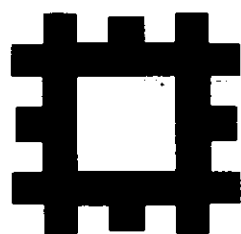


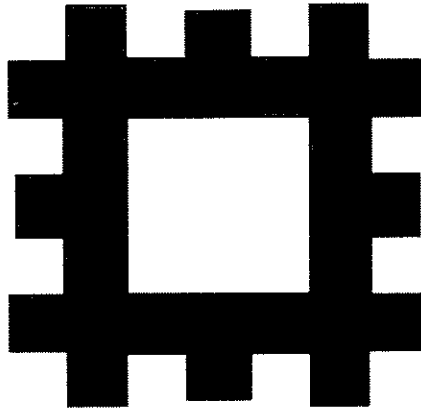
SURVEY REPORT

Grand Shaft Barracks, Western Heights, Dover, Kent

by Paul Pattison &
Moraig Brown



ENGLISH HERITAGE



**GRAND SHAFT BARRACKS
WESTERN HEIGHTS
DOVER, KENT**

NMR INDEX No: TR 34 SW 464

NGR: TR 315 409

Report by: P. Pattison & A. Williams
Survey by: M. Brown, P. Pattison, D. Garrow
Drawings by: M. Brown
Large-format photography by: S. Cole

© Crown Copyright 1999

Cambridge Office: Brooklands, 24 Brooklands Avenue, Cambridge. CB2 2BU
Tel: 01223 324010 **Fax:** 01223 311203 **e-mail:** cambridge@rchme.co.uk

Headquarters: National Monuments Record Centre, Great Western Village, Kemble Drive, Swindon. SN2 2GZ
Tel: 01793 414700 **Fax:** 01793 414707 **e-mail:** info@rchme.gov.uk **Internet:** <http://www.rchme.gov.uk>



A view of Grand Shaft Barracks from the harbour, in the late 19th or early 20th century, showing the austere Napoleonic accommodation blocks on the cliff top (d01798; reproduced by kind permission of Dover Museum)



CONTENTS

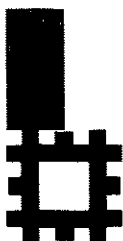
1.	INTRODUCTION	1
2.	SUMMARY	2
3.	LOCATION OF THE SITE	3
4.	GRAND SHAFT BARRACKS	
	Brief History	5
	Description and Interpretation	8
5.	DROP BATTERY	
	Brief History	35
	Description and Interpretation	37
6.	ST MARTIN'S BATTERY	
	Brief History	38
	Description and Interpretation	39
7.	SURVEY and RESEARCH METHODS	45
8.	ACKNOWLEDGEMENTS	45
9.	BIBLIOGRAPHY	46



LIST OF FIGURES

Frontispiece: Grand Shaft Barracks from the Guard House

1.	Location map	3
2.	The site of Grand Shaft Barracks, from the air in 1978	4
3.	Grand Shaft Barracks in 1814	5
4.	Grand Shaft Barracks in 1858	6
5.	Grand Shaft Barracks in 1861	7
6.	Grand Shaft Barracks in 1917	8
7.	Grand Shaft Barracks, from the air in 1945	9
8.	The area of the 1999 survey of the Grand Shaft Barracks; survey plan at 1:1000 scale, showing all visible archaeological features	(in folder)
9.	Grand Shaft Barracks in 1999, survey plan of the core area at 1:500 scale, showing all visible archaeological features	(in folder)
10.	View up the central light well of the Grand Shaft in 1998	11
11.	The top of the Grand Shaft, showing the bowl, the steps and the railings	12
12.	Soldiers' Quarters (Range 'A'): south-eastern elevation in 1860	14
13.	Officers' Quarters (Range 'B'): south-eastern elevation in 1860	15
14.	The Stables: south-eastern and south-western elevations in 1860	16
15.	Soldier's Quarters (Range 'B'): south-eastern elevation in 1865	18
16.	Staff Sergeants' Quarters: south-eastern elevation in 1865	20
17.	Field Officers' Quarters: south-eastern elevation in 1860	21
18.	The Gymnasium: in 1871	22
19.	Canteen and Regimental Institute: north-eastern elevation in 1903	25
20.	Barrack Stores and Barrack Master's Quarters: north-eastern elevation in 1856	27
21.	The Guard House: north-eastern elevation in 1861	28
22a.	Privvies, Urinals and Magazine: north-eastern elevation and section in 1861	28
22b.	The Guard House Privvies and Magazine in 1999	29
23.	The Guard House: Privvies in 1999	30



24.	The Gardens associated with the Commissioned Officers' Quarters and the Clerk of Works Quarters in 1889	31
25.	Married Soldiers' Quarters: north-eastern elevation in 1869	34
26.	Drop Battery in 1881	35
27.	Drop Battery in 1999; plan showing all visible archaeological features at 1:500 scale	36
28.	St Martin's Battery in 1877	40
29.	St Martin's Battery in 1999; plan of the battery and surrounding area showing all visible archaeological features, at 1:500 scale	(in folder)
30.	St Martin's Battery; simplified plan of the battery in 1999	41
31.	St Martin's Battery: gunhouse, built in 1940, for 6-inch BL gun	42

ABBREVIATIONS

AA	anti-aircraft
BC	battery command
BL	breech-loader
BOP	battery observation post
DRF	depression range finder
LMG	light machine gun
MTB	motor torpedo boat
NCO	non-commissioned officer
OD	Ordnance datum
OS	Ordnance Survey
RE	Royal Engineers
RBL	rifled breech loader
RML	rifled muzzle loader
RSJ	reinforced steel joist
SB	smooth bore
WC	water closet



1. INTRODUCTION

In June 1999, Field Archaeologists from English Heritage (Brooklands, Cambridge Office) surveyed and analysed the ruined military structures and earthworks associated with the former Grand Shaft Barracks, St Martin's Battery and part of Drop Battery, on the Western Heights, Dover (NMR Number TR 34 SW 464; SAM Number Kent 187). Dover District Council, utilising funds made available from the South-eastern Regional Development Board, commissioned this survey. Its purpose is to provide archaeological data in advance of proposed improvements to the site of the barracks and batteries. These works may include selected tree felling and scrub clearance, consolidation of the historic features and fence building as part of a more positive management plan for the site. In the first instance, the survey is needed to inform an application for Scheduled Ancient Monument consent.

The principal aims of the survey are as follows:

- a) To record and interpret the surface remains;
- b) To inform and guide the management plan for the site.

The field survey covered the whole area of the Grand Shaft Barracks, St Martin's Battery and part of the area of Drop Battery. The work had to be undertaken in the early summer, when vegetation cover was dense, so that some parts of the site were inaccessible. Indeed there are some small areas where the vegetation cover is so thick that, even in winter conditions, survey would not be possible. This is particularly the case for Drop Battery.

Ground photographs were taken of most of the upstanding structures, though in several cases dense vegetation made this task pointless.

The following report is essentially a description and interpretation of the visible remains, incorporating documentary research which has been targeted to establish the general context of the site and to interpret features recorded in the field. It is by no means intended to be a full account of the development of the barracks and the batteries.



2. SUMMARY

This report deals exclusively with the visible remains and inferred locations of features associated with the 19th and 20th-century Grand Shaft Barracks, Drop Battery and St Martin's Battery. It does not consider the pre-Napoleonic archaeology of the site, which is buried archaeology, on the understanding that the proposed improvements do not involve significant ground disturbance.

The archaeological survey and investigation was able to cover about 90% of the study area, the remaining ground being under thick vegetation cover. As a result of this survey, in conjunction with cartographic research, it is clear that the framework of the site is intact and the remains of or sites of most barrack buildings were accurately established. The roads, paths and flights of steps that connected them also survive. The principal remains are a series of prominent scarps, which divide the site into terraces on which the buildings formerly stood. However, there are some scarps that were formed during demolition by the removal of axial walls *inside* buildings – notably where buildings had half basements. The terraces were revetted with vertical or slightly battered walls, many of which survive in reasonable condition. Although a few buildings survive to roof level - The Guard House Privvies and adjacent Magazine, the Magazines at Drop Battery, the whole of St Martin's Battery and the Grand Shaft – most are reduced to short lengths of low walls protruding from the earthwork platforms that indicate their locations. There are occasional remains of concrete floors on these platforms, at basement or ground floor level, which means that archaeological deposits associated with the life of the barracks – or their construction - will be intact. All the walls are of brick construction and are largely primary in their particular date of construction, whether Napoleonic, mid 19th century or later, though in some cases there are clear alterations or patching.

The surface archaeology of the site is becoming progressively obscured by the spread of scrub and woodland. During the 19th century, there was little tree cover on this site, with the possible exception of gardens on the south-western slope of the combe. Air photographs, ranging in date from 1942 to the present day, chart the gradual spread of scrub and woodland cover, which is trending from south-west to north-east (full list available from the NMR).

3. LOCATION OF THE SITE

The Western Heights lie on the south-western flank of the port and town of Dover (Fig 1), and at the north-eastern end of a long ridge, which extends towards Folkestone. This ridge, composed of Middle and Upper Chalk capped in places by Clay-with-flints, commands extensive views in all directions (BGS 1974; 1977). It is a prominent topographic feature that reaches a height of 125m (410ft) above OD, with a narrow flat top and steep sides which, in places, turn to cliffs.

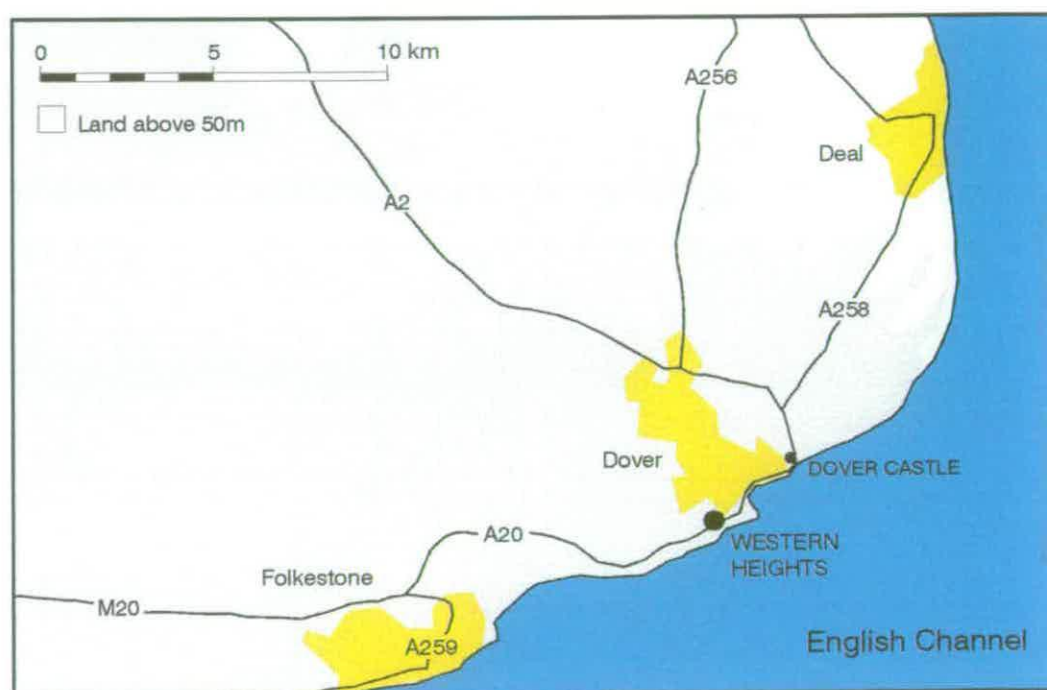


Figure 1
Location map

The Western Heights fortifications are concentrated at the north-eastern end of the ridge. Work on their construction began towards the end of the 18th century and rapidly developed during the Napoleonic Wars, with the principal aim of preventing a flanking assault on Dover from the south-west along the ridge, or along the Folkestone Road. The defences also contained batteries of coast artillery to engage enemy shipping. The defences stretch for 1 mile (1.6km) along the top and sides of the ridge, from the steep north-eastern end where *Drop Redoubt* overlooks the town and port, to a narrowing of the ridge above Aycliff occupied by *Citadel Battery*. An overview of their development is provided by Coad and Lewis (1982), while the Royal Commission on the Historical Monuments of England (now part of a new English Heritage) are currently involved in a full field survey and investigation of the surviving remains, to be completed in 2000.



The northern slope of the ridge is the more even and along it was constructed a continuous defensive line, while the southern face is more sinuous and broken, with stretches of vertical cliff providing natural defences interspersed with steep slopes and natural combs. One of these combs, a pronounced northward re-entrant with a high cliff at its lower end, was utilised by the Georgian military engineers as a convenient location for the *Grand Shaft Barracks* (Fig 2). Nearby, prominent bluffs were utilised in the Victorian era for coast artillery at *Drop Battery* and *St Martin's Battery*.



Figure 2
The site of
*Grand Shaft
Barracks* (lower
centre) from the
air in 1978: note
the survival of
the *Gymnasium*
and *Troop Stable*
to the right of
Drop Redoubt
(NMR AP:
TR/3140/1/360)

4. GRAND SHAFT BARRACKS (or WESTERN HEIGHTS BARRACKS)

BRIEF HISTORY

Authority was given to build the Grand Shaft Barracks by the Barracks Department in 1804, at around the same time that the Board of Ordnance was constructing the Western Heights fortifications. The Department's intention was to provide accommodation for 700 men in addition to the 800 being quartered in the Western Heights works by the Board of Ordnance, effectively adding a complete infantry regiment to defend the Heights, the docks and the town. The barracks were completed rapidly, in 1805, although work continued on the various fortifications on the Western Heights until 1816 (Fig 3; PRO/WO/44/572 note on map; Coad and Lewis 1982, 163; 177).

