



ENGLISH HERITAGE

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A 17th-century battery
for the defence of the
Medway and Chatham
Dockyard

Louise Barker

SURVEY REPORT

ARCHAEOLOGICAL INVESTIGATION SERIES

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AND CHATHAM DOCKYARD**

**ARCHAEOLOGICAL INVESTIGATION REPORT SERIES 20/2002
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Report by: Louise Barker
Survey by: Louise Barker, Moraig Brown and Paul Pattison
Drawings by: Louise Barker
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*The foundations of the east bastion of the lower
gun line, looking down river
(NMR: AA031331)*



CONTENTS

List of Figures	ii	
Glossary	iv	
1	Introduction	1
2	Background History: the Defence of the Medway	4
3	The History of Cockham Wood Fort	9
	The construction of the fort	9
	The late 17 th and 18 th - century fort	12
	The fort in the 19 th and 20 th centuries	14
4	Description of the Earthworks and Structures	18
	The ditch	18
	The rampart and east entrance	20
	The redoubt	22
	The well and conduit	24
	The 17 th - century gunner's house	25
	The late 18 th - century gunner's house	26
	The upper gun line	27
	The lower gun line	29
	The tidal defences	33
5	Discussion	34
6	Survey and Research Methods	35
7	Acknowledgements	36
8	Bibliography and Sources	37



LIST OF FIGURES

Frontispiece: The foundations of the east bastion of the lower gun line

1	Location Map	1
2	The defences of the River Medway 1559 - 1860s	3
3	Early 18 th - century plan of the River Medway	6
4	De Gomme's 1669 proposal for Cockham Wood Fort	7
5	De Gomme's 1669 proposals for Gillingham and Cockham Wood Forts	8
6	Plan of Cockham Wood Fort, dated 1698	11
7	Plan of Cockham Wood Fort, dated 1742	12
8	Cockham Wood Fort as represented on an early 18 th - century plan	13
9	Sketch plan dated c1800 indicating the present and supposed original boundaries of Cockham Wood Fort	15
10	Cockham Wood Fort: interpretative plan and sections	17
11	The ditch: interpretative plan of the earthworks	19
12	Photograph along the gorge ditch	20
13	The ramparts and east entrance: interpretative plan of the earthworks	21
14	Photograph of the gorge rampart	21
15	The redoubt: plan of the structure	22
16	Photograph of the redoubt	23
17	Elevation of the redoubt, dated 1698	23
18	The well and conduit: interpretative plan	24
19	Photograph of the well	25
20	The late 18 th - century gunner's house: plan of the structure	26
21	Photograph of the late 18 th - century gunner's house	27
22	The upper gun line: interpretative plan of the earthworks	28
23	Photograph of the western section of the upper gun line	28
24	The lower gun line and tidal defences: interpretative plan	29



25	Photograph of the revetment of the lower gun line and timber remains of the tidal defences	30
26	Photograph of the counterforts of the west bastion	31
27	Photograph of the rear face of a counterfort with part of the stone gun floor in the west bastion	32
28	Photograph of the rear revetment wall of the lower gun line	32
29	Survey traverse diagram	35
30	English Heritage survey plan	(back cover)



GLOSSARY

Bastion

Part of a fortification which projects from the main work to provide flanking fire for its defence

Berm

Level space between the edge of a ditch and rampart

Counterforts

Buttresses built behind scarp walls, and often arched over, to provide additional strength

Counterscarp

The exterior slope or revetment of a ditch

Embrasure

An opening in a parapet or wall through which a gun - usually an artillery piece - could be fired

Palisade

A continuous barrier of upright timber stakes designed to hinder an infantry attack

Guérite

Sentry box projecting from the angle(s) of a bastion or redoubt

Parapet

A low wall or earthen breastwork protecting the defenders on the rampart

Rampart

The main defence of a fortification, comprising an often massive and carefully profiled earthwork, on or behind which a large part of the garrison and weaponry are situated

Revetment

Retaining wall of a rampart or on the side of a ditch

Salient

An angle projecting outwards from the line of a fortification

Terreplein

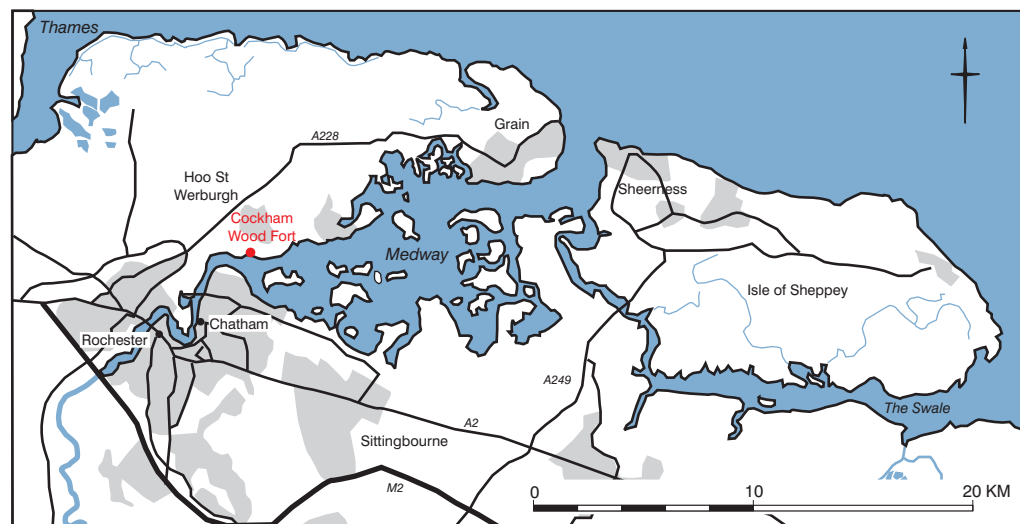
A level surface on a rampart, behind the parapet, providing a platform for guns



1. INTRODUCTION

During November 2001, archaeological staff from the Cambridge (Brooklands) office of English Heritage surveyed and investigated the remains of the Scheduled Ancient Monument known as Cockham Wood Fort (TQ 7755 7125; SAM Kent 195), situated in the parish of Hoo St Werburgh on the north bank of the River Medway (Fig 1). The work was undertaken at the request of Peter Kendall, Inspector of Ancient Monuments, as a precursor to management works at the site. It was carried out following the removal, under the archaeological supervision of Victor Smith, of vegetation and debris that had previously covered much of the fort.

Figure 1
Cockham Wood Fort, location map



Cockham Wood Fort was built from 1669 following the humiliating Dutch raid on the River Medway. It formed part of a system of artillery defence for protecting the river approaches to the Royal Dockyard at Chatham and the naval vessels that anchored in reaches below Rochester Bridge. Designed by the King's Chief Engineer, Sir Bernard de Gomme, the fort was equipped with two tiers of guns stepped into the steep river bank and was protected on all three landward sides by a rectangular earthwork rampart, together with a ditch on its northern, western and part of its eastern flanks. Inside, there was a defensible tower or redoubt and a master gunner's house.

The fort was never actively engaged and fell into decline from the first part of the 18th century - its powerful armament of some 44 guns in 1698 having been reduced to just one 6-pdr by 1766. Nevertheless, a master gunner occupied the fort until 1818, when the Board of Ordnance put it up for lease. Finally sold at the end of the 19th century, it is now privately owned by the Brice Family Estate, where it lies within an area of thick



deciduous woodland. The majority of the fort's outline is still visible, though the earthworks and brick structures are in a seriously eroded condition, following years of neglect, vandalism and tidal action.

