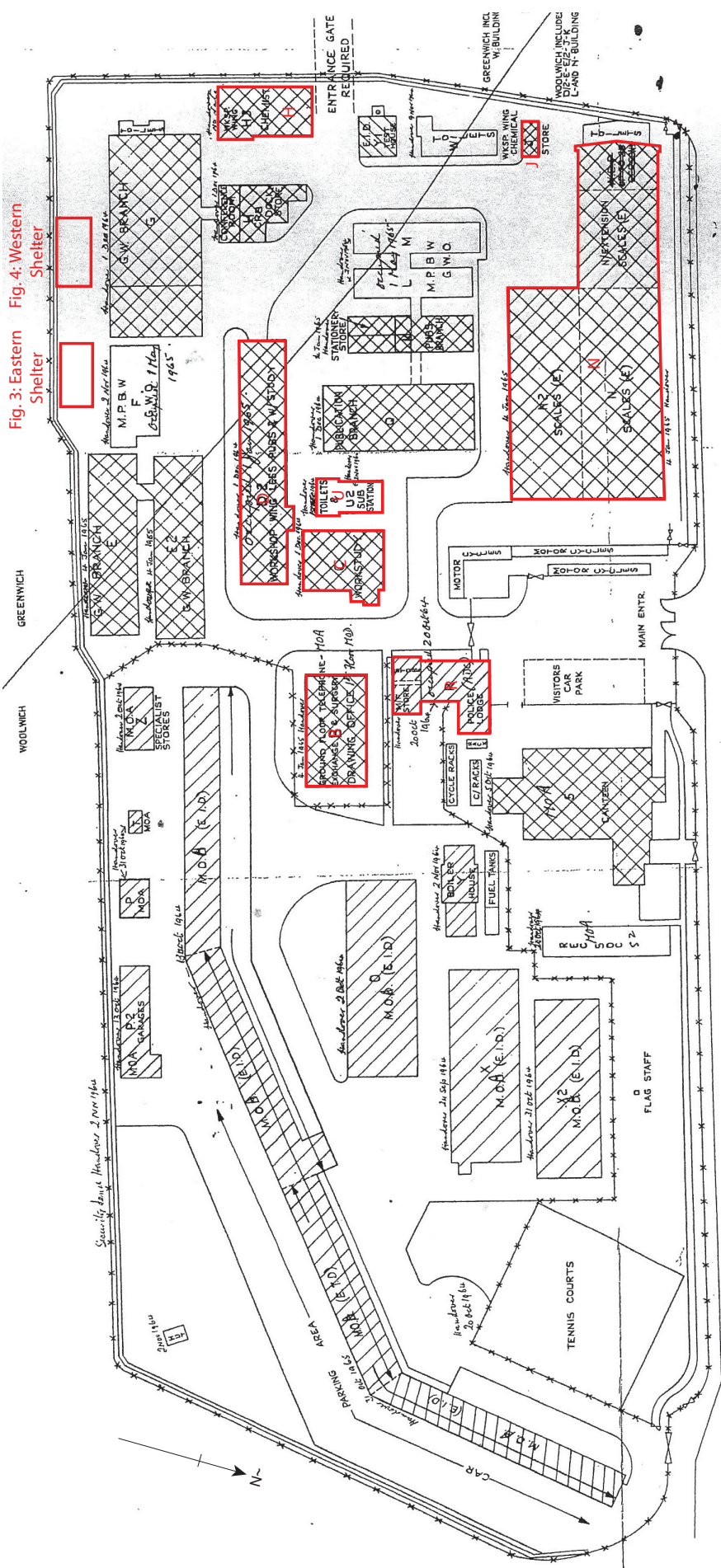


Fig. 3: Eastern Shelter
Fig. 4: Western Shelter

- Buildings Still Standing & Air Raid Shelters
- B = Building 10/17
- C = Building 10/14
- D = Building 10/10
- H = Building 10/2
- J = Building 10/6
- N = Building 10/8
- R = Building 10/15
- U = Building 10/13
- MOA (E.I.D.)
- R.E.M.E. OCCUPATION