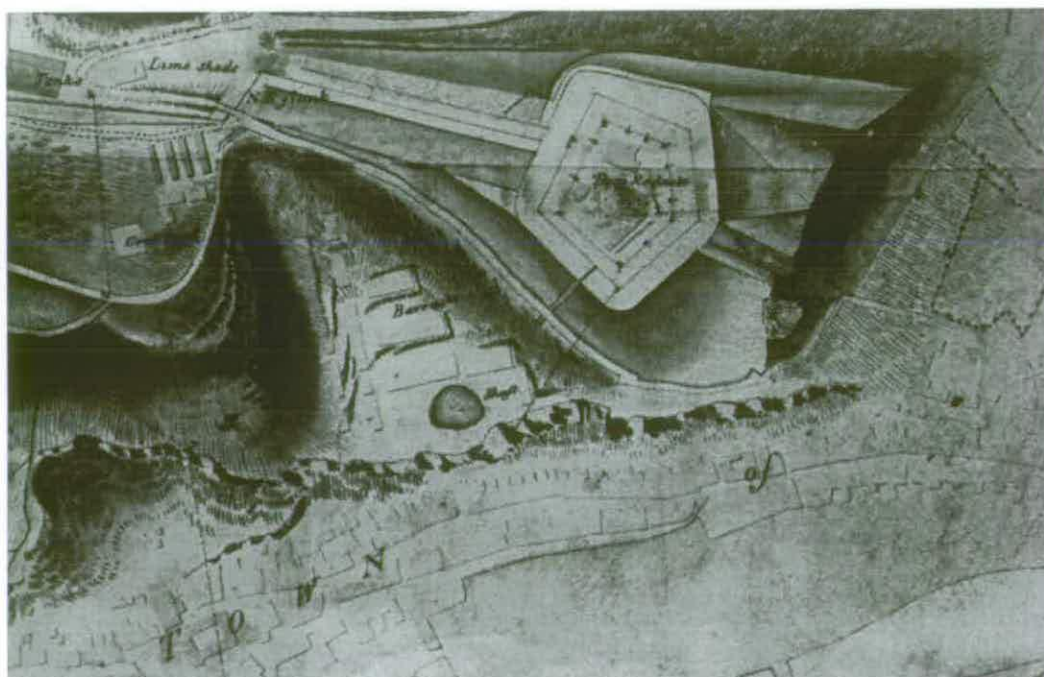


Figure 3
Grand Shaft
Barracks in 1814
(MR/1346;
reproduced by
kind permission
of the Public
Record Office)

The site chosen for the barracks was in a combe directly overlooking the harbour, with cliffs preventing direct access between the two. The commanding RE officer, Brigadier Twiss, brought attention to this problem in a letter to the Board of Ordnance written in the autumn of 1804. He pointed out that the roads and footpaths across the Heights were dangerous in wet weather and that they were indirect, slowing down the rate of deployment of troops to and from the town. He proposed an innovative solution comprising a vertical shaft containing a staircase, occasioned by his observation that *"the new barracks are little more than 300yds horizontally from the sea..... and about 180ft above the high-water mark"*. His



idea came to fruition between March 1805 and 1807 with the construction of the Grand Shaft (Coad and Lewis 1982, 163-4).

In the second half of the 19th century, various buildings were added around the original core. These buildings, including a schoolroom, a gymnasium and married soldiers' quarters, were located either higher up the slopes of the combe or on a separate site on the western side of South Military Road. This new work was the result of the Barracks and Hospitals Improvement Commission, appointed by Palmerston in 1857 as a result of pressure from a growing group of reformers. Their report of 1858 for Western Heights Barracks (as Grand Shaft Barracks were known at that time), noted that they were "*situated in an open, airy and lofty position removed from the civil population of Dover*", but it also saw the need for additional buildings and sanitary improvements; some 1,071 men were accommodated in 51 rooms (PRO/WO/33/581). The work of the Commission resulted in a standing committee, the Army Sanitary Commission, which was to oversee improvements in barrack design and conditions all over the nation (Douet 1998, 199).

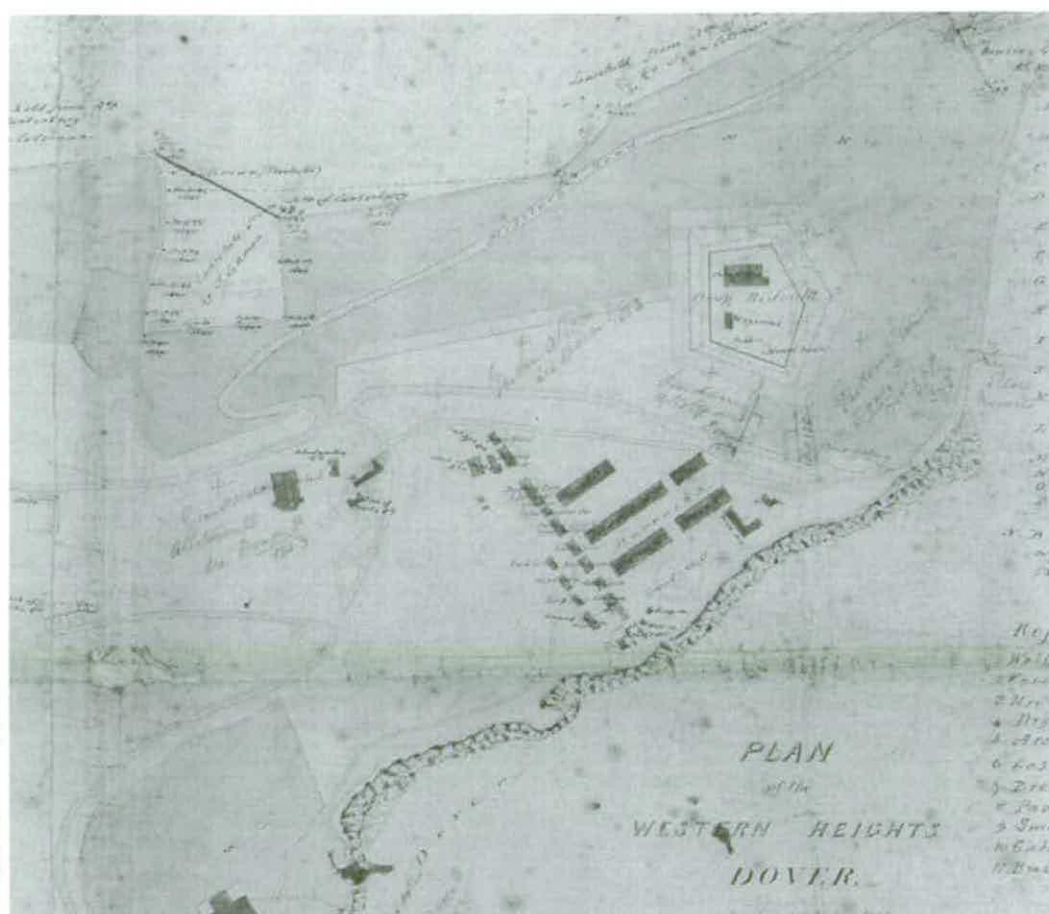


Figure 4
Grand Shaft
Barracks in 1858
(extract from
WORK/43/1598;
reproduced by kind
permission of the
Public Record
Office)



Many of the buildings of Grand Shaft Barracks are recorded in detail on a set of plans, mainly of the 1860s and 1870s, which were probably prepared to accompany the alterations and new building resulting from the recommendations of the Commission (see the Bibliography for a list of those consulted). Of particular value are two plans, the first dated 1858, the other at considerably larger scale and dated 1861, which show all the original Napoleonic buildings and label their functions (Figs 4 and 5). There are earlier plans but they are less detailed, because of limitations in the scale or purpose of survey, so they do not depict all of the buildings shown on the 1858 and 1861 plans (eg PRO/MR/1346, dated 1814; Batchellor, dated 1844; PRO/WO/44/572, dated 1854). These earlier plans consistently omit the Staff Sergeants' Quarters, which is unusual because its design is identical to the other Napoleonic accommodation blocks.

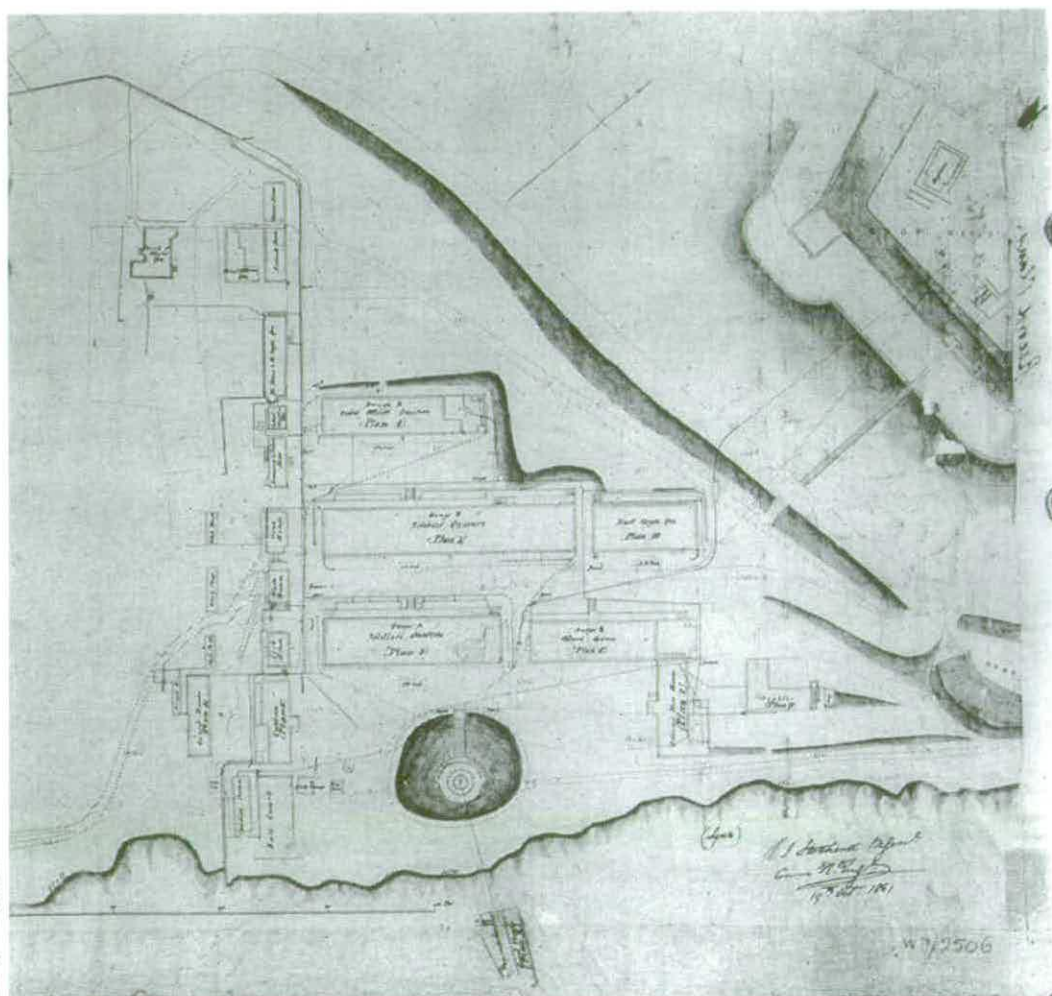


Figure 5
Grand Shaft
Barracks in 1861
(extract from
WD/2506)



The barracks reached their maximum extent in the second half of the 19th century. There followed numerous minor alterations, additions and changing functions to buildings, but there was no new major construction. Several temporary buildings were erected during the Second World War, some replacing structures demolished by enemy action. In addition, a large shelter was built underground on the south-western part of the barracks site and its entrance can be found in the woodland there.



Figure 6
Soldiers' Quarters
(Range B), shortly
before demolition.
The size and sombre
nature of the
barracks is apparent
(d08611; reproduced
by kind permission of
Dover Museum)

The barracks were decommissioned in 1960 and most of the buildings levelled in 1965, although two buildings were left standing: the Gymnasium survived in 1979 but was removed by 1983, while the Troop Stable/Transport Shed stood until 1997 (Fig 2; NMR APs: MAL/83001/37-9).

DESCRIPTION and INTERPRETATION

In the following account, reference should be made to the main survey plans, ie:

Fig 8 for the whole survey area (in folder)

Fig 9 for Grand Shaft Barracks (in folder)

The construction of the barracks required major modifications to the steep slopes of the combe. The various buildings were placed on a series of massive terraces, cut from and built over the chalk rock of the hill, to provide level and solid platforms. These terraces are a

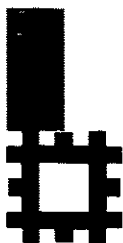


prominent feature today and it appears that demolition of the buildings has not, for the most part, severely damaged the basic profile of the site. However, it is important to realise that several of the large blocks were built on two levels, now represented by two terraces; it would be easy to think that each terrace contained a single building. Several terraces still stand to heights in excess of 2.0m; the scarp defining the edge of Drop Redoubt Road is, in places, some 3.5m.



Figure 7
Grand Shaft
Barracks from the
air in 1945 (NMR
AP:
106G/UK/610/Part
IV/6327)

The original design of the barracks was simple: the major part of the accommodation was provided in three parallel ranges on terraces facing south-east, with the Parade Ground and the Grand Shaft below them: beyond the shaft was the cliff edge. Drop Redoubt Road



formed the northern flank and linked with the South Military Road while the main communication between the terraces was by a broad flight of steps on their south-western side. On the steep south-western side of the combe, the ground was similarly terraced, but at right angles to the accommodation ranges, and on these were placed the ancillary buildings: cookhouses, stores, workshops and recreational facilities. Access to the whole site was via Drop Redoubt Road and by a track from Archcliffe Fort.

THE GRAND SHAFT and THE PARADE GROUND

The parade ground was the functional and ceremonial centre of the entire barracks complex, where drill and close manoeuvres were practised and where rewards were given and punishment meted out. The construction of the Grand Shaft, after the basic barracks plan had been established, severely compromised the utility of the parade ground; a fact emphasised by the location of the shaft right at its centre. Such an awkward arrangement is unusual for the era, when emphasis was placed on the symmetrical disposition of the soldiers' and officers' accommodation around a central parade ground. However, with an invasion expected, there was a pressing need to enable rapid troop deployment from the barracks into the town and docks, which would otherwise have been along a tortuous route. Twiss himself remarked that '(although) *the new barracks (were) little more than 300 yards horizontally from the sea.... on horseback the distance (was) nearly a mile and a half* (Coad and Lewis 1982, 163-4).

Today the Parade Ground is unrecognisable as such: it is now a car parking area with a roughly made surface.

The Grand Shaft itself is 140ft (42.67m) deep, driven vertically through the chalk cliff and lined with Common-bond brickwork (Fig 10). In the centre of the shaft is a hollow column, in Flemish bond, which serves to support three intertwined spiral staircases, while also acting as a drain and a light well. The three staircases all have stone treads running between the shaft wall and the central column. Four borrowed-lights with semicircular heads, stone lintels and wrought-iron grilles are provided on each staircase. The exact spacing of the lights varies slightly with the geometry of each staircase but the interval between each one is roughly thirty steps. Each borrowed light has an accompanying small landing. The stone sills of the lights are canted into the stairs probably to increase the available light. At the bottom of the shaft, there are low semicircular arches at the rear of each stair: scars in the jambs suggest the position of doors, possibly to small cupboards that probably contained tools and maintenance materials. The shaft leads directly into vaulted gallery, at the end of which was a guard-room and main gate to the town (WD/2352; WD/2354).