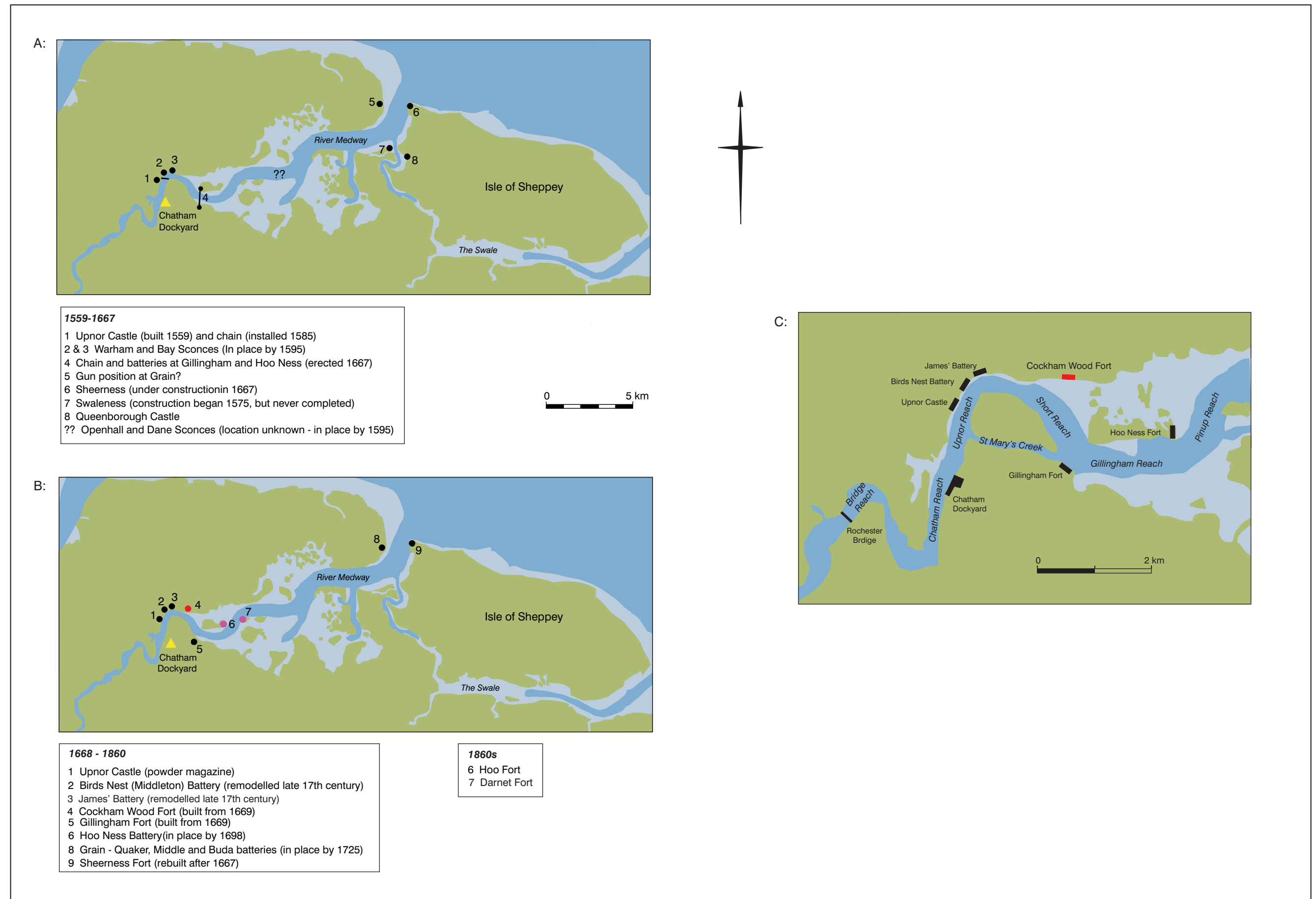


Figure 2
The Defence of the River Medway A: 1559 - 1667; B: 1668 - 1860s; C: Detail of the upper reaches of the river



2. BACKGROUND HISTORY: THE DEFENCE OF THE MEDWAY

The construction of Cockham Wood Fort, together with Gillingham Fort was a result of the Dutch raid on the Medway in 1667. Since 1665 England had been fighting what was essentially a commercial war with the Dutch. Initially the naval engagements had gone England's way and after a victorious sea battle in 1667, the government, feeling there was little more to fear from the Dutch, put the fleet into reserve. It considered that in the unlikely event of further Dutch attacks, existing coastal fortifications could be relied upon for protection. Later that year, against all expectations, the Dutch put to sea and appeared in the Thames as far up as Lower Hope, three miles to the east of Gravesend, before switching attack to the Medway.

The Medway was of prime importance, housing the major naval dockyard at Chatham, and providing an important base for naval vessels which were moored in the reaches between Rochester and Chatham. Since 1559, modest artillery defences had been located on the river, but these proved wholly ineffective at repelling the Dutch in 1667 (Fig 2A). The preliminary attack captured and burnt the unfinished fort at Sheerness. After this the Dutch made their way upstream, negotiating attempts to block the channel and cutting through a hastily erected chain boom between the batteries at Hoo Ness and Gillingham. The final line of defence at Upnor Castle also proved ineffective, being insufficiently supplied for a prolonged defensive action and also placed too far upstream to protect the increased anchorage at Chatham. The end result was a humiliating defeat for the English with several ships destroyed and the flagship, the Royal Charles, taken as a prize. It is likely that if the attack had been pressed more vigorously additional ships - and perhaps the dockyard itself - could have been destroyed (Saunders 1989, 84).

The diarist John Evelyn visited Chatham soon afterwards and described the scene:

'so on the 28, I went to Chattham and thence to view not onely what mischiefe the Dutch had don....a dreadful spectacle as ever any English men and a dishonour never to be wiped off. Those who advised his Majestie to prepare no fleete this spring, deserv'd I know not what

Here in the river of Chattham, just before the town lay the carkasse of the Lond the Royal Oak, the James &c yet smoking'

(de Beer 200, 486-87).

Charles II stimulated a revision of coastal fortifications, on a scale not seen since Henry VIII more than a century before (Saunders 1989, 83). The man in charge of the new



programme of defence was Sir Bernard de Gomme, Chief Engineer from 1661 until his death in 1685. De Gomme felt that the key to an effective defence of the Medway was the building of additional fortifications, placed where artillery could be used to the best advantage, protecting both the river approaches as well as the naval anchorage and shore facilities.

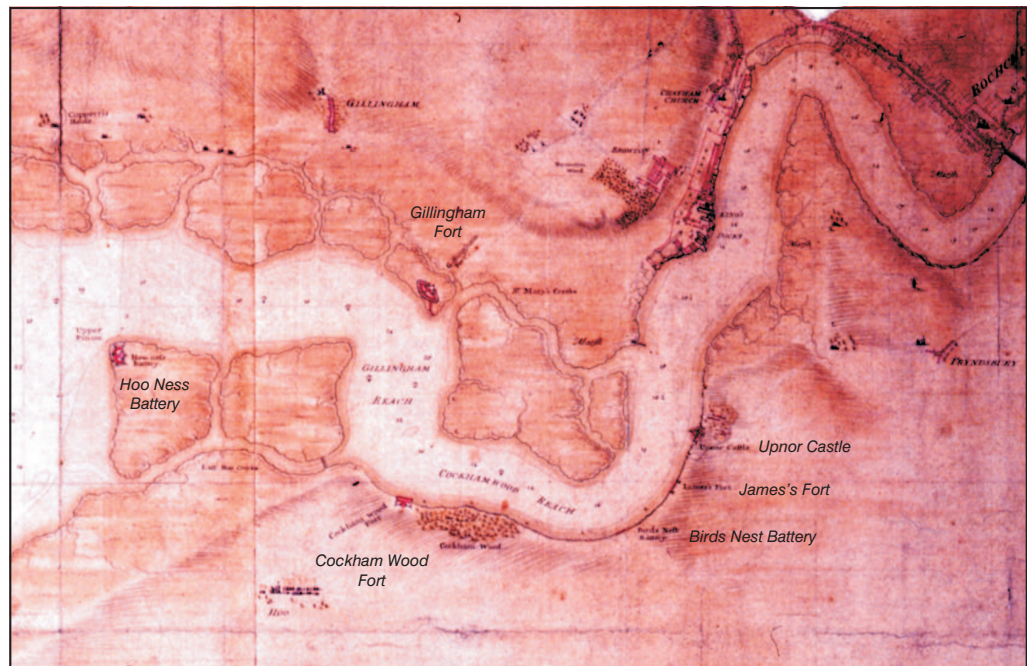
The new defences consisted of a fort at Garrison Point, at the mouth of the river enclosing the dockyard at Sheerness, and two forts at Cockham Wood and Gillingham, downstream from Upnor Castle which was converted to a powder magazine (Fig 2B). Situated on the north and south banks respectively, Cockham Wood and Gillingham were designed to protect the close approaches to Chatham Dockyard and its associated moorings. The diamond-shaped Gillingham Fort was situated on the south bank, at the entrance of St Mary's Creek. It guarded the entrance to the creek, but, more importantly, handled the long range defence of the main channel approaches to the anchorage. Its field of fire covered Gillingham Reach, towards the Mussell Bank, a treacherous area of low water where the river turned into Pinup Reach. Its location enabled direct bombardment of ships which could only have returned minimal fire until the last minute when the channel allowed them to engage fully their armament. The engagement would have been continued from Cockham Wood Fort on the north bank, as ships passed Gillingham Fort into Short Reach (Fig 2C). As with Gillingham, ships approaching Cockham Wood Fort could only turn broadside on at the very last minute, while having to endure the fire of the whole battery from long range (Smith 1993, 58).

Additional defences comprised two smaller gun batteries, named Birds Nest (Middleton) and James', which were constructed between Upnor and Cockham Wood (possibly on the sites of the former Warham and Bay Sconces). These had been constructed by 1672 when payments were recorded for repairs to both (PRO: WO/51/12). It may be they were hastily erected after the Dutch raid and then later in the 17th century remodelled into permanent batteries. By 1698 a third battery, on Hoo Ness some 1.9km downstream of Gillingham Fort, had also been built. The latter greatly improved the forward defence of the anchorage and had a field of fire extending 1.6km down Pinup Reach, together with Cockham Wood and Gillingham enabling artillery defence of some 4.8km of the river (Smith 1993, 65). All these fortifications are illustrated on several 18th - century survey plans of the Medway (PRO: MPH/1/76 parts 1 & 2, MR/1/959; MPH/1/50; MPH/1/60; ADM/40/10; Fig 3). During the War of the Grand Alliance (1689-1697), three new batteries; Quaker, Middle and Buda, were built at Grain against the threat of a French attack on the river mouth.

In the 1860s the forts at Gillingham and Cockham Wood were effectively replaced by two granite-faced casemated forts, on low islands further down stream at Darnet and Hoo (Fig 2C; Saunders 1997, 52).