Figure 15: 1965 Site Plan

Appendices

Appendix A – Building Record Sheets

Building 10/2

AREA/LOCATION: Ha-Ha Road Site

DATE: 1960-62



ORIGINAL FUNCTION: Chemical research laboratory CURRENT FUNCTION: Store/ Abandoned

CONSTRUCTIONAL TYPE: Brick

DIMENSIONS 19.50m x 10.25m

DOCUMENTARY REFERENCE: 1965 Site Plan Drawing M244

PHOTOGRAPHS: DSC690

RELATIONSHIPS WITH OTHER FEATURES: No

DESCRIPTION:

The building is a single storey building constructed in red brick laid in stretcher bond with a concrete roof supported on iron beams. An air conditioning unit lies towards the north, above the roof level. Doors in the south, west and north lead to internal rooms. A central passage provides access to all rooms, many of which are partitioned with metal and glass screens. Three units of Crittal windows on the east side and one unit on the west side provides light to the former laboratories. A central hipped skylight provides light to the middle of the block.

To the southeast is a separate pair of doors providing access to a plant room. The northeast room contains work benches, gas taps, sinks and a fume cupboard.

Internal floors are concrete. Internal surfaces are painted. The entire building is suffering from gradual failure of the flat roof.

HA-HA SITE, WOOLWICH

Building 10/6

AREA/LOCATION: Ha-Ha Road Site

DATE: 1955



ORIGINAL FUNCTION: Oil and Spirit Store CURRENT FUNCTION: Chemical store/ abandoned

CONSTRUCTIONAL TYPE: Brick DIMENSIONS: 8.05m by 4.02m

DOCUMENTARY EVIDENCE: 1955 site plan SLG/1

PHOTOGRAPHS: DSC4682

RELATIONSHIPS WITH OTHER FEATURES: No

DESCRIPTION:

The building comprises two rooms, built of yellow brick in English bond with splayed brick quoins and regular projecting brick ends in the side walls. The roof slopes down southwards, A beam for 10cwt load projects west through a blocked opening. Internally, brick plinths run along the major room, with wooden shelving also present. Gas-proof lighting and fittings for CO₂ are also present. Regular ventilation bricks are present in each side. The floor of the room is set 0.25m below the ground surface

HA-HA SITE, WOOLWICH

Building 10/8

AREA/LOCATION: Ha-Ha Road Site

DATE: 1955 and 1965



ORIGINAL FUNCTION Offices and Workshops CURRENT FUNCTION: Offices and Workshops/
Abandoned

CONSTRUCTIONAL TYPE: Brick, DIMENSIONS: Maximum 70.3m x 30.2m

DOCUMENTARY EVIDENCE :1955 site plan Drg SLG/1 plus survey, 1965 Site Plan

PHOTOGRAPHS: DSC 4674

RELATIONSHIPS WITH OTHER FEATURES: No

DESCRIPTION:

The building is formed of three units. To the north west is a 12-bay building with a double pitched northlight roof, built of yellow brick in stretcher bond. This measures 38m by 15.1m in plan. The second part is abuts this, a single storey flat-roofed building of yellow brick in English bond, measuring 32.3m by 16m, with a pointed eastern end of red brick housing toilets.. A twin of the first building has been erected south of it, making a row of four roofs. There is an access corridor between the two. Most of this southern section is used as offices. The roof is supported on a girder frame.

The windows are recent replacements of assumed Crittal windows. Some reorganisation of personnel flow is shown by a blocked door in the eastern elevation.

Few fittings that display the function of the building are apparent internally.