Figure 10
*A view up the central
lightwell of the
Grand Shaft (NMR)*

The top of the Grand Shaft is about 10m (33ft) below the level of the parade ground in a bowl-like hollow excavated in the chalk (Fig 11). A flight of stone steps, descending between brick retaining walls with stone copings, bifurcates at a small landing approximately half way down the bowl. The two flights then descend against the battered Flemish-bond retaining wall of the lower part of the bowl, emerging on opposite sides of a stone paved area around the shaft top. All the stairs have square-section, wrought-iron handrails set in stone copings while the tops of both the shaft and the central column have wrought-iron spear top



railings with urn and spear finials on the posts for the gates to the three staircases. The style of the present railings is Victorian.

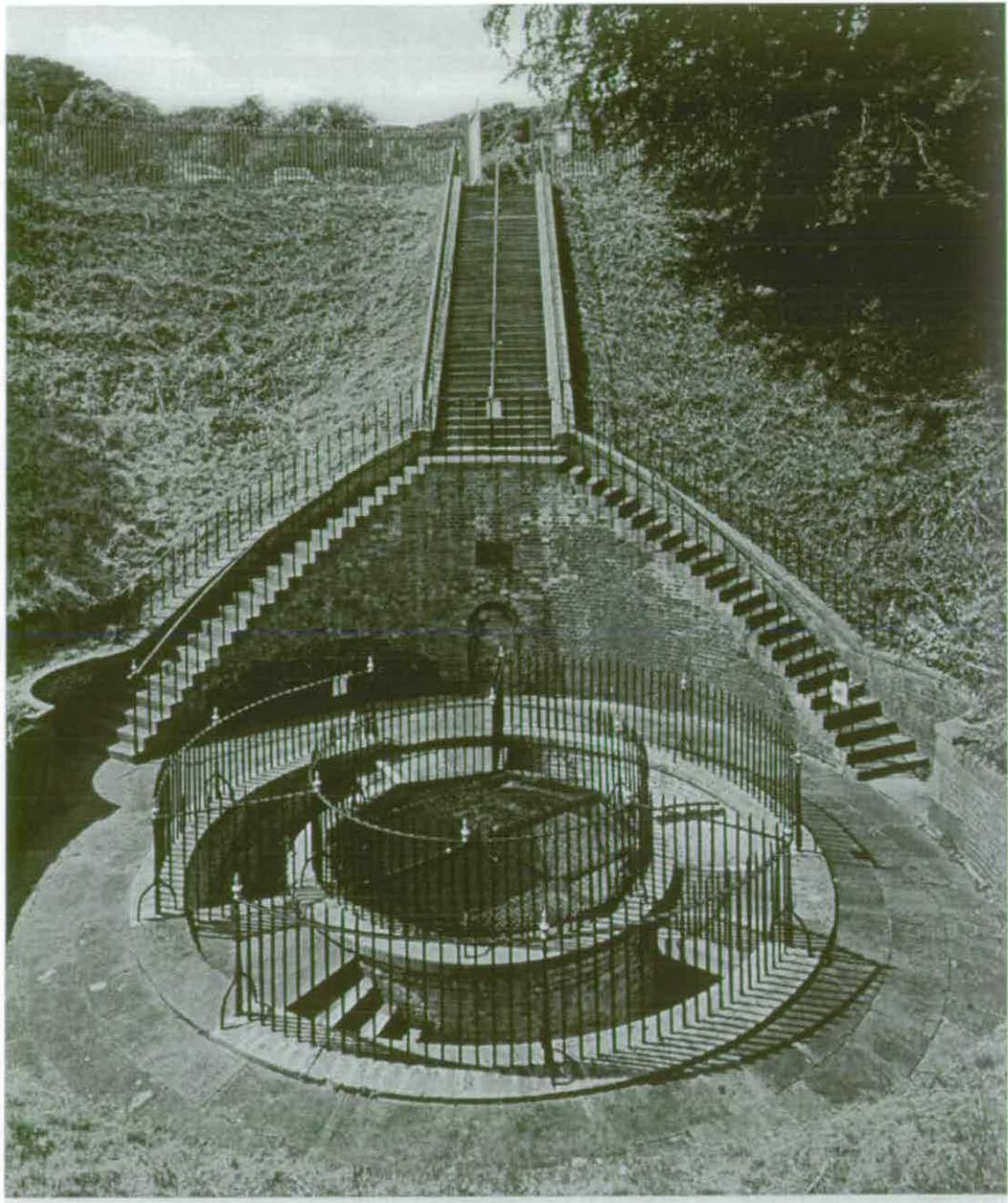


Figure 11
The top of the
Grand Shaft,
showing the bowl,
the steps and the
railings (NMR)

Tradition and anecdotal evidence have long held that the three staircases were provided for separate ranks ie respectively for *Officers and their ladies*, *Sergeants and their wives* and *Soldiers and their women*. This is reinforced by a map of 1865, which labels the staircases *Officers*, *Sergeants* and *Soldiers* (WD/a, 1881). This division conforms to the Queen's Regulations of this period, which expressly forbid fraternisation off-duty between Officers,



Sergeants and other ranks. The Georgian army, however, was not so class-conscious and the shaft was clearly built originally to provide as quick a descent as possible for a large number of fully equipped infantry. Well-drilled soldiers could descend the stair from the parade ground, separated into two groups initially by a central handrail, then down the two separate stairs to opposite points at the top of the shaft. It would then be a simple matter to further divide, making for one of the three stairs of the shaft itself.

No doors or gates appear to have been provided at the head of the three staircases, possibly to avoid hindering descending troops. However, at the foot of the staircases, semicircular arches with pintles in their jambs provide evidence for the mounting of gates or doors to close off the stairs. Two stairs, and the bottom of the central column, can also be closed off from the gallery by a gate hung on pintle hinges underneath a wrought-iron barred fanlight in the semicircular arched entrance to the column. This arrangement might pre-date the allocation of the stairs to different ranks and could suggest that one stair was used for everyday traffic with the other two kept for the emergency movement of troops. Scars in the jambs of the semicircular arched entrance to the gallery suggest that a pair of gates, probably beneath a fanlight, was installed in this position. These gates closed inwards and could have been closed behind troops withdrawing up the staircase.

As the top of the shaft was open to the elements good drainage was obviously important. The shaft also provided the drainage for the Grand Shaft Barracks with unpleasant consequences, for in 1858, the Barracks and Hospitals Improvement Commission noted that *"the drainage from the Western Heights Barracks is brought down to the town sewers by a vertical pipe to the shaft and stairs. When the privies are flushed the force of the water down the pipe forces the sewer gas through traps into houses and the shaft. A large tank is required at the bottom of the shaft with a foul air pipe"* (PRO/WO/33/581).

The gallery and guard house to the town are not described here, as both fall outside the scope of the present survey.

THE ACCOMMODATION RANGES

The accommodation blocks were arranged around and overlooking the parade ground, as far as was possible conforming to the accepted plan of the period. All of these were built as part of the original Napoleonic design and comprised large austere blocks of double-pile plan. Construction was of brick, laid to English-bond with flat arch window heads, deep sashes and a half-hipped slate roof concealing a central valley. The buildings described below were all part of the Napoleonic barracks, except where stated otherwise, starting from the Parade Ground and proceeding up the combe slope. The functions of each building are taken from the 1858 and 1861 plans, except where stated otherwise.

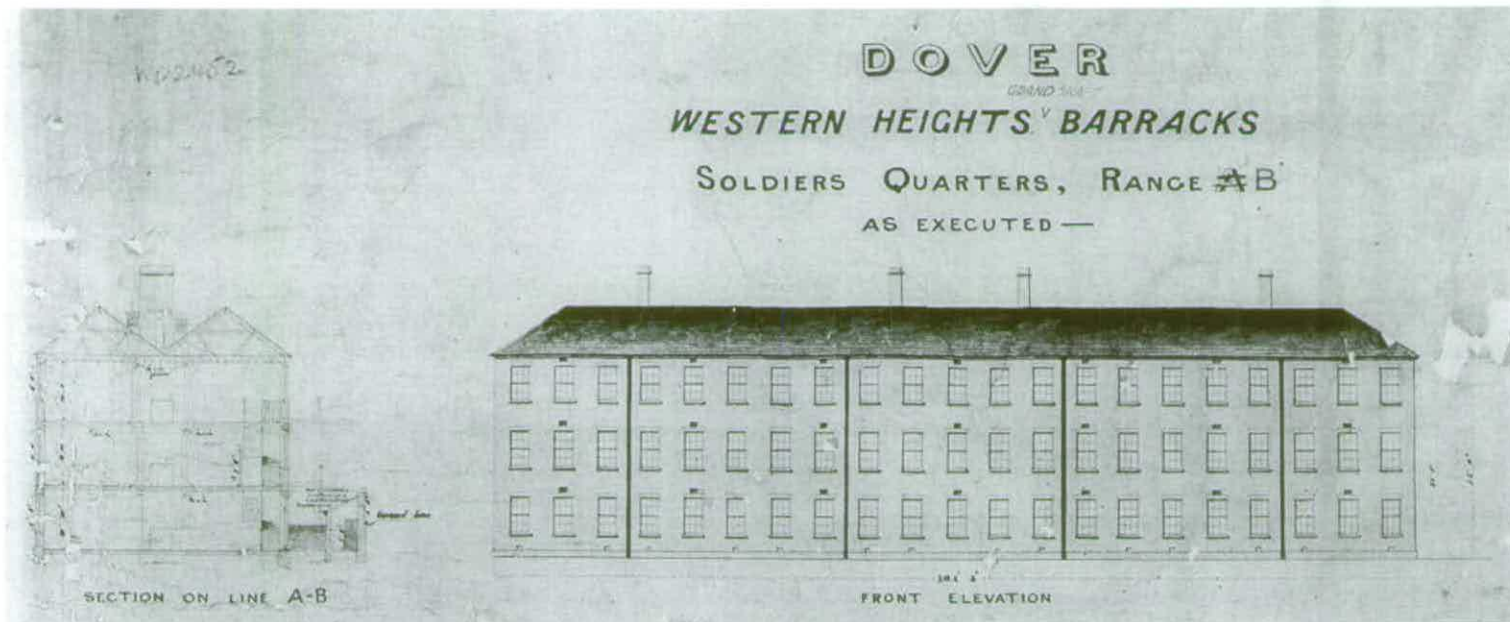


Figure 12 Soldiers' Quarters (Range A): south-eastern elevation in 1860 (extract from WD/2452)



Soldiers' Quarters Range A

This was the smaller of the two soldiers' barracks, providing accommodation for 336 men and 21 NCOs in a 21 by 2 fenestrated bay block of three storeys (Fig 12). The block was divided into 'flats' of three bays, each with its own door in the rear of the building. Opposite each door, across a paved alley, were the Ablution Rooms and Urinals contained in a single-storey range parallel to the main block. Each 'flat' was self-contained and had its own wooden staircase against the rear wall.

The site lies under the present car park and is very smoothed, with little visible on the surface. A shallow scarp, up to 1.0m high, betrays the underlying presence of the north-western and, possibly, the north-eastern walls.

Officers' Quarters Range B

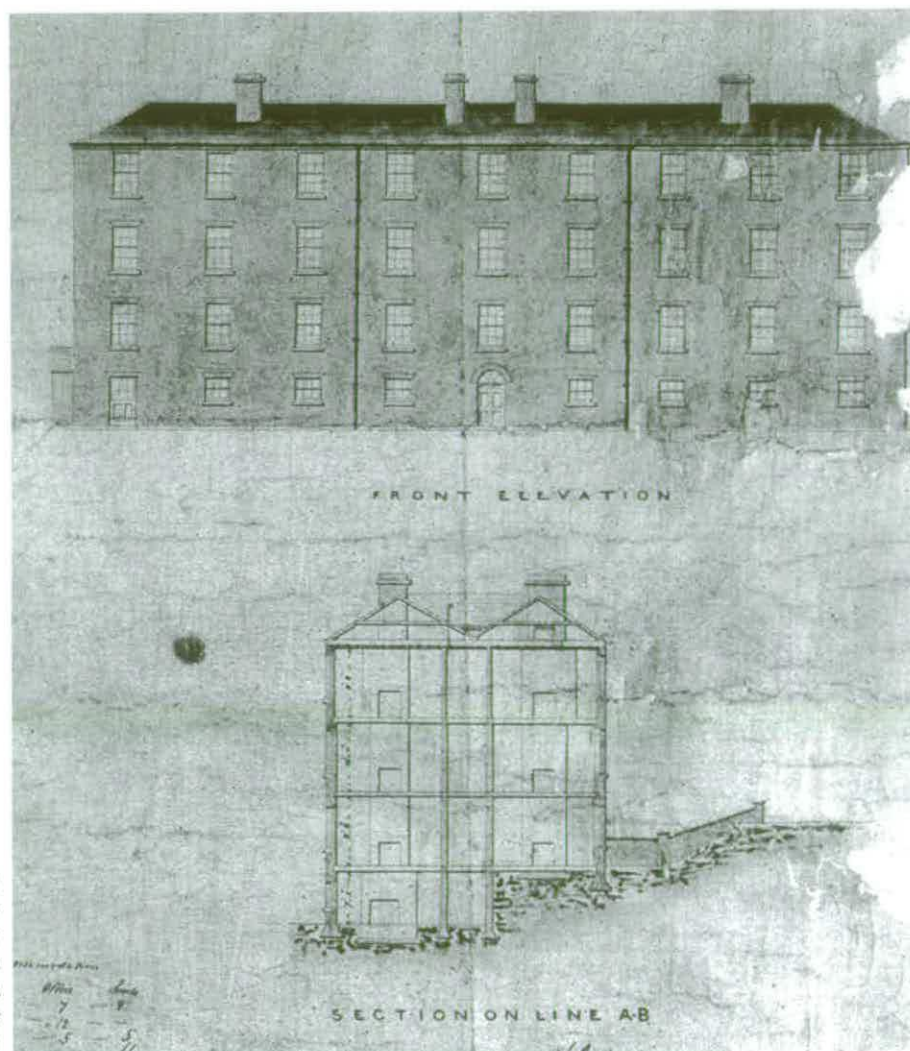


Figure 13
Officers' Quarters
(Range B):
south-eastern
elevation and section
in 1860 (extract
from WD/2446)



The Officers' Quarters was a structure of 9 by 2 fenestrated bays, in three storeys and a half basement (Fig 13). It was sub-divided into heated one-room quarters reached from axial corridors running from a central lobby and stair well. Access was gained from the ground floor in the rear elevation and via the basement in the front elevation. Judging by other surviving examples, this appears to be a standard plan for the period (eg Maidstone). A small enclosed yard was attached to the eastern end.