Figure 3
Extract of an early
18th-century plan of the
River Medway and its
associated defences.
Text in black is added by
the author (PRO:
MPHH/1/76 part 2, by
kind permission of the
Public Record Office)



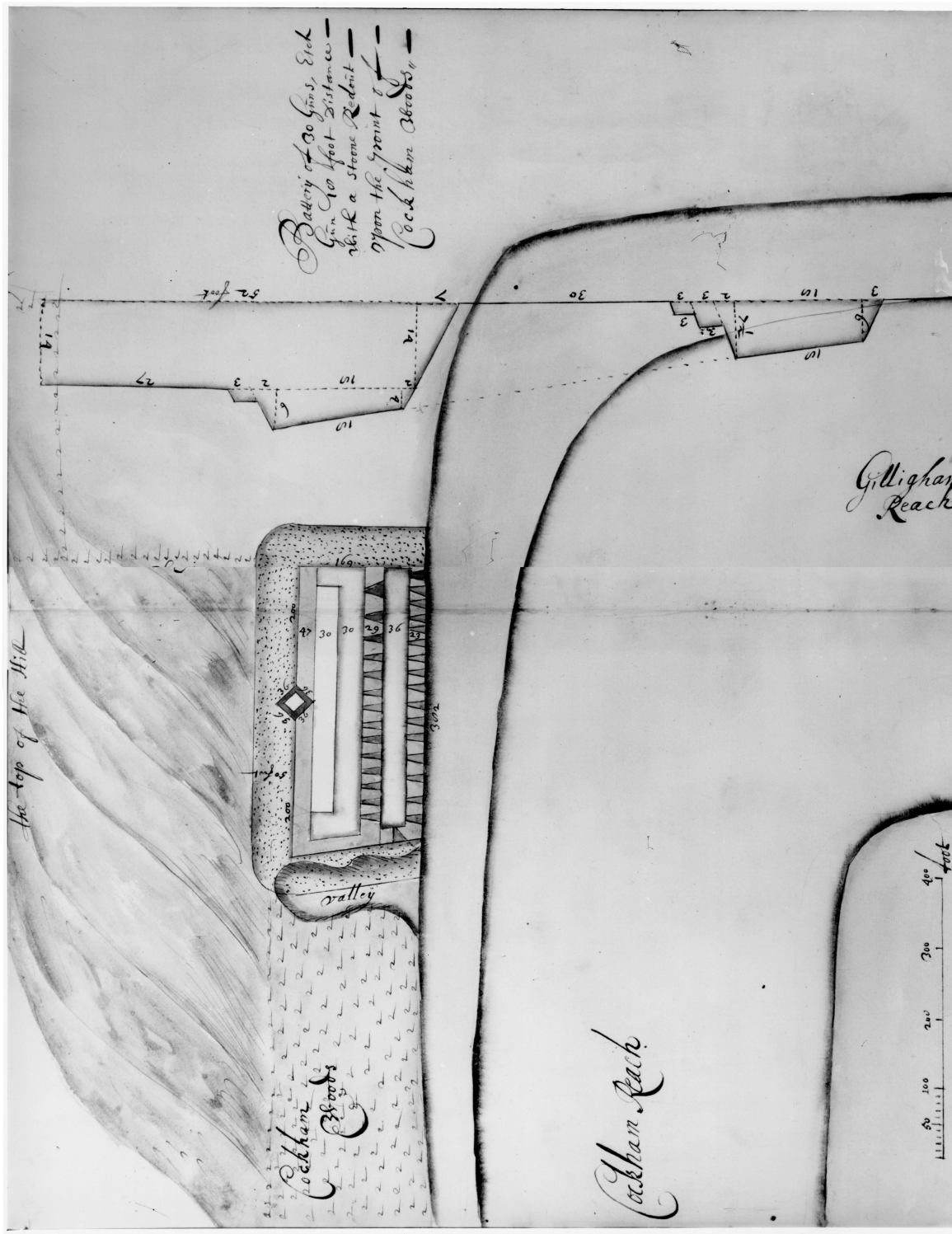


Figure 4
One of De Gomme's proposal plans for Cockham Wood Fort, dated 1669 (NMM: GOM/218:8/34, © National Maritime Museum, London)

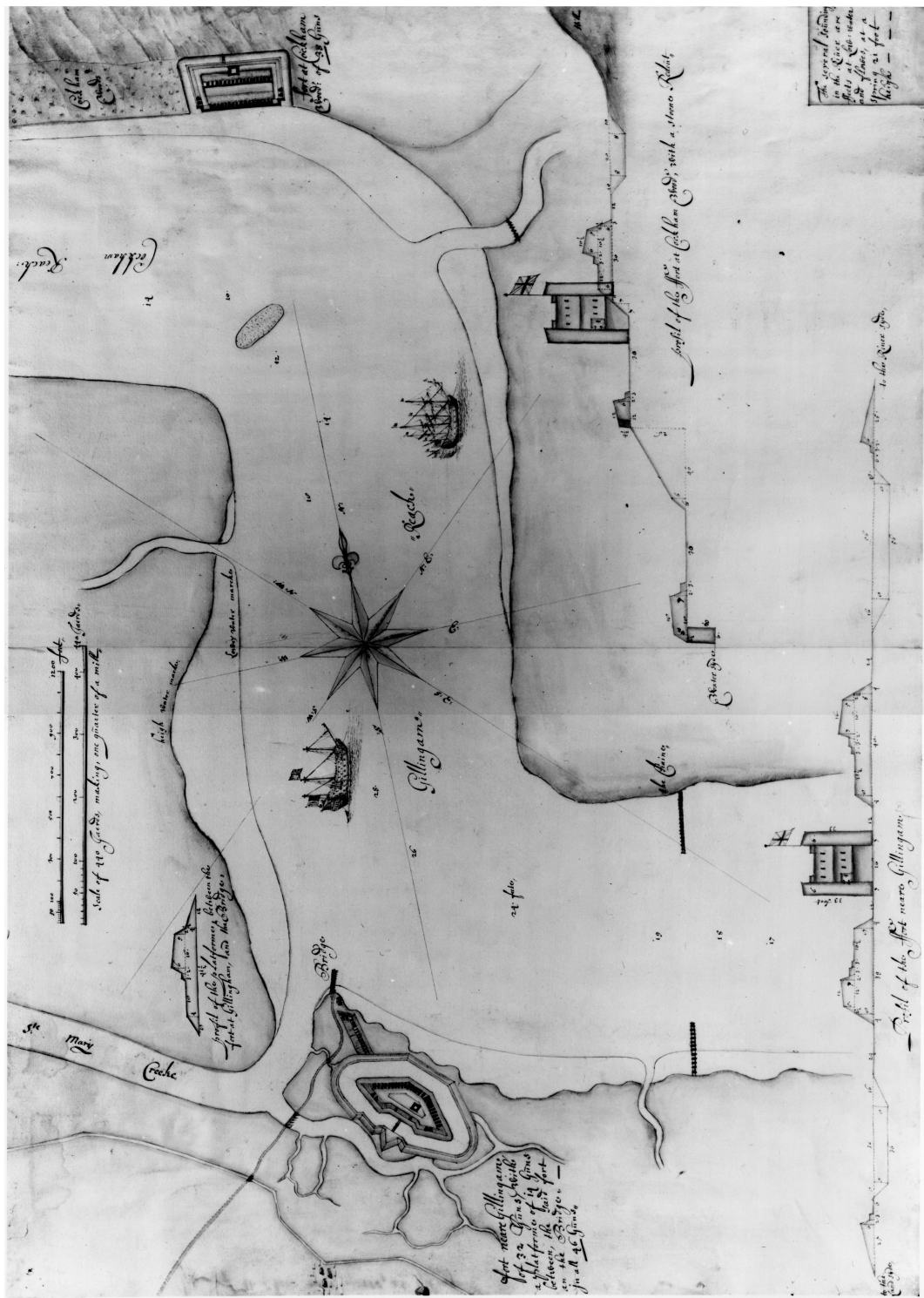


Figure 5
De Gomme's proposals for Gillingham and Cockham Wood Forts, dated 1669 (NMM: GOM/218:8/31, © National Maritime Museum, London)



3. THE HISTORY OF COCKHAM WOOD FORT

The following text is based heavily upon the documentary research carried out on the fort by members of the Kent Defence Research Group and the New Tavern Fort Project during 1992-1993 (Smith 1993).

The construction of the fort

Construction of Cockham Wood Fort took 6 years, with documents recording works between 1669 and 1675. In February 1669 de Gomme, who had completed a survey of the river between Rochester Bridge and Mussell Bank, produced initial drafts for both Cockham Wood and Gillingham Forts. The former was described on one plan as a *'battery of 30 guns, each gun 10 foot distances with a stone redoubt upon the part of Cockham Woods'* (NMM: GOM/218:8/34), though on others it was equipped with either 38 or 39 guns (NMM: GOM/218:8/31 & 35). These show Cockham Wood essentially as it was constructed - adapted to the form of the hillside, enclosed on its landward sides by a rampart and ditch and equipped with two gun lines, a lower tier on the edge of the river and a second tier higher up. Within the fort there was a redoubt or tower, located at the centre of the rear rampart, depicted as either a square or diamond shape in plan. Similar variety is also seen in the depiction of the revetment of the lower gun line, on one plan it is shown to be battered whilst on another it has near vertical masonry with sloped merlons above (Figs 4 & 5).

In March 1669 de Gomme placed instructions for the building work, appointing his Assistant Surveyor at the Ordnance, Jonas Moore and Matthew Bayley, Governor of Upnor Castle, as jointly responsible for *'managing and looking after the building of two new batteries or redoubts at Gillingham and Cockham Wood'* (PRO: WO/47/19a). The line of both forts was staked out by de Gomme between 30th March and 2nd April and work on their construction began soon after (PRO: WO/51/10; WO/48/9).

It would appear that the fort was operational, in some form, from an early stage. In August 1669 Captain Valentine Pine was ordered to both Cockham Wood and Gillingham to plant guns (PRO: WO/51/10). The gun lines at Cockham Wood were to be equipped with 16 demi-cannon and 19 culverins, and there were to be 2 sakers placed on top of the redoubt (PRO: WO/47/19a/447). The majority of these guns are likely to have been installed subsequently, perhaps in 1670 when Pine had returned to the fort to lay gun platforms (PRO: WO 51/12). Even if the fort was operational by 1670, it would appear that the redoubt was not completed until 1671 (PRO: WO/396/29).



The earliest plan of the completed fort dates to 1698 (Fig 6). This notes that the majority of the fort was of earth and plank construction, the only brick structures being the lower gun line, the redoubt and the gunner's house. The plan shows the north and west sides of the fort defined by a ditch, behind which and enclosing all three land-ward sides stood a rampart which ran down to bastions situated on either end of the lower gun line. The eastern rampart was broken by an entrance located below the lower gun line. Inside, the only two structures shown are a bastion-shaped redoubt set into the middle of the north rampart and the gunner's house in the north-east angle (BL: Kings 43, ff 35-36).