HA-HA SITE, WOOLWICH

Building 10/10

AREA/LOCATION: Ha-Ha Road Site

DATE: 1964



ORIGINAL FUNCTION Workshops and offices CURRENT FUNCTION: Office/ Abandoned

CONSTRUCTIONAL TYPE: Brick with girder frame DIMENSIONS: 41.4m x 8.75m

DOCUMENTARY EVIDENCE: 1965 Site Plan states occupied 1965

PHOTOGRAPHS: DSC 4683

RELATIONSHIPS WITH OTHER FEATURES. No

DESCRIPTION:

The building is a two-storey 13-bay structure with a girder frame infilled with brick in English bond. The windows appear to be modern. The roof is flat. There is an entrance in the eastern end, presumably to workshops, and two pedestrian accesses on each side. These lead to a stairwell towards each end of the building. Few fittings remain that show the function of the building.

HA-HA SITE, WOOLWICH

Building 10/12

AREA/LOCATION: Ha-Ha Road Site

DATE: 1990



ORIGINAL FUNCTION: Offices

CURRENT FUNCTION: Offices/ Abandoned

CONSTRUCTIONAL TYPE: lightweight prefabricated DIMENSIONS 36.2m x 19.6m

DOCUMENTARY EVIDENCE: electricity layout plan in archive

PHOTOGRAPHS: DSC 4717

RELATIONSHIPS WITH OTHER FEATURES. See 10/28, building same age.

DESCRIPTION:

The building is prefabricated unit of offices built on breezeblock plinths. It has a flat roof. An entrance in the north side is in the centre, and has ramped access. This is a typical temporary building of 1990s date, used on military and civilian sites, but frequently last decades as a temporary structure.

HA-HA SITE, WOOLWICH

Building 10/13

AREA/LOCATION: Ha-Ha Road Site

DATE: 1960



ORIGINAL FUNCTION: Plant and lavatory

CURRENT FUNCTION: Plant and lavatory

CONSTRUCTIONAL TYPE: Brick

DIMENSIONS: 12.6m x 8.4m

DOCUMENTARY EVIDENCE Shown on 1965 Site Plan

PHOTOGRAPHS: DSC 4784

RELATIONSHIPS WITH OTHER FEATURES Support building to base

DESCRIPTION:

The Building is red brick and contains fire-retardants, Electricity Generators and the power supply to the Ha-Ha site. On the southern end is a small WC. Signage on the door of the fire retardants is by Pyrene Company; their telephone number indicates a pre-1962 date. The Crittal windows are original.

HA-HA SITE, WOOLWICH

Building 10/14

AREA/LOCATION: Ha-Ha Road Site

DATE: 1930-38



ORIGINAL FUNCTION: Battery House

CURRENT FUNCTION: Workshop/ Abandoned

CONSTRUCTIONAL TYPE: Brick

DIMENSIONS 17m by 11.9m

DOCUMENTARY EVIDENCE: 1938 Plan LAS/WCH/017963/5 and DRG M245/3

PHOTOGRAPHS: DSC 4723

RELATIONSHIPS WITH OTHER FEATURES: No

DESCRIPTION:

The building is part one-, part two-storey block oriented north-south with brick sills to modern windows and a low parapet wall at first floor level. Brick columns in the centre of the east and west sides give an almost art-deco look to the structure, whilst the brick quoins with inset courses resemble rustication. The large windows provide a large amount of light.

The upper floor is clad in corrugated galvanised iron, and formerly painted green.

HA-HA SITE, WOOLWICH

Building 10/15

AREA/LOCATION: Ha-Ha Road Site

DATE: 1955 and 1980



ORIGINAL FUNCTION Police buildings CURRENT FUNCTION: Administration Block

CONSTRUCTIONAL TYPE DIMENSIONS

DOCUMENTARY EVIDENCE Plan of 1955 and 1965 Site Plan and DRG M264

PHOTOGRAPHS

RELATIONSHIPS WITH OTHER FEATURES

DESCRIPTION:

The building is a single storey yellow brick building in English bond, with suites of rooms now devoid of signage of function in the most part. The window sills and lintels are concrete, the roof is flat. The windows themselves are modern replacement in original reveals.

Toilets, a kitchen, and other basic facilities remain in the rear rooms, whilst the main reception area retains its desk. The building is of two phases, with a two blocks added to the rear with a covered passage between.