Today, only a scarp, 1.2m high, marks the change in level between the half basement on the south-east and the ground floor on the north-west. Additionally, a low bank, which presently flanks a modern path, may conceal part of the south-western end wall. A flight of steps survives on the northern side of what was the yard and gave access to the alley alongside the rear elevation. The site of the eastern corner of the building, near its junction with the Officers' Mess, is a mass of confused mounds and hollows, indicating considerable disturbance.

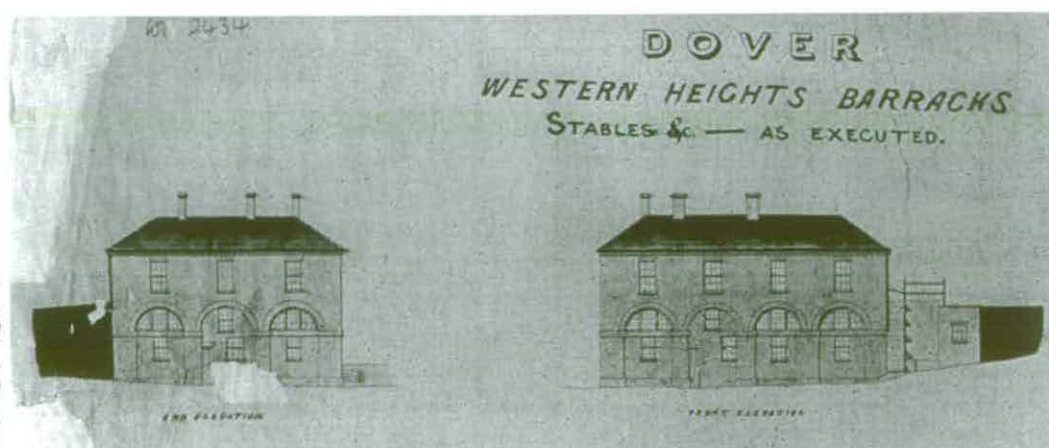
The Officers' Mess

This was set at a right angle to the Officers' Quarters Range B, adjoining the south side of the yard, and defined the north-eastern end of the parade ground. The site of this building is now divided in two by a trackway, but the northern half is clearly defined by a rubble-filled depression. A short section of brick walling, 0.8m high, is part of the north-eastern ground floor wall. Part of a cross-axial partition wall is visible in the track surface.

The Stables

The stables for the officers' chargers were placed in an L-shaped block to the east of the Officers' Mess. The 1860 plan shows a 3 by 1 bay, three-storey block with the stalls and the forage loft above, accommodated in an arcade of semicircular arches two storeys high (Fig 14). The third storey, conventionally fenestrated, accommodated a guardroom. Loose

Figure 14
The Stables:
south-eastern and
south-western
elevations in 1860
(extract from
WD/2434)





boxes and a further forage store were placed in a similar 2 by 1 bay wing making up the L. An enclosed yard was formed in angle of the two wings.

Nothing was certainly observed of this building, except perhaps a patch of stone setts in the surface of the present track, which originally may have been outside the south-eastern elevation. A concrete floor can be seen outside the site of the south-western elevation.

Soldiers' Quarters Range B

This huge structure provided accommodation for 480 men and 40 NCOs in a 35 by 2 fenestrated bay block of three storeys and a basement. The block was divided into 'flats' of three bays, each with its own door in the rear of the building (Fig 15). Opposite each door were the Cookhouses, Privies and Ablutions contained in a single-storey range running parallel to the main block. Each 'flat' was self-contained and had its own wooden staircase against the rear wall. This occasioned one of the two major criticisms of the barracks during the Barracks and Hospitals Improvement Commission visit in 1858, which noted that the location of the staircases cut off a great deal of the light from the windows (the other, obvious, criticism was the co-location of the Privies and Cookhouse). The Commission also noted that all the barracks ceilings were lined with zinc, to what end is not clear. The basement contained stores and offices, with entrances in the front elevation.

Of the south-western two-thirds of this building there is little visible: a prominent but graded scarp, 1.8m high, marks the north-western edge of the terrace on which the block stood but is, in part, the product of cutting away the terrace revetment wall. Parallel and to the south-east is a second scarp on the line of the principal internal axial wall and probably results from its removal. Part of the south-western end wall to the basement, in yellow stock brick laid to English bond, is still visible.

However, the north-eastern third has fared better, with the survival of most of the basement level which, in 1865, was occupied by three rooms; a large Bath Room on the north-east, and two Store Rooms. There are remains of the north-western, north-eastern and south-western walls of this level, mainly in yellow stock brick laid to English bond and formerly rendered. Although most of the render has fallen off, the pick marks in the brickwork, made to give the render a good hold, are visible. The basement level is reached down a flight of stone steps which originally led to a corridor; the steps have been given a concrete screed and iron anti-slip bars along the leading edges; a concrete drainage channel has been let into the steps on the wall side. The north-western wall is a revetment for the terrace and the steps originally led into a corridor. Only a stub of the other wall, 0.58m wide, projects from the north-eastern wall, preserving a short section of the corridor, in the end of which is a blind recess at floor level. The recess is 0.77m wide and 1.62m deep with a shallow brick relieving arch augmented by an inserted RSJ. The recess is clearly pencilled onto the 1865 plan and is

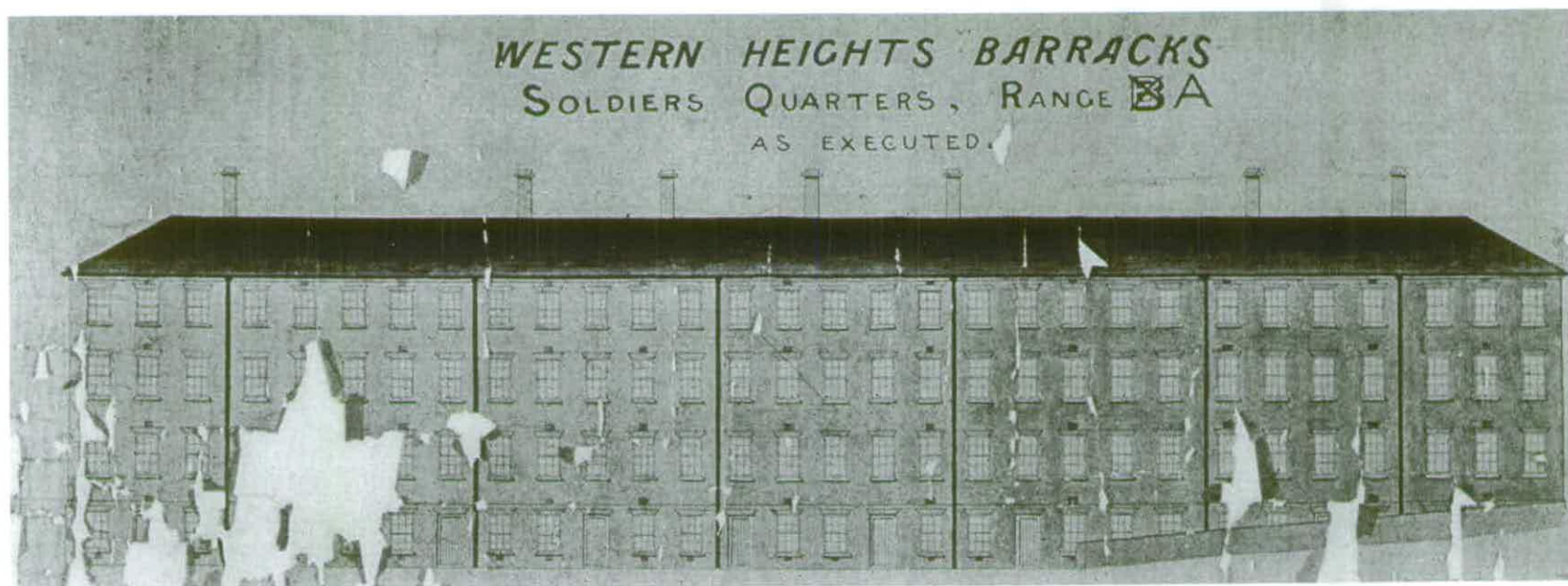
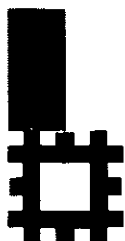


Figure 15 Soldiers' Quarters (Range B): south-eastern elevation in 1865 (extract from WD/2453)



therefore later. The north-eastern wall is the end wall of the whole block; it contains a single recess, 0.76m high by 0.66m wide and 0.47m deep, with a sandstone lintel: it was probably for a lamp. The south-western wall is an internal partition and survives up to 2.5m high: remains of render stops conspicuously two courses from the top and there is a crudely inserted horizontal slot, 0.93m wide and 0.07m high, at high level.

Above and alongside the north-western wall is another corridor 2.04m wide, at ground floor level, defined by a brick wall 1.95m tall. This corridor formerly provided access to the Ablution rooms behind the main block. At its north-eastern end, a flight of steps leads up onto a concrete surface formerly separating this block and the Staff Sergeant Quarters to the north-east. The steps are in stone, with lead plugs for iron railings at the edges, but they have been repaired with concrete and cream-coloured non-slip tiles (by Doulton and Co, Lambeth, London).

Staff Sergeants' Quarters

This was an 8 by 2 bay building of two storeys and a half basement (Fig 16). It was internally divided into single, heated rooms, with the three bays at the north-eastern end occupied by a Library (on the first floor), Mess (on the ground floor) and Kitchen (in the basement). To the rear was a range of Privvies. The building still stood in June 1942 but by August 1945, had been demolished, possibly by enemy action, and replaced by two parallel single-storey structures – probably Nissen huts (NMR APs: HLA/574/64-5; 106G/UK/610/6360-1).

The area of this building is divided by a strong scarp, 2.0m high, in part reflecting the stepped double-pile plan of the original structure, with the half basement on the lower level. However, the step was probably accentuated by the construction of the two Second World War buildings, and a large concrete floor, 48.0m by 12.0m, belonging to one of them, takes up most of the lower level.

On the upper level is a recessed section of the north-western terrace revetment wall, 2.32m high, and its curved corner into the north-eastern wall, standing 2.73m high. The revetment wall has three vertical render strips, each 0.4m wide, marking the former positions of partitions, as it housed Privvies. Beyond the western strip are three holes cut in the brickwork, one above another and each 0.35m tall by 0.25m wide. There is no trace of the Second World War building.

Meat Store

A small rectangular building with a verandah, constructed between 1861 and 1881 on a platform north-east of the Staff Sergeants' Quarters (WD/2506; WD/a, 1881). It was also

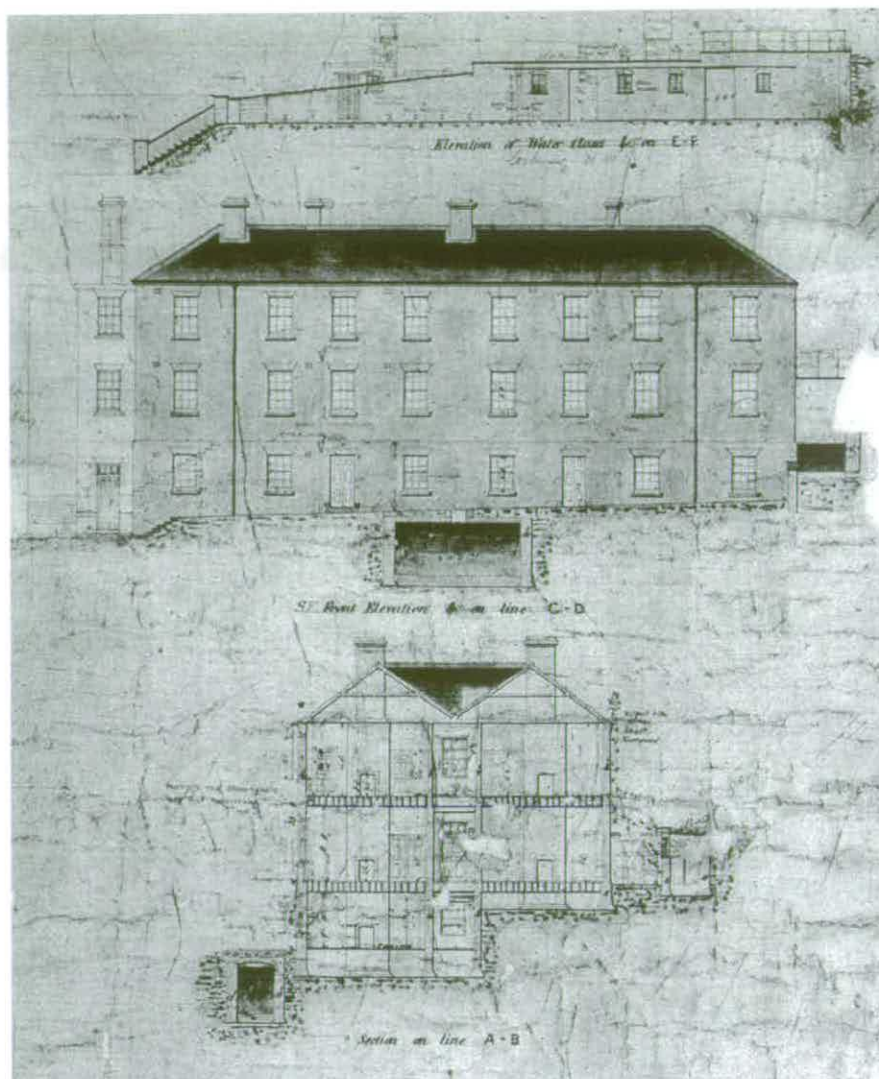


Figure 16
Staff Sergeants'
Quarters:
south-eastern
elevation and
sections in 1865
(extract from
WD/2449)

demolished during the Second World War. Only the platform is visible, reached by two flights of concrete steps, one with brick flanking walls.

Field Officers' Quarters, Range A

The Field Officers' Quarters occupied the final and highest level of terracing in the original Napoleonic design. This building was virtually identical to the Officers' Quarters Range B although some rooms were combined into suites of three or four, probably for higher ranking occupants. There was a small enclosed yard on the north-eastern end (Fig 17).