The 1698 survey also lists the guns at the fort, with 19 culverin and 2 x 6-pdrs on the upper gun line and 16 demi-canon and 3 demi-culverin on the lower gun line (*ibid*). Colonel Brown's survey of guns in British Forts in 1698-1700 adds 4 sakers to the list, which are likely to have been located on the roof of the redoubt (PRO: WO/55/1736). This was a powerful armament, the demi-canon being among the heaviest guns generally in use on English coastal defence batteries, firing a 12.2 kg (27 lbs) shot to a maximum range of 1.6km. The culverin, demi-culverin and saker were lighter weapons, firing 6.8, 4 and 2.2 kg (15, 9 and 5 lbs) shot respectively (Smith 1993, 64).

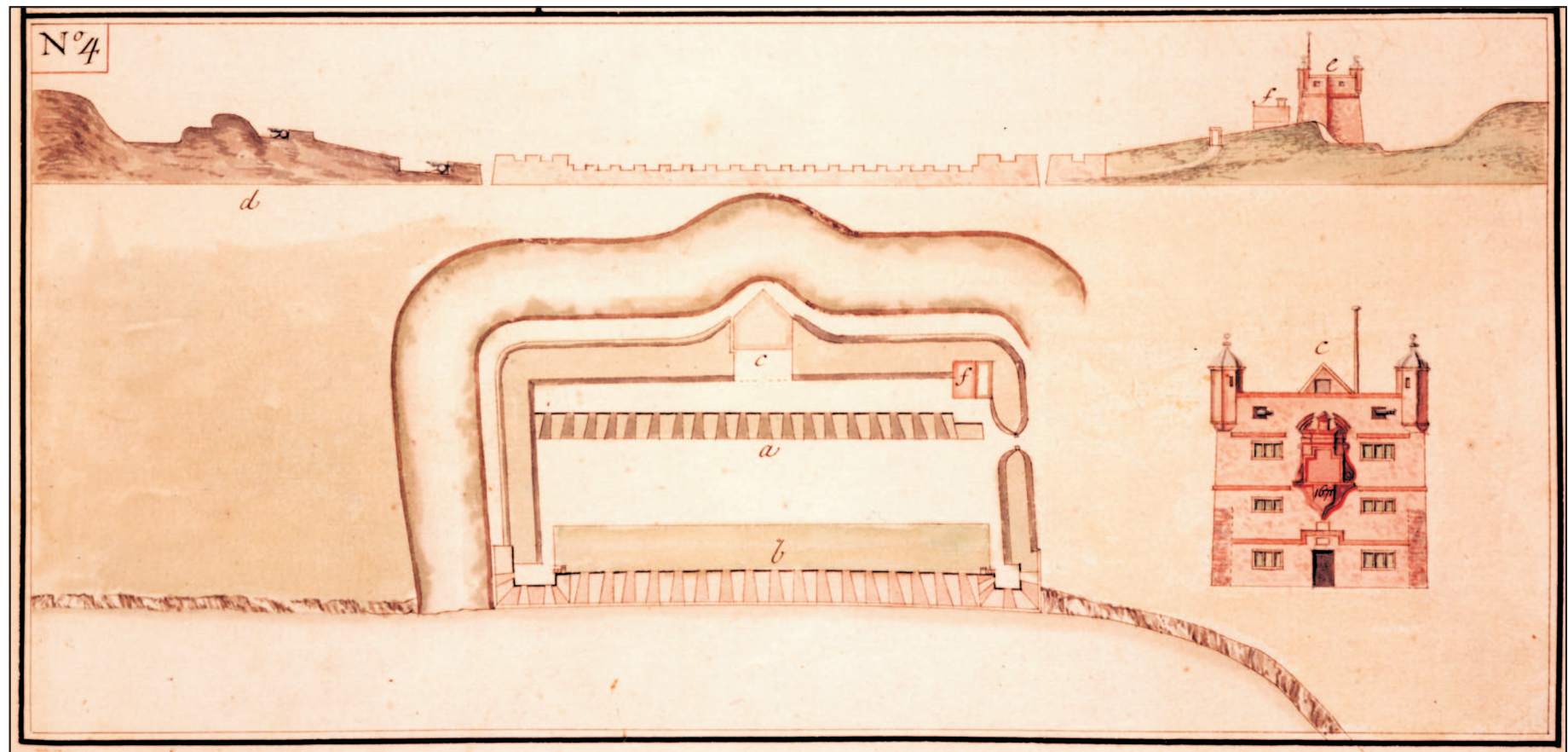


Figure 6
Plan of Cockham Wood Fort, dated 1698 (BL: Kings 43, folio 36, by kind permission of the British Library)



The late 17th and 18th - century fort

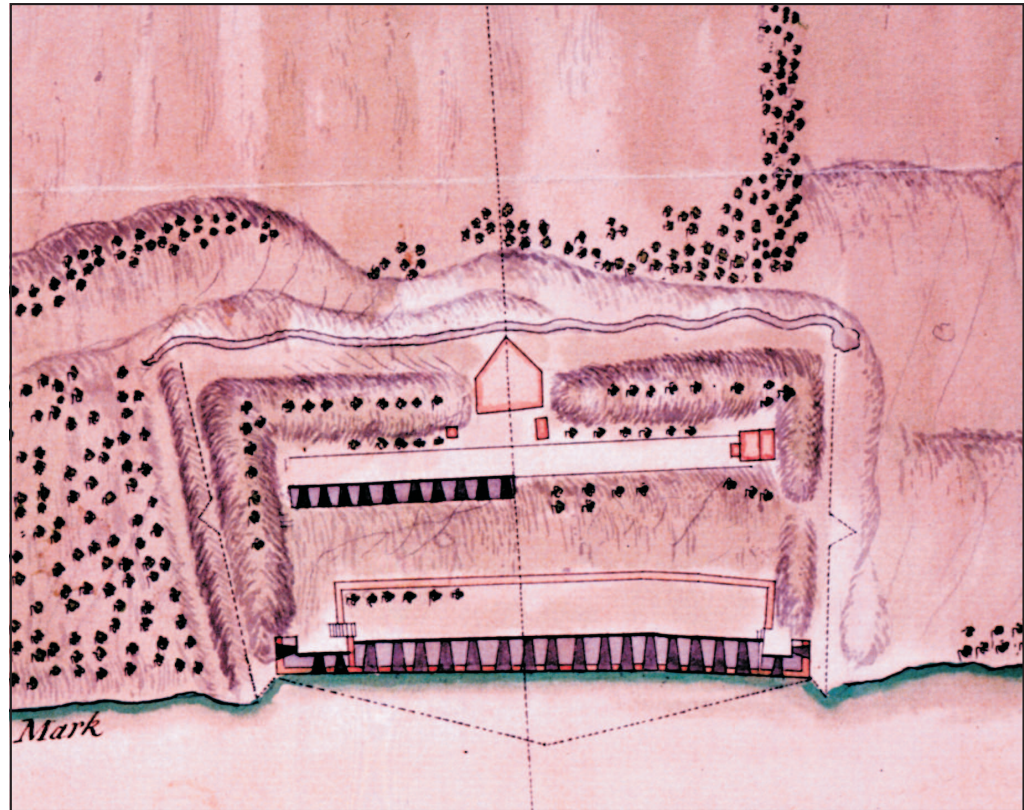


Figure 7
*Extract from a plan
of Cockham Wood
Fort, dated 1742
(PRO:
MPHH/1/706
(part 6), by kind
permission of the
Public Record
Office)*

Additions and repairs to the fort are recorded throughout the late 17th and 18th centuries. In 1690, boarding to the sides of the embrasures in the lower gun platform became necessary and in 1693, the laying or relaying of stone platforms was called for (PRO: WO/49/115). Added to these, an estimate of 1694 indicated the need for more extensive work, including the rebuilding of the embrasures on both the upper and lower gun lines, the need for large amounts of planking on the lower gun line as well as palisade work on the land side of the fort. The windows of the powder magazine were also to be bricked up. This presumably refers to the basement of the redoubt, however a reference of 1757 does refer to there being bricked up windows in the master gunner's house (PRO: WO/55/2276). Outside the fort, a line of palisades was to be set in the river bank twenty feet (6.1m) out from the wall of the lower gun line, to defend the shore against river-borne assault but also to protect the lower gun line from the tidal action of the Medway (PRO: WO/49/117).

Operationally, a caretaker garrison would have been permanently stationed at the fort, augmented during periods of emergency. In 1715, this comprised of a master gunner and four ordinary gunners, but by 1728 there was only the master gunner and one ordinary



gunner (Hogg 1963 179; PRO: WO/54/200). In 1748 there was a master gunner alone (Notes held at Upnor Castle). This reduction relates directly to a general programme of disarmament following the Treaty of Utrecht in 1713, when the guns at several of the Medway forts were reduced. At first, the 44 guns at Cockham Wood remained untouched but by 1725 had been reduced to 16 x 42-pdrs and a single saker (BL Stowe MS 482). However, this was still a very powerful armament.

In 1715, following the Scottish rebellion and the disarray of the forts in the North, the Duke of Marlborough ordered complete surveys and reports of the fortifications, barracks and storehouses in the kingdom. Engineers were appointed to carry out the review, with the Medway falling to Captain John Greül (Saunders 1989, 117). The written report of the survey for Cockham Wood has not survived, but the plan dated to 1742 illustrates major change since 1698, with trees growing on the ramparts and the eastern half of the upper gun line no longer in use (Fig 7). It does, however, include two small structures south of the redoubt, not shown on previous plans, as well as the line of the tidal palisades forming a shallow salient. Pecked lines along what appears to be either

the base of the west ditch or the berm between the west ditch and rampart, as well as along the east side of the fort, each containing a central salient, probably represent palisades. A drain ran along the bottom of the gorge ditch, terminating in a small pond at its east end (PRO: MPH/1/703 part 6). This is the only accurate survey of the fort in the 18th century, despite its stylistic representation on several plans of the Medway (PRO: MPH/1/76 parts 1 & 2, MR/1.959; MPH/1/50; MPH/1/60; ADM /40/10; Fig 8).