HA-HA SITE, WOOLWICH

Building 10/17

AREA/LOCATION: Ha-Ha Road Site

DATE: 1939



ORIGINAL FUNCTION: Drawing office and Telephone Exchange

CURRENT FUNCTION: Office

CONSTRUCTIONAL TYPE: Brick

DIMENSIONS: 22m x 11m

DOCUMENTARY EVIDENCE 1939 plan MD0660133A and

PHOTOGRAPHS: DSC 4718

RELATIONSHIPS WITH OTHER FEATURES close to 10/14

DESCRIPTION:

The building is a well-proportioned two-storey five-bay brick building painted white with a black foundation register, the windows are modern, in their original brick reveals, although the lintels are concrete. The roof is flat. A central staircase accesses the first floor. The building is stylistically similar to 10/14. Few internal fittings appear to be extant.

HA-HA SITE, WOOLWICH

Building 10/28

AREA/LOCATION: Ha-Ha Road Site

DATE: 1990



ORIGINAL FUNCTION: Offices

CURRENT FUNCTION: Offices

CONSTRUCTIONAL TYPE: Lightweight prefabricated building DIMENSIONS: 47m x 30m

DOCUMENTARY EVIDENCE electricity layout plan in archive

PHOTOGRAPHS: DSC 4684

RELATIONSHIPS WITH OTHER FEATURES: See also 10/12

DESCRIPTION:

The building is prefabricated unit of offices built on breezeblock plinths, slightly irregular in plan, with a flat roof. An entrance in the north side is in the centre, is accessed by steps A second entrance in the north has no steps, showing a slight fall in the topography of the site northwards. This is a typical temporary building of 1990s date, used on military and civilian sites, but frequently last decades as a temporary structure.

HA-HA SITE, WOOLWICH

Appendix B – OASIS Form

OASIS ID: aocarcha1-91520

Project details

Project name Ha Ha site, Woolwich

Short description of the project the two WWII Air Raid Shelters were recorded and ten other buildings dating from 1935-1991 were assessed.

Project dates Start: 10-01-2011 End: 12-01-2011

Previous/future work No / Not known

Any associated project reference codes 30782 - Contracting Unit No.

Type of project Building Recording

Site status None

Current Land use Other 2 - In use as a building

Monument type AIR RAID SHELTER Modern

Methods & techniques 'Photographic Survey','Survey/Recording Of Fabric/Structure'

Prompt Direction from Local Planning Authority - PPS

Project location

Country England

Site location GREATER LONDON GREENWICH WOOLWICH Ha Ha Road site

Postcode SE 18

Study area 1.50 Hectares

Site coordinates TQ 4282 7767 51.4794250471 0.05691924981740 51 28 45 N 000 03 24
E Point

Project creators

Name of Organisation AOC Archaeology

Project brief originator English Heritage/Department of Environment

Project design originator RPS

Project director/manager Melissa Melikian

Project supervisor Les Capon

Type of sponsor/funding body Developer

Project archives

Physical Archive Exists? No

Physical Archive recipient N/A

Digital Archive recipient Museum of London-LAARC

Digital Archive ID NAR 10

Digital Media available 'Images vector','Survey','Text','Images raster / digital photography'

Paper Archive recipient Museum of London-LAARC

Paper Archive ID NAR 10

Paper Media available 'Photograph','Plan','Report','Section','Unpublished Text'

Project bibliography 1

Publication type Grey literature (unpublished document/manuscript)

Title Kings Troop RHA, Woolwich, Ha-Ha Road Site

Author(s)/Editor(s) Capon, L.

Date 2011

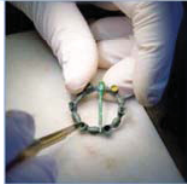
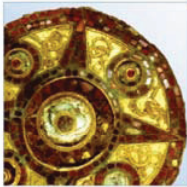
Issuer or publisher AOC

Place of issue or London
publication

Description 49 pages, with 15 illustrations and 35 plates. A4

Entered by les capon (les.capon@aocarchaeology.com)

Entered on 18 January 2011



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