The outline of this building can still be seen; the north-western wall at ground floor level is an eroded foundation; the south-western end at basement level stands to 1.1m, rendered internally; a very slight scarp covers the foundation of the south-eastern wall. A steep scarp,



Figure 17 *Field Officers' Quarters: south-eastern elevation and section in 1860 (extract from WD/2445)*



1.6m high, inside the building, was created by the removal of the main internal wall between the half basement and ground floor, and from it a projecting bank probably covers a cross-axial internal partition wall. Outside the north-eastern end, ascending the terrace, a break in the earthworks suggests a flight of steps, while a squarish platform marks the site of the yard.

The Gymnasium

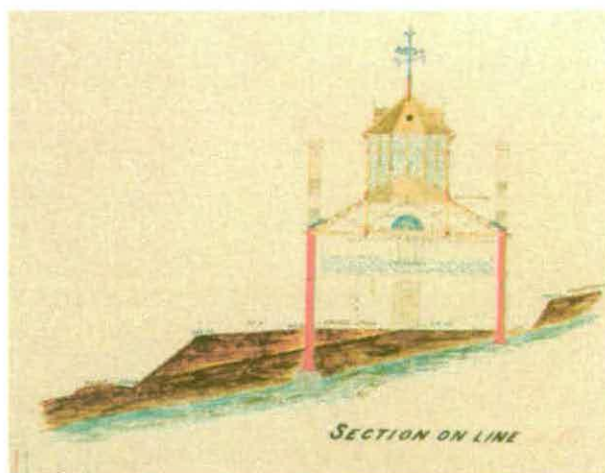


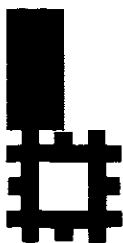
Figure 18
*The Gymnasium in
1871 (extract
from WD/2413)*

This was one of the post 1861 'improvement' buildings, built on a new terrace north-west of the Field Officers' Quarters, between 1867 and 1868. It was a brick-built two-storey hall of 10 by 4 fenestrated bays with a pitched slate roof (Fig 18). There were offices, with a gallery over, at the south-western end. In common with other early army gymnasias it had a centrally placed lantern and flanking lights to illuminate the gymnasium floor and substantial

queen-post trusses to support apparatus (Douet 1998, 146).

The site of the gymnasium occupies about two-thirds of a large platform, now littered with a massive quantity of brick rubble that is, in places, several feet deep. This exceptional depth reflects the fact that the building survived the main demolition episode and, when it was knocked down, most of the rubble remained on site. Fragments of the actual walls protrude from rubble at the eastern corner and along the north-eastern side, in yellow stock brick laid to English bond. Most of the south-eastern wall is partially concealed by a brick-strewn scarp, 1.0m high. An enormous scarp defines the north-western edge of the terrace and let into the north-eastern end is a small two-celled Privvy with a flat slate and concrete roof. Inside are remains of a WC and a double ceramic urinal.

The southern third of the terrace formed an open area in front of the gymnasium, probably for outdoor exercise and games. A free-standing wall at the north-eastern end of the terrace stands to its original height of 2.75m and 0.36m wide, with buttresses on the north-eastern face. It was probably a wall for ball games.



Troop stable/Transport shed

Another post 1861 addition, present by 1881, located on the top terrace above the gymnasium. It appears to have begun life as a simple building of one storey, comprising stalls and loose boxes on each side of a central corridor, for draught horses. Subsequently, it was altered to become a general transport shed, with stables at the north-eastern end, the remainder taken up with a vehicle shed and store rooms (WD/a, 1881; WD/2300, 1889).

This building was demolished in 1997. Very little now remains on the terrace: a short length of revetment wall against the scarp to Drop Redoubt Road that seems to have formed one side of a detached storage bay; and a patch of concrete floor.

THE ANCILLARY BUILDINGS

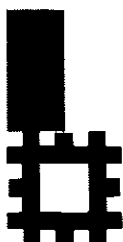
Most of the original ancillary structures, comprising stores, canteens, workshops, gardens etc, stood to the west of the main steps. The platforms on which these were built, along with fragments of walls and floors, are visible on four artificial terraces cut into the steep slope. Although the area is now heavily wooded and overgrown, the remains of many structures can be identified. Most of the ancillary buildings were arranged originally on two parallel terraces (the LOWER and INTERMEDIATE TERRACES, with a single building on a third terrace (the MIDDLE TERRACE). A fourth terrace (the UPPER TERRACE) was added in the later 19th century to accommodate Married Soldiers' Quarters and a Laundry.

THE LOWER TERRACE

On the lower terrace there were a series of structures, originally free-standing, but by 1925, the gaps between them had been filled with further additions and extensions. The result was a continuous range of buildings facing onto the main steps (WD/b, 1925). From the southern end, they are as follows:

Soldiers Privies

At the south-western end of the parade ground, a deep vertical cut was made into the hillside and faced with a very high revetment wall. This wall, which is ramped down to the cliff edge, is an admirable piece of bricklaying, incorporating an elegantly curved western corner. It contains a single original doorway, 2.15m high and 0.92m wide, with an internal rebate for a wooden door surmounted by a shallow segmental arch of stretchers; alternate bricks are grooved to look like headers. The doorway gives onto a short vaulted passage, 2.32m long and 1.14m wide, with a single step up half way along. Off the south-eastern side of this passage is a semi-sunken barrel-vaulted chamber reached through a semi-circular archway whose lintel was at waist level, 1.04m from the floor; but now removed. The chamber, now partly filled with rubble, has patchy remains of rendering on the walls, and a ceramic pipe



enters the vault on the south-western side. It appears to have been a septic tank, probably serving the Privvies associated with the Guard House on the terrace above.

Adjacent to the doorway, two secondary brick piers formerly supported a water tank associated with the Privvies. The piers, 2.3m high, are built against the wall and project 1.05m at the base. The tops are flat and spanned by an RSJ, while iron T-bars protrude from the pier ends.

In the angle formed by the revetment wall, nothing remains visible of the original building. It was a free-standing structure surrounded by a screen wall: only the broken stubs of the screen wall can be seen protruding from the main revetment. However, later latrine facilities were built against the revetment wall and there are remains of the associated rendering, ceramic urinals and twin metal brackets for flush cisterns. The north-western part of the revetment wall has three inserted vertical strips of brick and slate, presumably dividing urinals.

Ball Court

Originally for handball, this stood on the Parade Ground to the north-east of the Soldiers Privvies. It was subsequently divided to incorporate a squash court. A Skittle Alley adjoined the north-eastern side (WD/a, 1881). Part of what is probably the north-eastern wall of the ball court, 0.65m wide, can be seen in the surface of the car park.

Well House

This stood adjacent to the Ball Court and a small patch of vegetation marks its location. A temporary barrier of scaffolding poles encloses the well head.

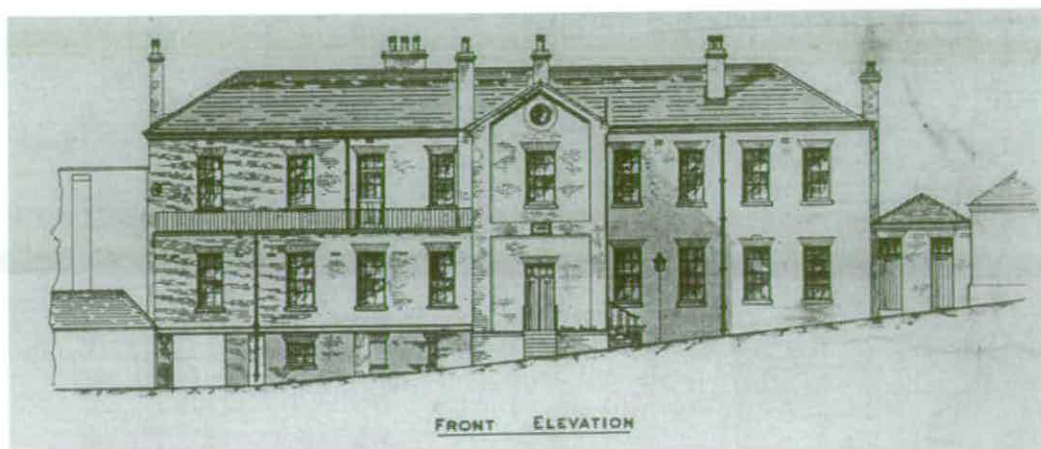
Canteen and Regimental Institute

The Canteen was located on the south-western side of the parade ground, an unusual location probably occasioned by the already compromised design of the Barracks. It may have been provided to replace the primitive cooking arrangements in the barrack ranges, and therefore anticipated one of the main requirements of the 1858 Commission. After 1861, it doubled as the Regimental Institute. It was a single pile, two-storey building of 9 by 3 fenestrated bays, with a half basement at the south-eastern end. The central bays on both the front and rear elevations projected outward, the former acting as a stair, the latter a porch etc. The building was altered in 1891 and 1899 (Fig 19).

The remains of this building comprise a terraced platform, with a curving scarp, 1.1m high, at the south-eastern end. This scarp is modern and cuts through the half basement level: the original south-eastern wall can be seen in the car park, flush with its surface. Part of the



Figure 19
Canteen and
Regimental
Institute:
north-eastern
elevation in 1903
(extract from
WD/2416)



north-eastern wall is visible, almost concealed by a scarp. The south-western side of the platform is reveted by a brick wall up to 2.8m high, near the centre of which are remains of the projecting central bay at the rear of the building, comprising parts of the side walls and a round-headed relieving arch, 2.0m wide and 1.8m tall; part of a lobby in 1903 (WD/2416, 1903). The revetment wall to the south is battered in largely original brickwork, which to the north is vertical and rebuilt in a mixed bond. The lower courses of the south-western wall of the building remain visible, along with the concrete floors of small yard areas between it and the revetment wall. There are iron supports for a tank or cistern in the north-western corner.

Cook Houses and Wash House

North of the Canteen were two Cook Houses, with a Wash House between. They were free-standing buildings of single pile plan and all three, like the Canteen, anticipated the requirements of the 1858 Commission.

The north-western, south-eastern and north-eastern walls of the first Cook House are visible, standing up to 1.4m high, but the latter deteriorates to a scarp. The south-western wall is barely visible on the surface of the platform but the revetment wall beyond it is up to 3m high, rebuilt with yellow stock brick in English bond over red brick in a random bond in its lower courses. Remains of a concrete floor lie between the revetment wall and the south-western wall.

The area north-west of the Cook House was originally open but by the late 19th century, it was occupied by a small building: the revetment wall, up to 2.3m high in very mixed brickwork, incorporates vertical strips of single headers and the broken stubs of vertical slate slabs. The latter look like urinal stalls but the site is known to have been a Printers Store (WD/a, 1881).



The Wash House, which was converted to an Ordnance Store Department Workshop (WD/a, 1881), has left very little surface trace: visible only are parts of the south-eastern and north-eastern walls, up to 1.4m high. The battered revetment wall on the south-west, up to 2.5m high in English bond, is partially hidden by rubble.

The second Cook House is partially obscured by soil erosion from the slope to the south-west. However, there are two short sections of wall on that side, both around 1.0m high: one is part of the building, the other part of the terrace revetment.

Armourer's and Tailor's Shops

This building also contained a Warrant Officer's Quarters (WD/a, 1881). Nothing is visible on the surface but immediately to the south-west is a ramped way, which led up to buildings on the intermediate terrace: it is now defined by a scarp which has partially eroded over the site of the building itself. The opposite side of the way has a concrete revetment wall, probably of Second World War date, incorporating circular ceramic drains: the butt joint between the concrete and the brick revetment wall of the lower terrace is clear.

Outside the south-eastern end, there is a short section of wall, 1.3m high, with a north-western return, faced internally with white tiles. This is another example of filling in between the original buildings, though its purpose is not known.

School Master's Quarters

This building subsequently contained accommodation for a Staff Sergeant (WD/a, 1881). Nothing is visible on the surface but behind the site is the terrace revetment, up to 2.25m high and predominantly battered, in yellow stock brick laid to English bond. An edge-set header course, 1.53m from the base, suggests that the terrace was heightened at some time. The wall contains inserted circular drains of about 0.2m diameter formed from semi-circular moulded bricks. In the centre of the revetment is a short length of vertical walling which protrudes slightly from the battered wall; the stub of a light wall, one stretcher thick, returns to the north-east from its northern edge. At the north-western end of the revetment, a stairway ascends to the intermediate terrace. The steps are mainly in concrete and slate, each tread 1.85m wide, and flanked by high brick wall that continues across the intermediate terrace.

Barrack Stores and Barrack Warden's Quarters

This was a single pile, two-storey building with a three-quarter basement, of 6 by 2 fenestrated bays with a pitched slate roof. The northern half of the building comprised living accommodation, on two floors (Fig 20). There are slight remains, principally part of the south-western and south-eastern walls, in red brick laid to English bond. Much of the



north-western end is obscured by rubble. The terrace revetment wall is battered and refaced in concrete with circular ceramic drainpipes. A gap in the revetment wall leads to a small brick chamber, 1.55m long and 1.24m wide, on the intermediate terrace above.



Figure 20
Barrack Stores and
Barrack Warden's
Quarters:
north-eastern
elevation in 1856
(extract from
WD/2407)

Barrack Stores

This structure was a large store, with an Engine House in the north-eastern end (WD/2300, 1889). It is defined by a platform, although no walls are visible, with rubbly scarps 1.3m and 1.0m high on the south-east and the south-west respectively.

Commissioned Officers' Quarters/Barrack Warden's Quarters

This was a detached residence with a garden laid out on its south-western side along the intermediate terrace (WD/2300, 1889). The site of this building lies behind the Barrack Stores in a deep cutting reveted on the north-west and south-west by high brick walls up to 3.0m high, laid to English bond. The north-western wall has a butt joint, west of which the brick is rendered and a brick pillar has been inserted in the corner: this short stretch was the northern end wall of the building proper: all the remaining walls are revetments for the cutting. East of the butt joint, red brick is used in place of the yellow stock brick elsewhere.

Straw Barn

This structure is marked only by a platform, with a scarp on the south-eastern side some 1.2m high.



THE INTERMEDIATE TERRACE

Working from the south, buildings are as follows:

The Guard House

A footpath from Archcliffe Fort formerly approached the barracks from the south-west. Where it entered the barracks there was a Guard House, a two storey brick building of 7 by 2 fenestrated bays, with a pitched slate roof. In customary fashion, the ground floor was divided into a lock up, guardroom and cells and in common with many guardhouses it had a verandah to shelter the guard in wet weather. The first floor was divided into an officer's room, orderly room and court martial room (Fig 21).