Figure 8
Cockham Wood Fort as represented on an early 18th century plan of the River Medway (PRO: MPH/1/76 part 2, by kind permission of the Public Record Office)

In 1757 Captain Desmaretz and Mr Payne visited the fort and reported to the Board of Ordnance that maintenance work was required on the gunners house:

'The two windows on the back of the gunners house which are bricked up, the timber frames must be taken way and made good with brickwork. New weather boarding the stair head over the stair case is much wanted. The same to be lashed and plastered within. All the window frames of the house to be pointed with lime and hair and the worst



frame made good. To throw the main water from the wells at the back of the house, by lowering the ground in a sloping manner. The rest as taken notice of by Mr Payne'

(PRO: WO/55/2276)

Accounts for the end of that year reveal that repairs *were* made costing a total of £18.15.9. A further £2.10.0 was also set aside for works in 1758 (this also included Hoo Ness Fort) for 'yearly repairs to gunners barracks' (*ibid*). No mention is made as to the condition of the rest of the fort, nor was money set aside for its maintenance. The fact that by 1766 there were 'scarcely any remains except for the barracks, which at each place want some little repairs' and only a single 6-pdr gun at the fort, suggests that the fort was no longer operational and any money spent was purely for the comfort of the master gunner who acted as the caretaker of the property (PRO: SP/41/39). By 1779 the fort was no-longer recognised as a defensive position, being omitted from a review of the Medway defences (PRO: WO/55/2269). It was fully disarmed by 1797 when Hasted described 'all the guns dismantled and thrown on the ground, the shot etc lying in the Master Gunners House nearby' (1797, 537).

The fort in the 19th and 20th centuries

A master gunner remained living at the fort until 1818. At some point prior to 1806 and likely in the 1790s, a new master gunner's house was built:

'The gunners house was built about 5 years ago, near the site of the old one, over which was an inscription C. 11.R.1671 [Charles II, King, 1671]'

(PRO TS 21/26, observation made in c1800)

In 1806 it was occupied by the master gunner, Robert Mills and also an invalid gunner, the former enjoying the use of the garden land and wood which had developed in the fort's interior (RE Letter Books (Chatham) Sept 1805-Sept 1807).

That the fort had been left to decline in the later 18th century became apparent at the turn of the 19th century. At this date, the lack of interest paid to the fort by the Board of Ordnance led to problems concerning the actual boundaries of the site (RE Letter Books (Chatham) May 1797-Sept 1805 & Sept 1805-Sept 1807). In c1800 a member of the Board of Ordnance, who visited the fort to try and resolve the issue, produced a sketch plan indicating the present and supposed original boundaries (Fig 9):

'There are no purchases of land, public or private that I can meet with, at...Cockham Wood Fort. It stands on the edge of the beach about one and a quarter miles below Upnor



Castle, on the same side of the river, occupying almost the whole front of a quadrangle which slopes upwards, at the top is the gunners house and offices. There are appearances however of there having been formerly a much larger space attached to it, in all directions except the front, such as hollow-ways, remains of batteries. But all these parts have been so long in the uninterrupted possession of the neighbouring estate, the present Lord Jessey and of his ancestors, as to preclude all hope of succeeding in any attempt to reclaim them. Robert Mills the present Master Gunner has lived in the fort 29 years, during all which time no bit of ownership has been exercised by the offices of the crown. The tenants of the present Lord Jessey have always cut down wood, underwood etc in Cockham Wood.....The fort so called near the waters edge is in a ruinous state, parts of the walls is fallen in, and there is no single gun in the place'

(PRO: TS/21/26)

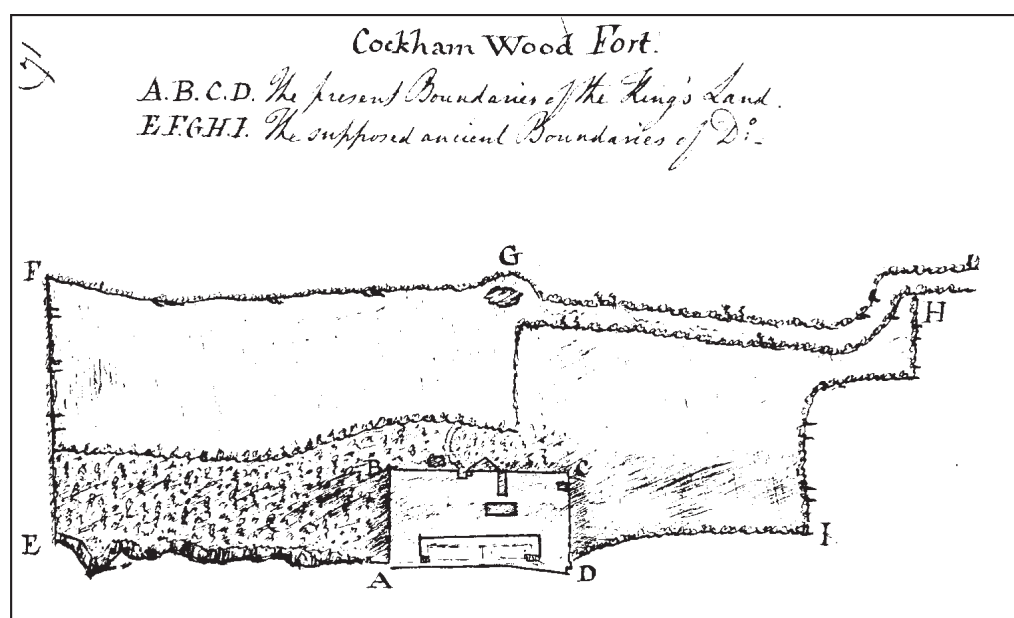


Figure 9
Sketch plan, dated c1800 indicating the present and supposed original boundaries of Cockham Wood Fort (PRO: TS/21/26, by kind permission of the Public Record Office)

In 1818 both the forts at Cockham Wood and Gillingham were offered as leasehold by auction. David Gardner of Upnor became the first tenant at Cockham Wood. It appears that some decision had been reached about the delineation of the boundaries, which had been marked on 54 trees by the Royal Engineers Clerk of Works (RE Letter Books (Chatham) Jan 1816-Dec 1818). Cockham Wood was to be let for 7 years at an annual rent of £25, with parochial and King's taxes to be paid by the Board of Ordnance together with the cost of repairs. The fort could, however, be surrendered back to the crown if required in a period of emergency. The tenants had the right to the furze, bramble and brushwood on the premises (PRO: WO/44/141). It would appear that the first tenant did not remain at the fort for long, as in 1819 it was leased to William Hodge. Hodge remained at the fort for 13 years and during his tenancy constructed a kitchen and dairy on the site, the location of which is unclear (RE Letter Books (Chatham) Sept 1830- July 1833).



The fort remained in Government ownership until the late 19th century, despite offers to buy it. In 1825 the Board of Ordnance, somewhat optimistically, felt the fort still had military potential but more realistically, considered it suitable for providing brick-earth in the event of the construction of further fortifications at Sheerness (RE Letter Books (Chatham) Dec 1824-1826). Despite its apparent potential they continued to make no effort with its upkeep. When William Nicholson, the local landowner, took over the tenancy from William Hodge in 1832, there were problems with subsidence on the master gunner's house. The Board of Ordnance refused to accept responsibility for repairs, as did the tenant, which resulted in its demolition in the later 1830s (*ibid* and PRO: WO/44/141 and 143). In 1837, the ground within the fort was described as garden and coarse pasture land (RE Letter Books (Chatham) Aug 1835-Oct 1837) and as orchard in the 1840 tithe (Smith 1993, 69). In 1843 William Nicholson failed in his offer to buy the fort, adding

'In making this request I would beg to observe that the house and buildings which were on the land were some years since pulled down and the materials sold, and that the small remains of the old fort are rapidly decaying and falling down, in short it has become a mere piece of waste ground and I cannot conceive that it should ever again be of any use to the public service'

(RE letter Books (Chatham) Sep 1842-Apr 1844).

It was not until the construction of Hoo and Darnet forts in the 1860s, that both Cockham Wood and Gillingham were entirely redundant. Gillingham was demolished under the extension of Chatham Dockyard and Cockham Wood sold to a private purchaser. By the end of the century it was owned by G F Armytage who leased the land to W L Wylie (Smith 1993, 70). Finally, in the early 20th century it came into the ownership of the present owners, the Brice Family. In 1963 the fort became a Scheduled Ancient Monument.

Throughout the 20th century the condition of the fort has continued to deteriorate, with the most noticeable effects of neglect and vandalism seen on the lower gun line. Only the foundations of the east bastion survive; whilst a large section of facing stones from the west bastion collapsed in 1973 (Smith 1993, 70). Brick and worked stone from this gun line can be seen lying on the foreshore.