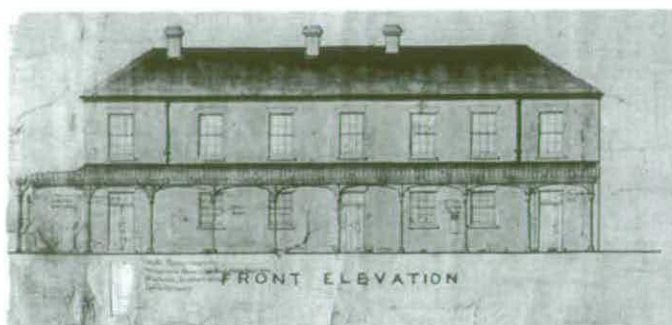


Figure 21
The Guard House:
north-eastern
elevation in 1861
(extract from
WD/2405)

The site is now overgrown and only a fragment of the south-western wall could be seen. However, the terrace continues to the south-east of the Guard House for another 25m, right to the cliff edge, though only a very small store building stood there (WD/b, 1925).

Guard House Privies

A row of privies were set back into the bank at the rear of the Guard House and these survive in good condition, complete with roof. They are constructed in yellow stock brick laid to English bond, with stone floors. There are five barrel-vaulted cubicles, three single and two double, each entered through a tall entrance with a rubbed brick lintel over; originally closed by wooden doors with lights over, except the fourth from the south, which was a urinal without a door. From the south they were: Officer's Privvy; NCOs' Privvy; a common Privvy; a Urinal and the Prisoners' Privvy. Inside each are various remains of ceramic urinals and WCs (Figs 22a and b and 23).

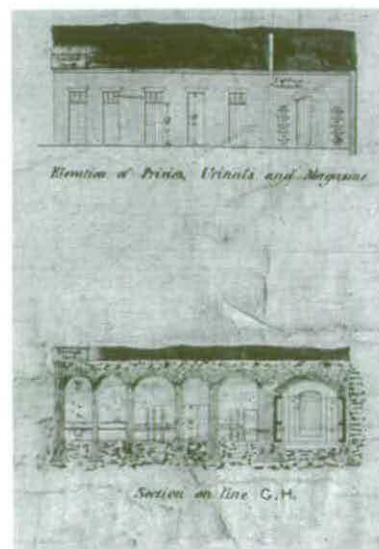


Figure 22a
Privies,
Urinals and
Magaine:
north-eastern
elevation and
section in
1861
(extract from
WD/5405)

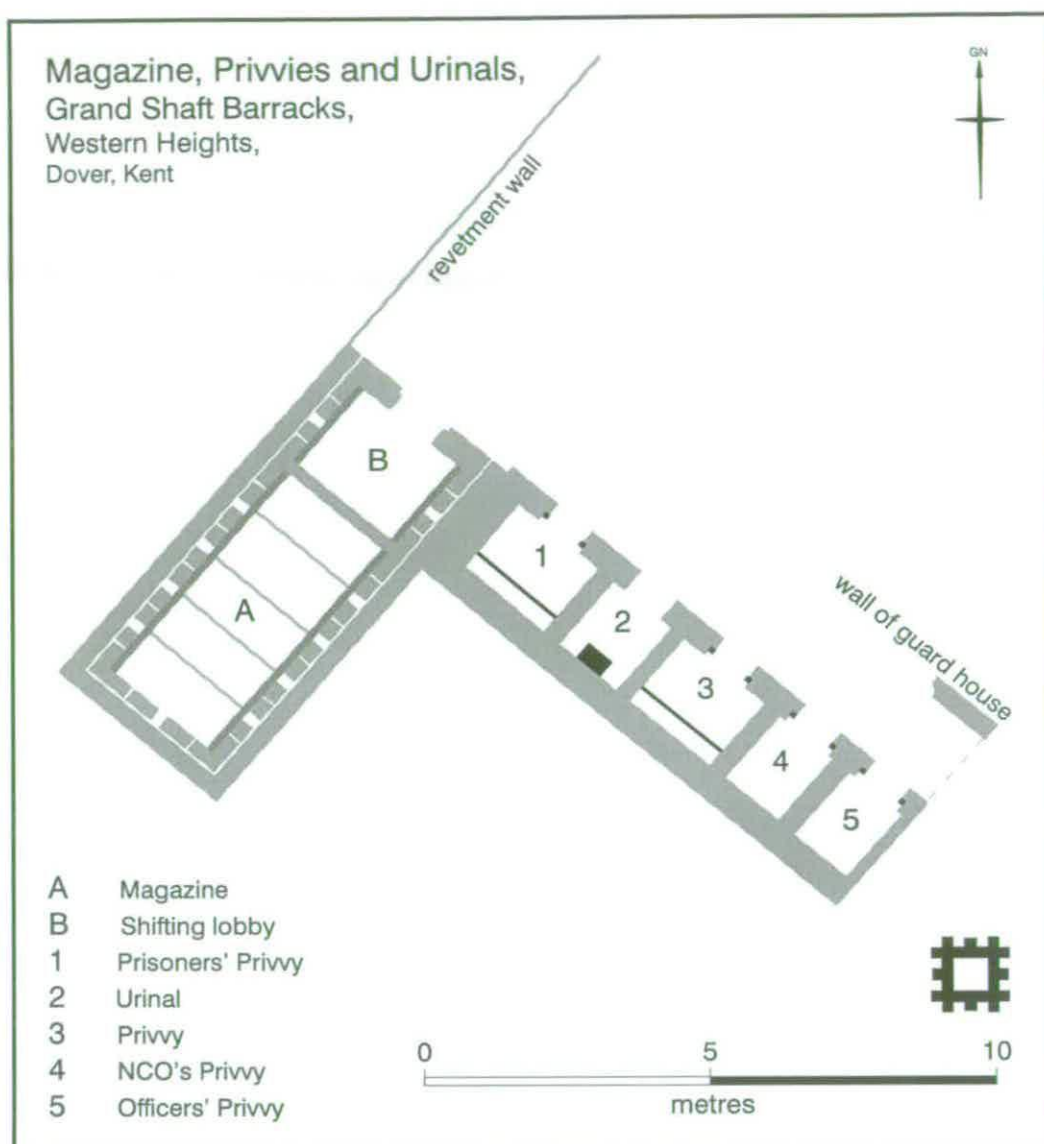


Figure 22b
*The Guard House
Privvies and
Magazine in 1999*

Magazine

This building, which contained powder for the entire barracks, is adjacent to and continuous with the Guard House Privvies, separated only by a butt joint and slightly set back. It was constructed under the hillside, its roof asphalted to prevent percolating water and bomb-proofed by the earth above it (Fig 22a).

The magazine is of similar construction to the Privvies, in yellow stock brick laid to English bond. The entrance, in the centre of the elevation and now damaged, is rebated for double inward opening wooden doors. Over the entrance is a shallow segmental arch in rubbed brick with incised lines halving the bricks. There is a concrete sill to the doorway and glazed airbricks to the cavity on each side.



Figure 23
*The Guard House
Privies in 1999*
(NMR)

Internally, the construction is entirely brick with glazed airbricks through to the cavity. It is sub-divided into an outer Shifting Room and an inner Magazine, separated by a partition wall one stretcher thick. In both rooms there is an offset course, which formerly supported a raised timber floor that helped to keep munitions dry. The walls, 2.3m high above the timber floor, have gaps of one header arranged in vertical lines and also small timber slats built into the pointing gaps: both of these supported the timbers of the magazine racking. The whitewashed ceiling is a shallow barrel vault, 2.94m high, springing from a course of sandstone slabs on the wall tops.

Workshops and Wash House

Three small buildings stood in series immediately north-west of the Guard House: an Armourers' Workshop, a Workshop and a Wash House. Although the area is quite overgrown, there did not seem to be any surface remains except for part of a flight of brick steps near the north-western corner of the Wash House.

Gardens

There are two platforms, defined by the prominent, 2.0-4.0m high scarp of the intermediate terrace, immediately south-west of the Armourer's/Tailor's Shops and School Master's Quarters. On the Tithe Map of 1844 and on a plan of 1889, both areas are shown as gardens for the Barrack Master's Quarters (Fig 24). The southern platform was enclosed on the



north-west and south-west by a brick wall. The wall dividing the gardens is intact, in red brick laid to English bond.

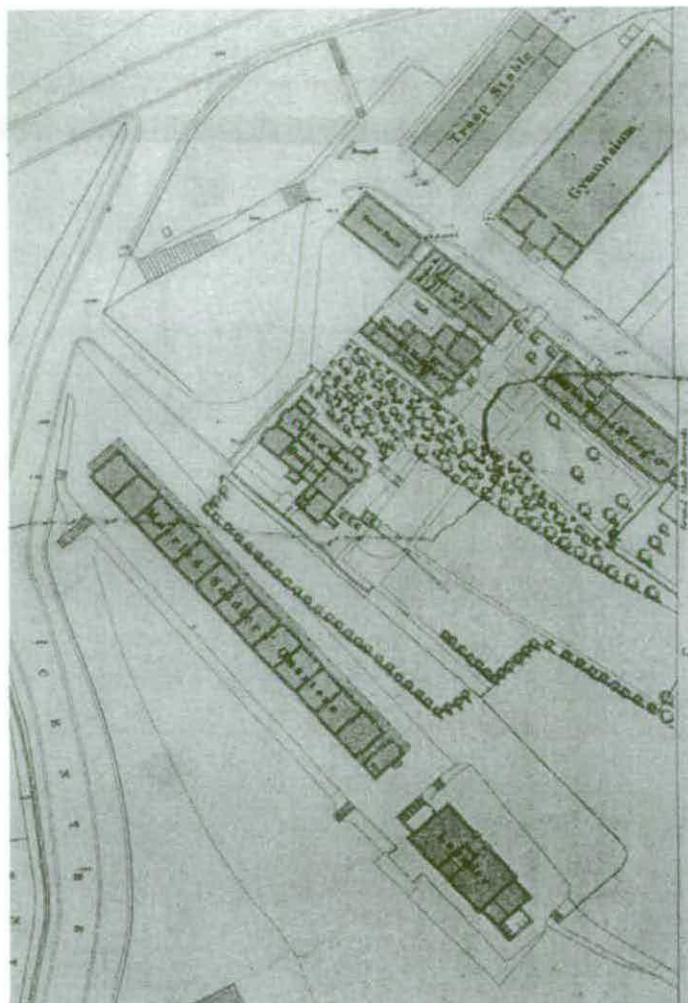
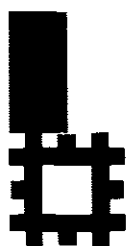


Figure 24
The Gardens
associated with the
Barrack Masters
Quarters and
Clerk of Works
Quarters in 1889
(extract from
WD/2300)

THE MIDDLE TERRACE

The majority of this terrace contains no visible structures and probably never did; perhaps suggesting that the terracing was made before the exact barracks layout had been determined. Only one building stood on the terrace in the original design; the Clerk of Works Quarters, at the very northern end of the terrace, with walled or fenced gardens extending to the south-east. The terrace continues for 90m to St Martin's Steps, with few visible features but much brick rubble, except for an isolated brick shaft, 1.2m by 1.0m and 1.2m tall, which does not seem to be *in situ* but rather, has tumbled from the upper terrace. The terrace continues beyond St Martin's Steps, where two slight overgrown hollows suggest the former existence of other buildings, of unknown date and function. The only other features on the terrace are of Second World War date.



Clerk of Works Quarters

This was quite an elaborate residence with its own gardens (Fig 24). It had been demolished before 1942 and a single, Nissen-type building erected on its site (NMR APs: HLA/574/64-5).

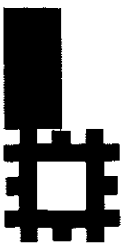
The house was approached along a track descending from Drop Redoubt Road and a path from the top of the main steps: both routes remain as woodland paths, carried in a cutting and along a terrace respectively. The site is very overgrown and there is very little sign of the house but there is a level platform contained by the massive terrace scarps on the south-west and north-east, with smaller scarps, 0.7m and 1.0m high respectively, defining the north-western and south-eastern edges. Part of a revetment wall, 1.2m high, is just visible on the south-west where the rest has been covered by erosion of the terrace scarp itself. A similar revetment scarp exists on the north-east and has been re-faced with a thick layer of concrete, probably of Second World War date: at its north-western end is the top of a shaft or drain. In the centre of the platform is a concrete floor, rebated at the edge to take a course of brickwork, the base of the Second World War building.

Second World War deep shelter and Guard Post

A shelter was constructed under the hill as a refuge against the prolonged shelling and bombing to which Dover was subjected in the Second World War. The entrance has been sealed off but the approach is visible, cut back into the terrace scarp. The splaying sides of the cut have been revetted with ramped red brick wing walls. Two blast walls, one butted to each wing wall, prevent a direct approach to the entrance by leaving only narrow gaps on opposite sides. There is a tall façade at the entrance and a large concrete lintel is just visible. Behind the façade, the ground has been deliberately collapsed into the tunnel, leaving a small crater.

On the terrace near the deep shelter entrance is a small semi-sunken Guard Post of similar date, approached down a short flight of concrete steps with brick side walls. It is in identical red brickwork, with walls 0.23m thick, and a slightly overhanging concrete roof, 0.15m thick, which slopes very slightly to the north-east. The interior is a single rectangular room of 3.08m by 1.82m, with the entrance rebated for a door and an observation slit, 1.32m long and 0.47m high, in the north-eastern wall overlooking the barracks. The south-eastern wall has a vent and flue for a stove and the southern corner is broken out and lined with angled brickwork, emerging outside in a small concrete-lined hole.

Just to the south-east is a small shaft, one brick thick, 0.96m by 0.58m by at least 0.8m deep. The north-east wall has deliberate gaps in the brickwork and probably formed a soakaway for a latrine.



UPPER TERRACE

This terrace was constructed in the late 1860's. At the time of survey, it was very overgrown and therefore not thoroughly investigated. However, it appeared to have no obvious visible remains, and the terrace appeared to be eroded and graded. It originally supported two structures:

The Married Soldiers' Quarters

This building, constructed in 1869, was a brick-built two-storey range with a pitched slate roof, providing quarters for 26 families, each in a one-room apartment with a covered verandah. Each apartment contained a cupboard and a fireplace with a small range. Stairs at the north and south ends of the range reached the first floor apartments and a sink and ash bin were provided in a separate room at the south end of the range (Figs 24 and 25).

The provision of single room apartments with a first floor verandah conform to the model plan prepared in 1860 by the office of the Inspector General for Fortifications, and first implemented at Hounslow. At Grand Shaft Barracks, the location of the married quarters some distance from the barracks may either be a result of using the only site available by 1869 or the desire to separate families from the rough soldiery (Douet 1998, 145).

Laundry

This building stood to the south-west of the Married Soldiers' Quarters (Fig 24).



Figure 25 Married Soldiers' Quarters: north-eastern elevation in 1869 (extract from WD/2461)

5. DROP BATTERY

A BRIEF HISTORY

Drop Battery appears to have originated shortly after 1853 when, after a gap of 37 years, work began to complete and update the Western Heights defences. The battery, established to provide close protection for the rapidly developing port, is shown in outline on a plan of 1858 as a simple curved trace with gun floor behind it, and a single building to the rear – probably an Artillery Store (PRO/WORK/43/1598, 1858). The known ordnance comprised three standard 24-pdr SB cannon but the size of the battery on the 1858 plan shows that it was intended for a larger gun complement (John Iverson, *pers comm*).

Significant alterations were made during the construction of the North-east Line between Drop Redoubt and the cliff edge at Drop Battery, carried out from October 1859 until February 1862. A contemporary report, of October 1868, records the evidence of this construction given by Captain Charles Elwin Harvey RE, who stated that a magazine was added at that time but that no alterations were made to the pre-existing expense magazines (John Iverson *pers comm*). It is clear that the huge rampart of the Line was built over the north-eastern edge of the old battery, effectively curtailing its field of fire in that direction. A subsequent plan reveals the original design, with ground platforms for seven guns, though the symmetry of the trace suggests there were previously eight (Fig 26). These platforms were for cannon mounted on garrison carriages and firing *en barbette*. The plan also shows the single building, labelled as a Store, and three magazines; the two expense magazines from the original battery under the scarp to the rear of the gun floor and the new one, on the flank under the rampart of the North-east Line. On top of the Line above the new magazine was a circular emplacement for a gun on a traversing carriage, probably a more modern gun – see below.

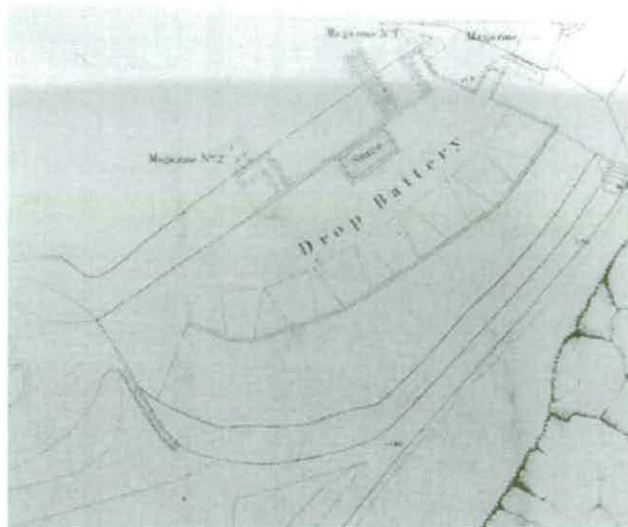


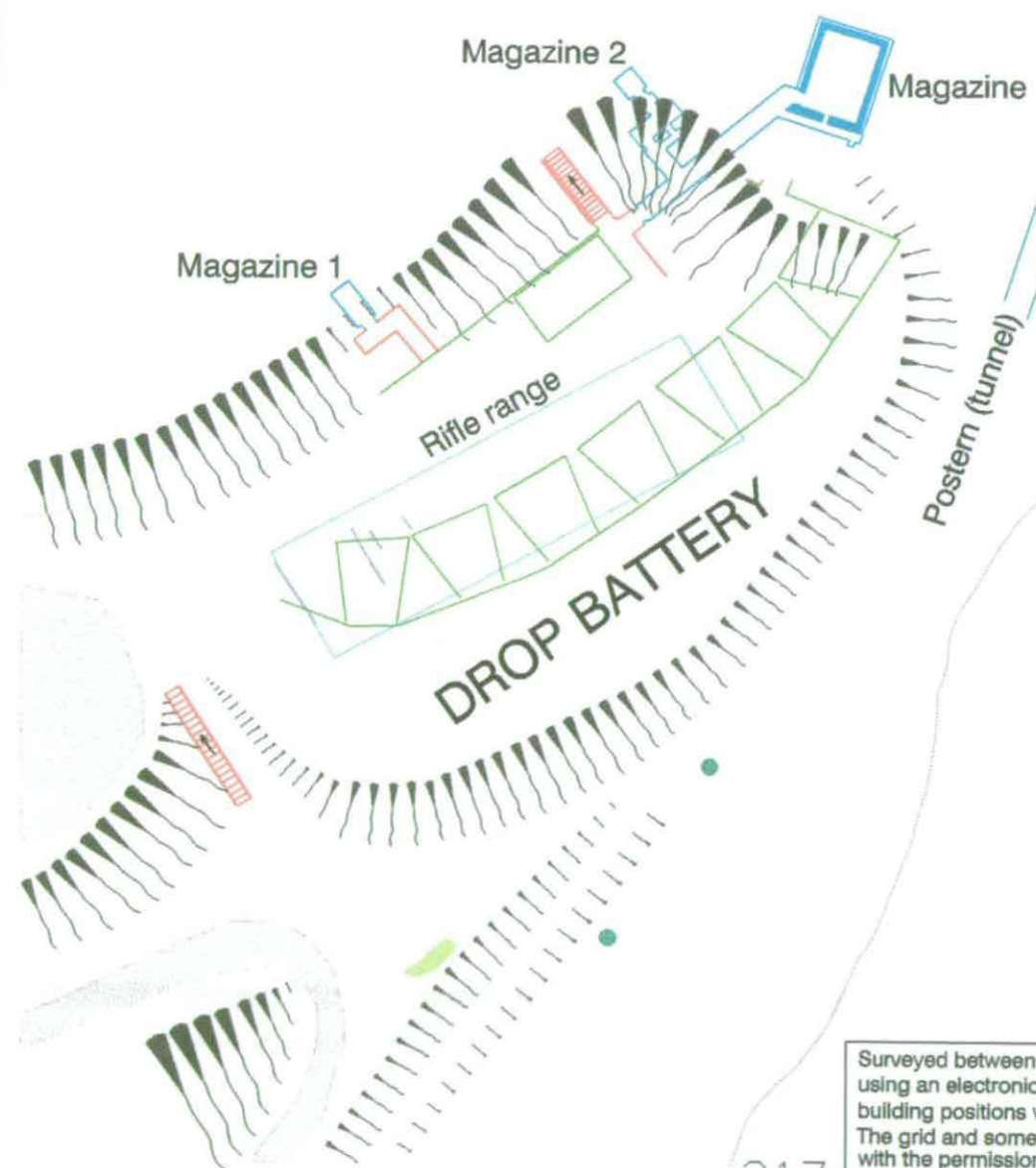
Figure 26
Drop Battery in
1881 (extract
from WD/b)

By 1876, there was a heavier armament of three 42pdrs and three experimental 7-inch RBLs but it was proposed that these be removed and replaced with five 64pdr RMLs (John Iverson, *pers comm*). The battery is shown in outline, and named, on a chart dated 1874 and its main magazine was still operational in 1882 but by May 1886, it was

Drop Battery Western Heights Dover, Kent

key

-  C19th standing walls and steps
-  C19th walls (course of)
-  C19th underground or recessed structures
-  C20th walls
-  C20th walls (course of)
-  slit trenches/small pits
-  roads and paths
-  fences
-  cliff edge
-  trees



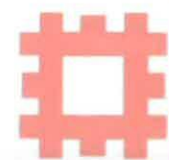
Surveyed between June and July 1999 at a scale of 1:500
using an electronic EDM and graphical survey
building positions were digitised from 19th and 20th century plans.
The grid and some detail reproduced from Ordnance Survey mapping
with the permission of the Controller of Her Majesty's Stationery Office.
by Paul Pattison and Moraig Brown
English Heritage Crown copyright

631600m
141000m

141100m
631750m

317

317





recommended that the battery should be disarmed by removal of its five 64pdr RMLs, possibly because St Martins Battery had assumed its role (PRO: WO/78/5101 pt 7, 1874; WD2411a, 1882; John Iverson, *pers comm*).

A miniature rifle range was constructed on the site of the gun floor, by 1925 (WD/b, 1925).

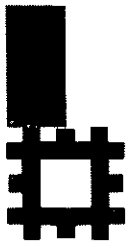
DESCRIPTION and INTERPRETATION

The site of Drop Battery is covered by thick scrub, particularly the glacis and rear scarp, although it is possibly to walk across the site of the gun floor. The battery was built on a terrace, created by cutting back severely into the hill slope and depositing the spoil to form a glacis on the seaward side (Fig 27). On the site of the gun floor between these two scarps there is little now visible: at the very north-eastern edge, a low brick wall may be part of the *barbette*; a concrete floor at the south-western end is associated with the rifle range. The glacis is largely intact, as is also the scarp at the rear of the battery: both are steep, well-defined and at least 3.0m high, though access could not be gained for accurate measurement. Both expense magazines from the original battery survive (Magazines nos 1 and 2), the latter built into the rear scarp, the former now under the North-east Line and incorporated into the later main magazine. Only Magazine no 2 is considered here; the remainder lie outside the survey area.

Magazine no 2

This is a small building built under and protected by the rear scarp of the battery (Fig 27). It is approached along an L-shaped passage cut into the rear scarp and lined with brick laid to English bond. The outer arm of the L is ramped down with the line of the scarp, reaching a maximum height of 3.5m, while the inner arm forms a tiny yard outside the magazine. The entrance to the magazine is a doorway 1.98m high and 0.87m wide, with a shallow segmental arch of headers over and internal rebates for twin, inward-opening wooden doors. The area around the door is covered with a thick layer of asphalt waterproofing which probably also seals the roof. On each side of the door is a small hole, 0.2m square, giving onto the ventilation cavity around the magazine. Above the doorway, there is a rendered repair.

The interior is a single rectangular room, 2.8m long and 1.45m wide, in brick laid to English bond. The ceiling is an axial barrel vault, 2.2m high, coursed entirely with stretchers. The floor has gone but was originally timber boards laid axially on cross-axial dwarf walls, to allow ventilation under. The north-western end wall has six header-sized gaps in the brickwork, arranged in pairs at head, waist and floor height, which held timbers for the magazine racking.



6.

ST MARTIN'S BATTERY

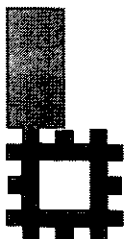
A full description of St Martin's Battery falls outside the scope of the present survey, so the following is only a summary (a full account is being prepared for the Dover Western Heights Survey Project).

A BRIEF HISTORY

St Martin's was one of several new coast artillery batteries installed in Dover during the 1870s: others were built in Dover castle and most notably, on Dover Pier (Coad and Lewis 1982, 181; 192-5). St Martin's was built between 1874 and 1877 and there were very few subsequent alterations and additions. One of these was the planning, in 1888-9, of a new cartridge store sited underground behind the battery, reached along a passage which opened behind the artillery store. The armament was three 10-inch RMLs on traversing and sliding carriages. Although these guns quickly became obsolete, they remained in place until 1908, by which time their coast defence role had been assumed by the more advanced 6-inch and 9.2-inch BL guns of South Front Battery and Citadel Battery.

The battery was disused until the Second World War when, in June 1940 after the capitulation of France, the possibility of a German invasion of the British Isles prompted Churchill to approve several emergency defence measures, including the construction of a ring of fixed gun batteries around the coast. St Martin's, renamed Western Heights Battery, was brought back into service as one of these 'emergency' batteries. Alterations were begun in September 1940 and completed in May 1941. It was operational until December 1944 and thereafter placed in care and maintenance until the guns were removed in February 1947 (PRO/WO/192/198).

Its principal role was in defending Dover Harbour; to engage vessels attacking or trying to gain unauthorised entry (except the fast-moving MTBs), but it had secondary roles in resisting landings, air raids and assault from the landward (PRO/WO/192/198). To carry out the main role, the battery was equipped with three 6-inch Mk VII guns with integral shields, but no II gun, the oldest of the three, was quickly removed: the remaining two can be seen on air photographs taken in 1945 (NMR: APs: 106G/UK/610/6360-1). They were old salvaged naval guns, hurriedly brought back into service, manufactured in 1899, 1902 and 1903 respectively. The battery could operate at night in conjunction with two fighting lights and two pillboxes, which were built within a defensible perimeter, provided combined ground and light AA defence. The full complement of the battery was 143 officers and men (PRO/WO/192/198).



DESCRIPTION and INTERPRETATION

In the following account reference should be made to the survey plans, ie. Fig 29 (in folder) and Fig 31.

The battery sits on an artificial terrace cut into a prominent bluff near the cliff edge. It overlooks the harbour and commands a panoramic view of the approaches, from Langdon Cliffs to the north-east round to Shakespeare Cliff on the south-west. The structure survives very well, including much of the original work of 1874-7, which comprised three gun emplacements with ammunition stores between them, built into a gently curved trace and protected by concrete aprons and an earthen glacis (Fig 28). The glacis survives in a relatively unmodified state: only at the south-western end has it been smoothed out by works associated with the present car park. It is a moderate earthen slope, 1.5-3.0m high, most prominent on the south-west (Fig 29).

Each emplacement was constructed as a deep gun pit, open to the rear, containing a raised circular gun mounting reached via steps from the covered way. Iron rails for small trolleys, which carried the heavy shells, ran around each gun pit from the stores: the end of one set is visible in the central emplacement. The guns were mounted *en barbette*, the circular mounting enabling a wide arc of traverse, while the front of each emplacement was protected by a sloping concrete apron. The aprons and glacis were designed to deflect incoming shells up and over the installation. The aprons survive but the emplacements are infilled at the front. Their walls become visible to the rear, where they are shared with the adjacent ammunition stores, in yellow stock brick, still standing to full height of 2.15m above the original floor.

Between and flanking the emplacements were four low buildings; the shell stores, cartridge stores and a lamp room. The northern three had porched entrances formerly with strong wooden doors to the rear directly off the covered way and all the roofs were bomb-proofed with concrete and earth so that they formed carefully scarped earthen mounds which projected above the level of the emplacements. For each gun, there was a shell store immediately to the south-west and a cartridge store to the north-east; all of them are intact, though one porch is partly demolished. Set into the curved external corner of each shell store, at the junction with the respective gun emplacement, is a shallow rebate with the metal sockets for small davits which lifted the heavy shells from the stores directly onto the trolleys.