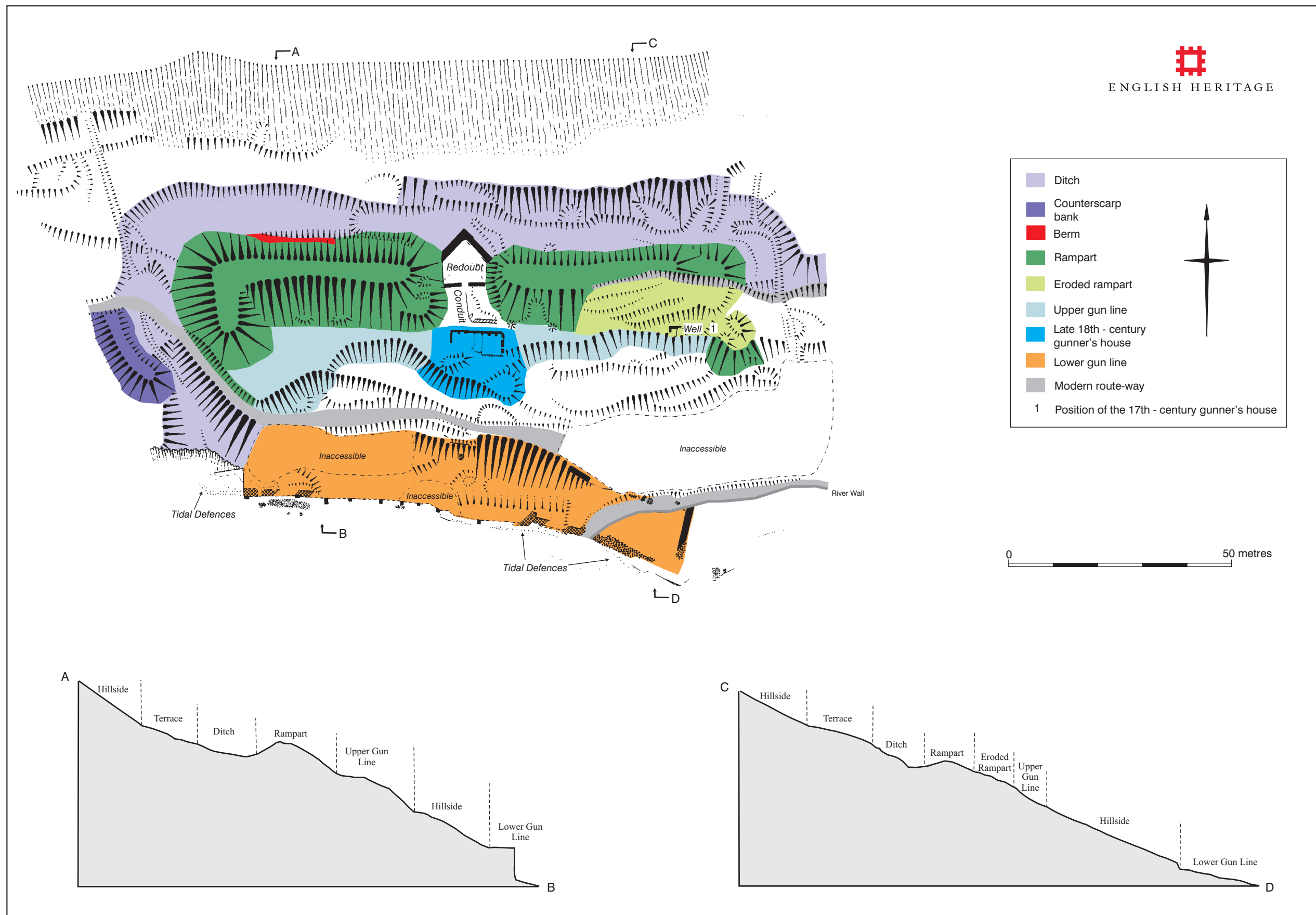


Figure 10
Interpretative plan and sections of Cockham Wood Fort



4. DESCRIPTION OF THE EARTHWORKS AND STRUCTURES

In the following description words and letters that appear **in bold** are shown on the figures indicated at the beginning of each section. Other figure references of relevance appear in the body of the text.

Cockham Wood Fort is situated on a steep slope on the north bank of the River Medway. It has a stepped profile constructed by terracing of the hillside to create levels for the gun lines and buildings. It is roughly rectangular in plan, covering an area of 1.12ha (2.77a), and defined on all three landward sides by an earthwork rampart with an outer ditch on its western, northern and part of its eastern flanks. Inside there were two tiers of guns - the upper and lower gun lines - together with a redoubt situated in the middle of the north rampart and a gunner's house in the north-east angle next to the fort well. A second gunner's house, on the upper gun line to the south of the redoubt, was built at end of the 18th century as a replacement to the original. The redoubt, gunner's house and the revetment of the lower gun line were all of brick and stone construction with the remaining features constructed from earth and timber. A large part of the fort is in a seriously eroded condition, with many scarps representing the gradual collapse and slippage towards the Medway (Figs 10 & 30).

The ditch (Fig 11)

The ditch protected the fort along the northern side or gorge, the western flank and part of the eastern flank. Though much silted, its outline is still visible, with the southern half of the western flank particularly well preserved, at 1.7m deep and 16m wide. The whole of the western flank re-used the line of a natural gully as indicated on one of de Gomme's drafts (NMM: GOM/218:8/34; Fig 4). This flank was also given extra protection by a counterscarp bank, **a**, located where the gradient was at its most gentle. This bank ends some 11m from the river cliff, at a point where the natural slope steepens, as marked by a step, **b**, in the ditch bottom. The counterscarp bank is most prominent on its western face, standing 1.9m high in comparison to its eastern face of 0.4m. A gap through the northern edge of the bank at **c**, is relatively modern and appears to be a later entrance associated with a path traversing the fort, which can be followed as a terraced way, **d**, on the interior.

The line of the ditch counterscarp, as it curves into the gorge can still be traced, although a drain running down from the field above has cut through it. The gorge ditch was formed by cutting into the natural slope, which runs steeply down from the field above. Outside the ditch, a relatively level terrace, 10m wide, was created to enable access and to control silting of the ditch from the slope above. The gorge ditch is now heavily silted, its counterscarp just 0.7m deep, increasing to 2m east of the redoubt (Fig 12). The 1698 plan

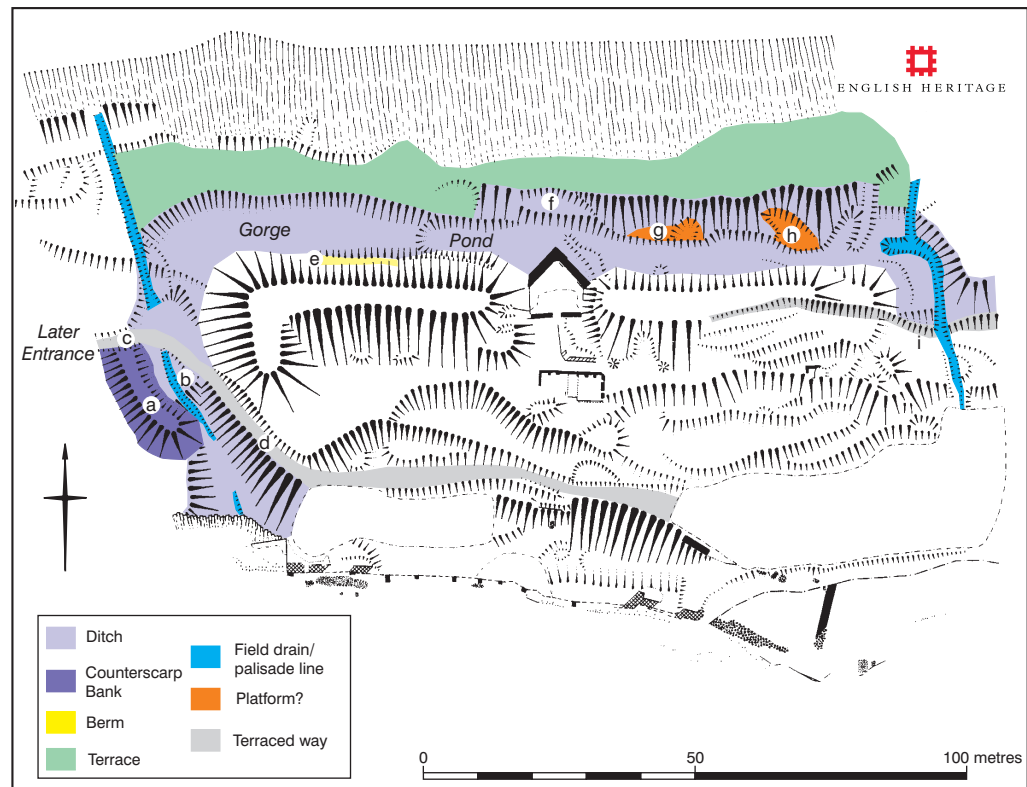


Figure 11
*Interpretative plan
of the ditch
earthworks*

of the fort shows that the line of the ditch was deflected northwards to accommodate the projecting redoubt and that a berm separated the rampart and ditch. Very little of the berm survives but there is a length, some 2m wide, in the southern half of the west ditch at **d**, although this appears to have been adapted as a path way at a later date to allow access through the fort. A second small section is situated along the gorge ditch to the west of the redoubt at **e**. It is difficult to trace the deflection in the ditch around the redoubt, although it may be represented by a curved section at **f** on the counterscarp. In two places to the east of the redoubt, **g** and **h**, the counterscarp has small terraced areas associated with rubble spreads, possibly indicating ruined structures. However, there is no documentary evidence for structures located here, the only mention of additional buildings at the site dates to 1731, when the tenant, William Hodge, referred to his construction of a kitchen and dairy (RE Letter Books (Chatham) Sept 1830-July 1833).

A field drain cuts the north-east angle of the ditch as it curves to form the 15m-long east ditch. At its terminus the counterscarp turns to the east, thus appearing to form a natural route to the fort, as indicated on the 1742 plan. Whether this was an original approach to the fort is unclear but the plan of 1698 suggests that it ran along the river edge, with the entrance lying further to the south. However, a well defined scarp **i**, crossing the ditch at its terminal and running up over the collapsed remains of the rampart, suggests that after the fort had fallen into disuse, a route was cut through here.