Inside, the stores are of cavity-wall construction, in yellow stock brick laid to English bond, with elaborate airbricks at the ends of the cavities, lamp recesses and issue hatches. There is

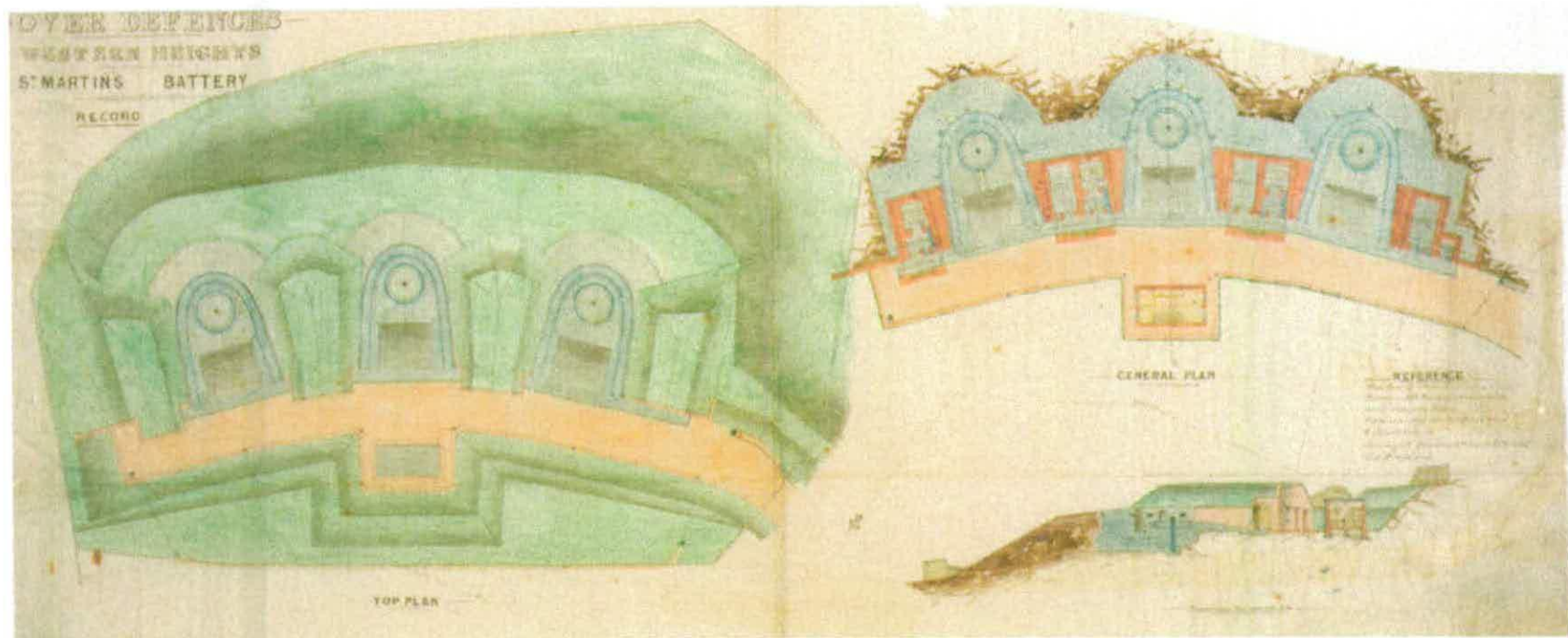


Figure 28 St Martin's Battery in 1877 (extract from WD/2359)



a single ventilation pipe, usually ceramic, in the ceiling of each store. The walls are whitewashed and the floors are of concrete.

On the western flank of the battery is a small building, open to the elements. It is only 1.53m square and stands to its original height of 1.23m; there is a single entrance. This was a DRF cell for range-finding and also the BOP (PRO/ WO/192/198).

A covered way runs alongside the trace to the rear, beyond which is a platform marking the site of the artillery store, where spares for the guns were kept, and the entrance to the underground cartridge store of 1888-89. The covered way linked the battery with the South Military Road, one of the main service roads on Western Heights.

During the Second World War phase, the three 6-inch BL guns were installed in covered gunhouses built in the old open RML emplacements. At the front, the old gun pits were filled with concrete to barbette level as a base for the new guns, which were protected by the brick side walls and reinforced concrete roofs of the gunhouses; broad openings at the front enabled a wide arc of traverse (Fig 30). The roofs continued to the rear over new two-storied structures that filled the back of the old emplacements: their elevations were built flush with the old shell and cartridge stores, creating a continuous range. The upper storeys formed gun



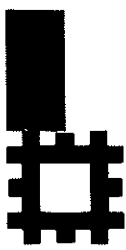
Figure 30
*St Martin's
Battery: gunhouse
for a 6-inch BL
gun, built in 1940
(NMR)*



St Martin's Battery, Dover Western Heights



Figure 31
St Martin's
Battery in 1999;
simplified plan of
the main structure
(RCHME Crown
copyright)



detachment shelters and the lower floors were for ammunition storage, small arms, and other stores. The whole battery was covered with a thick layer of earth for protection, particularly against aerial bombardment and strafing. An interesting feature are the curvilinear and undulating brick facade walls built on top of and flanking the gunhouses, designed to break up and hide the hard edges of the battery when viewed from afar. Finally, a defended perimeter was established around the battery which included wire entanglements, slit trenches and two pillboxes, one on the north-east flank and one on the hill to the north-west (Fig 29).

All the structural elements of the gunhouses are visible: the walls, in red brick, are built onto and against the older emplacement and ammunition store walls. This is particularly clear on the seaward side where the walls can be seen riding over the asphalted sloping faces of the old ammunition store roofs. The reinforced concrete roofs of the gunhouses have a slight slope to the rear and an overhang at the front, forming a canopy over part of the gun floor (Fig 30).

On the gun floors are bolts which secured the circular holdfasts to the guns. Beneath the floors to the rear are ready-use ammunition recesses on an intermediate level reached from the old floors by steps up from the rear of the battery and by steps down from the new gun floors.

Behind each gun floor is a two-storied structure filling the rear of the old emplacements. At first floor level are the gun detachment shelters, each one a single room lit by two small square windows with wooden casements. A circular hole in the same wall, above a square concrete plinth on the floor, is the site of a flue pipe and stove respectively. Under the shelters at ground floor level, reached by steps up from the rear of the battery, are storage rooms divided by walls into four equal bays.

Pillboxes

These are of identical type (type 23) with minor differences, built respectively high up on the north-eastern flank and on the hill to the rear of the battery. Each has two compartments protected by walls 0.36m thick: one compartment is open to the sky and formed a light AA position, with the gun pedestals still intact. The second compartment is roofed and has four rifle/LMG embrasures.

The top of the battery has a thick layer of earth whose surface is undulating and pitted, with few clear features. There is a small AA mounting, once more for a LMG.



Camouflage netting formerly stretched from the rear facade of the battery, right across the covered way, and extended all the way back to its junction with the North Military Road (NMR/APs: 106G/UK/610/6360-1).

The defended perimeter

The battery stood within a small area defined by a barbed wire entanglement, clearly visible on air photographs of 1945 (NMR APs: 106G/UK/610/6360-1). Associated with it were infantry positions for close defence, their locations marked today by several shallow depressions and an infilled slit-trench on the slope east of the battery. Beyond the entanglement, near the cliff edge, a former covered way between Grand Shaft Barracks and the Military Hospital appears to have been deepened in places and used for defensive positions (Fig 29).

Hospital Postern

At the south-western edge of the survey area is the blocked entrance to Hospital Postern. Outside the entrance, the path is deepened and its sides are revetted with a vertical brick wall (Fig 29). Beyond the blocking, a tunnel leads to the South Entrance Ditch but this is beyond the scope of the present survey.

St Martin's Flank

There was a complex earthwork on the western flank of the battery, which helped the defence of South Entrance and the South Entrance Ditch. It comprised a series of stepped scarps descending the hill on the edge of the ditch. Several of these steps survive as earthworks, though the upper series have been destroyed by works associated with the present car park (Fig 29).

SURVEY AND RESEARCH METHODS

Paul Pattison, Moraig Brown and Duncan Garrow carried out the archaeological survey. Control and most of the archaeological detail was supplied using a Wild TC1610 electronic theodolite with integral EDM. The XYZ coordinate data was captured on a Wild GRM 10 Rec Module and plotted via computer using Key Terra-Firma software on a Hewlett Packard Designjet 750C plotter; heights were transferred from an OS benchmark on the Centre Road at NGR TR 3139 4085.

Any remaining archaeological detail was supplied at 1:500 scale, with details of some structures at 1:100 scale, using conventional graphical methods.

The report has been written and researched by Paul Pattison, utilising earlier work by Andrew Williams and Duncan Garrow. Documentary research was undertaken at the Public Record Office in Kew, the NMRC in Swindon, the Centre for Kentish Studies in Maidstone and at Dover Museum. For the most part this comprised a search for cartographic and pictorial sources. All drawings are by Moraig Brown.

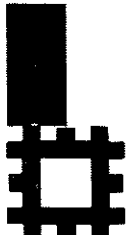
Steve Cole carried out site photography.

The site archive and a copy of this report will be deposited in the archive of English Heritage at the National Monuments Record Centre, Kemble Drive, Swindon SN2 2GZ, to where further enquiries should be directed.

© Crown copyright, English Heritage

ACKNOWLEDGEMENTS

The authors are grateful for the help of Paul Johnson (PRO, Kew) and John Iverson (Dover Museum) for their help in this project.



9. BIBLIOGRAPHY AND SOURCES

Published sources

Batchellor W, 1844 *A Map of the Town and Port of Dover, from an Actual Survey made in 1844 by Small and Son, Dover*

British Geological Survey (BGS), 1974 1:50,000 Solid and Drift Edition *Sheet 305/6 Folkstone*

British Geological Survey (BGS), 1977 1:50,000 Solid and Drift Edition *Sheet 290 Dover*

Coad J G and Lewis P N, 1982 'The Later Fortifications of Dover' in *Post Medieval Archaeology* 16, 141-200

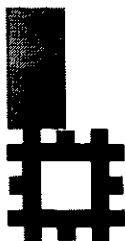
Douet J, 1998 *British Barracks 1600 – 1914; Their Architecture and Role in Society* (London, The Stationery Office)

Unpublished sources

From the National Monuments Record (NMR), the archive of English Heritage, at the National Monuments Record Centre, Swindon:

Maps and plans

- | | |
|---------|--|
| WD/a | 25-inch Dover Grand Shaft Barracks; Plan Shewing Occupation (War Department Revision 1881 25-inch OS Sheet LXVIII.14.12, surveyed in 1858, published in 1861, with military revisions to 1881) |
| WD/b | 1:500 Dover Western Heights; Grand Shaft Barracks and Drop Redoubt, Ground Floor Plan, dated 1925 |
| WD/2300 | Detached Bastion, General Plan, dated 1889 |
| WD/2352 | Plan of the Military communication from the Town of Dover to the Western Heights, dated 1808 |
| WD/2354 | Section of the Military communication from the Town of Dover to the Western Heights, dated 1808 |



- WD/2358 Dover District, Dover. Plan showing proposed Main Magazine for St Martin's Battery, dated 1876
- WD/2359 Dover Defences: Western Heights; St Martin's Battery record plans and sections, dated 1877
- WD/2360 Dover: St Martin's Battery; Plan and Sections of Main magazine, dated 1877
- WD/2361 Dover, Western Heights. St Martin's Battery; proposed Lightning Conductors to Shell and Cartridge Stores, dated 1878
- WD/2362 St Martin's Battery; Sections of Ground in Rear, dated 1888
- WD/2363 Dover: St Martin's Battery. Plan shewing proposed New Cartridge Store, dated 1889
- WD/2506 Dover, General Plan of the Western Heights Barracks, dated 1861
- WD/2405 Dover, Western Heights Barracks, Guard Room etc, dated 1861
- WD/2407 Plans, Elevations and Sections of Proposed Alterations to Barrack Stores, Western Heights, Dover, dated 1856
- WD/2413 Western Heights, Plans and Sections of Gymnasium, dated 1871
- WD/2416 Dover, Grand Shaft Barracks, Canteen and Regimental Institute, dated 1903
- WD/2434 Dover, Western Heights Barracks, Stables etc, dated 1860
- WD/2411a Dover, Western Heights, Plans and Elevations of Magazines and Cartridge Stores, dated 1882
- WD/2445 Dover, Western Heights Barracks, Officers' Quarters, Range A, dated 1860 with alterations to 1896
- WD/2446 Dover, Western Heights Barracks, Officers' Quarters, Range B, dated 1860 with alterations to 1896
- WD/2449 Dover, Western Heights Barracks, Staff Sergeants' Quarters, dated 1865, with alterations to 1905
- WD/2450 Dover Western Heights, Royal Engineer Offices etc, dated 1867
- WD/2452 Dover, Western Heights Barracks, Soldiers' Quarters Range A, dated 1860
- WD/2453 Dover, Western Heights Barracks, Soldiers' Quarters Range B, dated 1865
- WD/2461 Dover Western Heights, Married Soldiers' Quarters, dated 1869 (plan and elevation)



- WD/2462 Dover Western Heights, Married Soldiers' Quarters, dated 1869 (sections)
- WD/2471 Key Plan showing location of Married Quarters for RE Foreman of Works, dated 1904

Aerial photographs

- HLA/574/64-5 (3rd June 1942)
- 106G/UK/610/pt IV/6327 and 6360-1 (5th August 1945)
- TR/3140/1/360 (17th April 1978)
- MAL/2079/239-40 (25th June 1979)
- MAL/83001/37-9 (2nd January 1983)
- MAL/1683/235-6 (1st July 1983)

Public Record Office, Kew (PRO)

- MR/1346 Sketch of the Fortifications erected on the Western Heights of Dover, dated 1814
- WO33/581 Barracks and Hospitals Improvement Committee, Interim Report on Dover Western Heights
- WO44/572 A Survey of the Grounds on the Western Heights, Dover, belonging to the Ordnance, dated 1854, copying a plan of 1808
- WO/78/5101.7 Dover, Record Drawings of Electric Light Emplacements Etc near Archcliffe Fort, dated 1901, on a chart of 1874
- WO/192/198 Fort Record Book, Western Heights Battery, 1940 – 1947
- WORK/43/1598 Plan of the Western Heights, Dover, dated 1858
- IR30/17/88 Tithe Map 1844