Figure 12
*The gorge ditch
from the west*
(NMR: AA031354)

Two field drains enter the fort ditch at the north-east and north-west angles, draining down the east and west ditches respectively. These appear to follow the same course as the pecked lines shown on the 1742 plan, which suggests a line of palisades. Whilst there appears to be no mention of any such defences in the records, an estimate dating to 1694 does suggest palisade work on the land side of the fort (PRO: WO/49/117). By 1742, these defences appear to have been redundant, as there is no continuation along the gorge ditch. Instead there appears to be a drain along the ditch bottom, which terminated in a small pond at its eastern end. No traces of this survive, the only feature along this stretch being a **pond** - like depression, 0.2m deep, to the west of the redoubt.

The rampart and east entrance (Fig 13)

The rampart survival varies, with the gorge section the best preserved, especially to the west of the redoubt where it stands some 3m high and 20m wide (Fig 14). East of the redoubt, the north face survives, standing 0.9m high along most of its length before dropping to 0.6m as it turns south: the internal face can only be traced for some 20m from the redoubt, east of which a series of scarps represent the collapsed and eroded rampart material.

A prominent section of bank, 22m long and 2.5m high, is all that survives of the western rampart. However, the well formed, rounded terminal does suggest a later alteration, possibly associated with the remodelling of the upper gun line (see below). It is likely that scarp, **a**, which forms part of a later terrace way through the fort, marks the line of the former rampart.

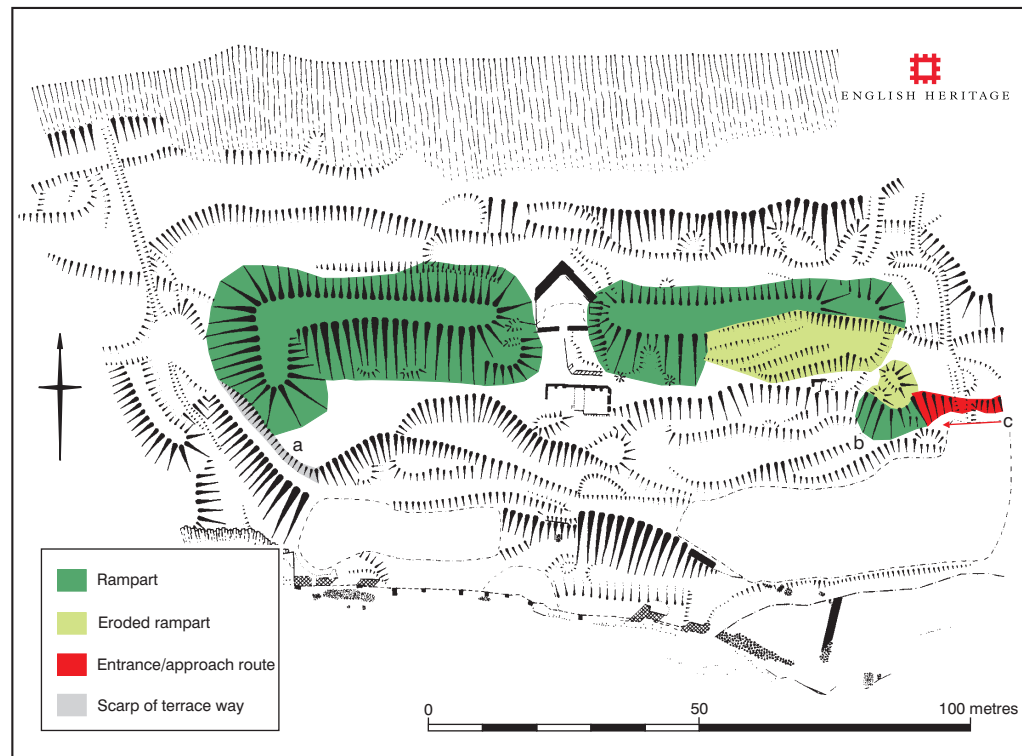


Figure 13
*Interpretative
plan of the
ramparts and the
east entrance*



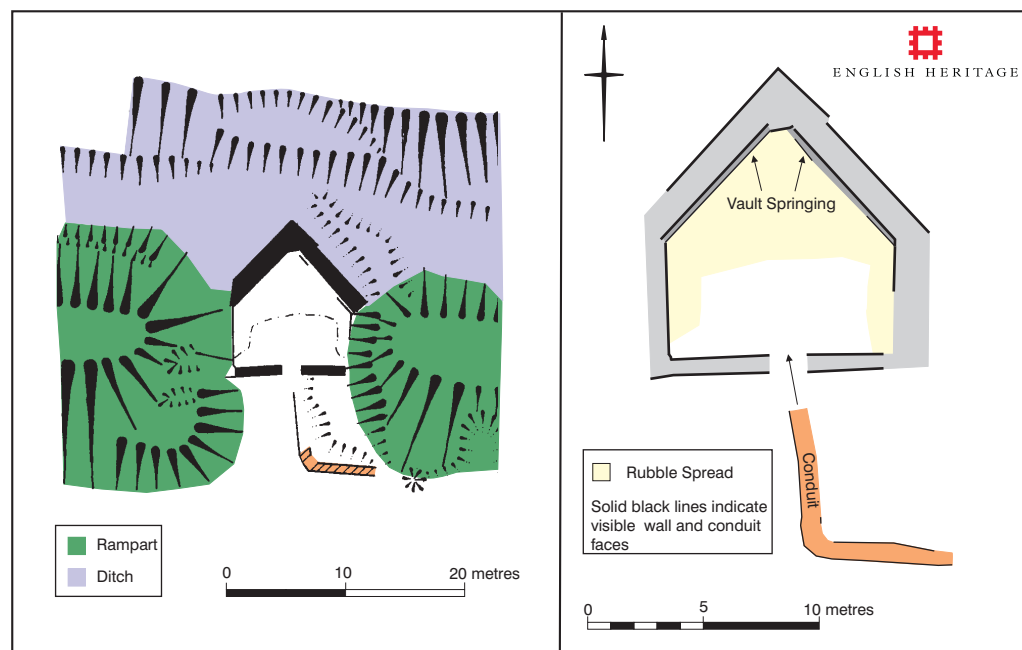
Figure 14
*The gorge rampart
from the north-west.
The water filled
depression is in the
ditch bottom
(NMR: AA031358)*



No definite traces of the east rampart survive, its line being only indicated by the turn of the gorge rampart. Disturbance from the demolition of the original gunner's house, the collapse of the internal face of the north rampart and the later use of the site, have left a series of irregular scarps and mounds in its place. However, the base of a scarp crossing the fort at **b** may represent one side of the original entrance, with scarp **c**, 0.7m high, the terraced approach route along the hillside. The 1698 plan shows the entrance in this position, with the approach route from the south along the river edge.

The redoubt (Fig 15)

Figure 15
Plan of the Redoubt



A strong brick redoubt, in the form of a tower, was located in the centre of the north rampart. The 1698 plan suggests that this structure was constructed after the ramparts had been raised, as part of the rampart directly west of the redoubt had to be cut away to provide the space needed. The redoubt served as an ammunition store, a barrack and mess room, a defensible retreat for the gunners in the event of assault and an ideal observation post for directing fire, as indicated by de Gomme on an elevation of one such structure (NMM: GOM/298:6/8). Much of its outline survives, measuring 9.5m in width and length internally, with the basement level walls of red brick, in English bond, cut into the hillside and standing to a maximum internal height of 1.8m. The redoubt projected bastion-like from the rampart, thereby providing close defensive fire along the entire length of the gorge ditch. The walls are 1.03m thick, with an internal plinth 0.23m wide, representing the springing for the vault of the basement ammunition store. Only the internal faces of the two side-walls are visible, the rest obscured by the slumping of the



rampart terminals above. The south wall survives to a maximum height of 0.25m and was 0.92m thick, with a gap in the centre allowing the passage of a conduit, described below. Very little internal detail survives, as much of the area is covered with rubble, although there is evidence of whitewash on the interior faces of the walls (Fig 16).



Figure 16
*The redoubt from
the south-east*
(NMR:
AA031356)



Figure 17
*Elevation of the
redoubt, dated 1698*
(BL: Kings 43, ff
35-36, by kind
permission of the
British Library)

An elevation of the redoubt, known as a blockhouse, appears with the 1698 plan of the fort (Fig 17). It had three stories totalling 10.4m high, entered at ground level from the interior of the fort. Above the entrance was an ornate coat of arms, inscribed with the completion date of 1671. Payments in 1672 include carving works, which may refer to this coat of arms (PRO: WO/49/218). In c1800 the redoubt was still standing to an extent that the inscription remained visible, but it was finally pulled down with the materials sold in the late 1830s (PRO: TS/21/26; RE Letter Books (Chatham) Sept 1842



– Apr 1844). Windows on the south elevation admitted light to all three stories and there were small embrasures on each face of the parapet for small artillery pieces, in this case thought to be sakers. Access to the roof and these guns was via an internal staircase, which emerged in a small gable-roofed structure. *Guérites* were also located in the three main corners of the tower.

The well and conduit (Fig 18)

In the north-east angle of the fort, a small red brick-lined shaft is thought to be the top of the well that serviced the fort (Fig 19). It is roughly 3m square, the north wall surviving to a depth of 2.4m and a wall thickness of 0.7m. All the wall faces are bowing inwards under the pressure of the surrounding earth. It is likely that this is the well first mentioned in December 1670 (PRO: WO/51/52).

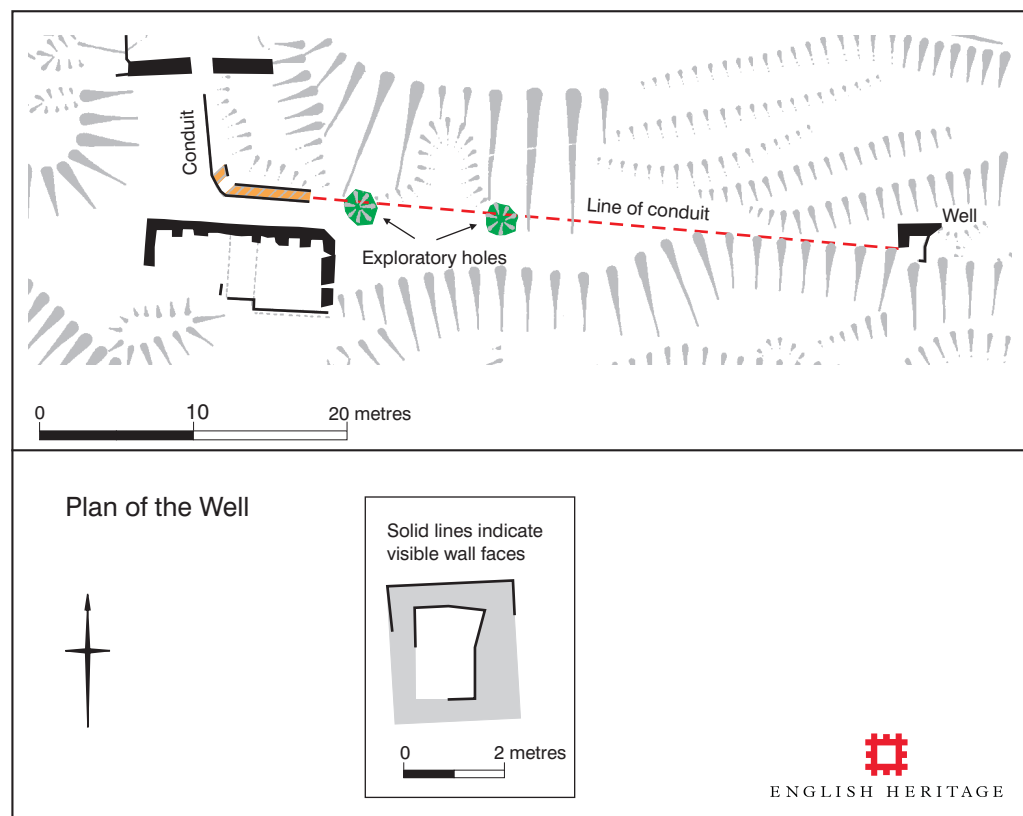


Figure 18
Plans showing the well and conduit

Linked to the well and carrying water to the redoubt was a brick-lined conduit. Part of this feature has been exposed south of the redoubt before turning east towards the well, with additional traces exposed in two exploratory holes at the base of the gorge rampart. The conduit is 0.7m wide, with a semi-circular vault and appears to have been 0.7m deep (Fig 21).



Figure 19
*The well from the
south-west*
(NMR: AA031352)

The 17th- century gunner's house

The original master gunner's house was located in the north east angle of the fort, close to the entrance. The 1698 plan places the structure and attached yard tightly in the angle of the rampart, whereas the plan of 1742 puts it further down the east rampart, closer to the upper gun line and abutting a smaller structure.

There are no visible traces of the house and much of the material may have been re-used in the construction of the late 18th- century gunner's house. The earthworks in this area are the result of disturbance and slippage of the gorge rampart. However, the well may be that small structure abutting the gunner's house on the 18th - century plan, in which case we can suggest its position (Fig 10). The fact that in 1757 mention is made of a well at the back of the house, adds support to this view (PRO: WO/55/2276).



The late 18th- century gunner's house (Fig 20)

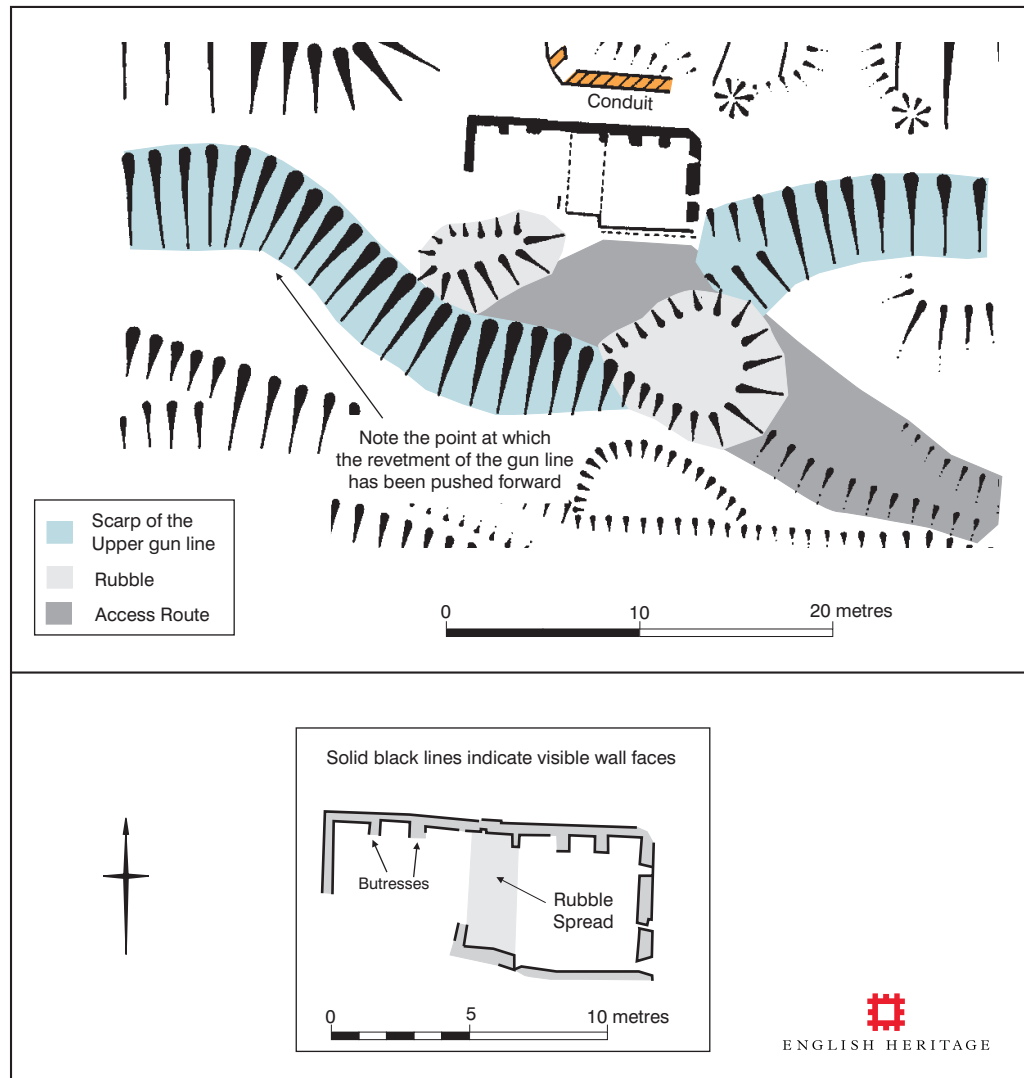


Figure 20
*Plan of the late
18th - century
gunner's house*

To the south of the redoubt and conduit, on the upper gun line, lie the remains of a second gunner's house, constructed in the 1790s, possibly from the materials of the original gunner's house (PRO: TS/21/26). In 1807 it was described as measuring 40 ft x 15 ft (12.3m x 4.6m) (RE Letter Books (Chatham) Sep 1805 – Sep 1807). An elevation of 1837 shows it had two stories, a pitched roof and chimney stacks on the gables. A doorway in the centre of the south face, gave onto two rooms separated by a central passage. The house was demolished late in the 1830s, following subsidence first noted in 1832 and which is likely to have been associated with the gradual collapse of the upper gun line (PRO: WO/44/141 and 143).



Figure 21
*The late 18th -
century gunner's
house from the
north-east. The
brick conduit lies to
the lower right*
(NMR: AA031357)



The house foundations survive, to a maximum height of 0.55m, in red brick some 0.43m thick. The whole north and east walls can be seen, together with sections of those on the south and west. Five '*buttresses*' each 0.5m square, abut the inside of the north wall and are likely to have been the supports for the floor joists. Few other details are visible, although there is some evidence of whitewash on the internal brickwork. A *rubble spread* 1.7m wide runs down the centre of the structure and is likely to represent the collapsed remains of the internal passage, of which a 0.75m length of wall face survives (Fig 21). It is possible to see where the upper gun-line was modified by the addition of material on the south to provide a larger platform for the house, as well as to enable a more gentle approach from the south. This is now largely obscured by two mounds of rubble.

The upper gun line (Fig 22)

The upper gun line lay immediately inside the gorge rampart and originally extended for its full length, with the exception of a small gap between it and the east rampart to allow access to the area behind. It was constructed from earth and timber, as indicated in the 1698 description, and supported lighter weapons than the lower gun line, in the form of culverin and 6-pdrs. Nothing of the parapet or embrasures survive, having eroded into the scarp defining the gun line, which varies in height from 1.3m on the west to 0.5m on the east (Fig 23). Behind this scarp, much of the *terreplein*, some 5m in width, can still be traced on either side of the late 18th - century gunner's house.

The western half of the gun line is better preserved due to the fact that it remained in use over a much longer period: by 1742 the eastern half was redundant and may have been so



from as early as 1725 following a reduction in the fort's armament. The current survey suggests that there was an alteration to the western edge of the gun line, which resulted in the removal of part of the west rampart. The date of this is unknown, although it may have been done to create a gun platform thereby enabling an increased range of fire upstream. Alternatively it may post-date the gun line, with the rampart removed to provide material for the platform of the later gunner's house, or to enable access to the interior of the fort, from the entrance cut through the counterscarp bank to the west.

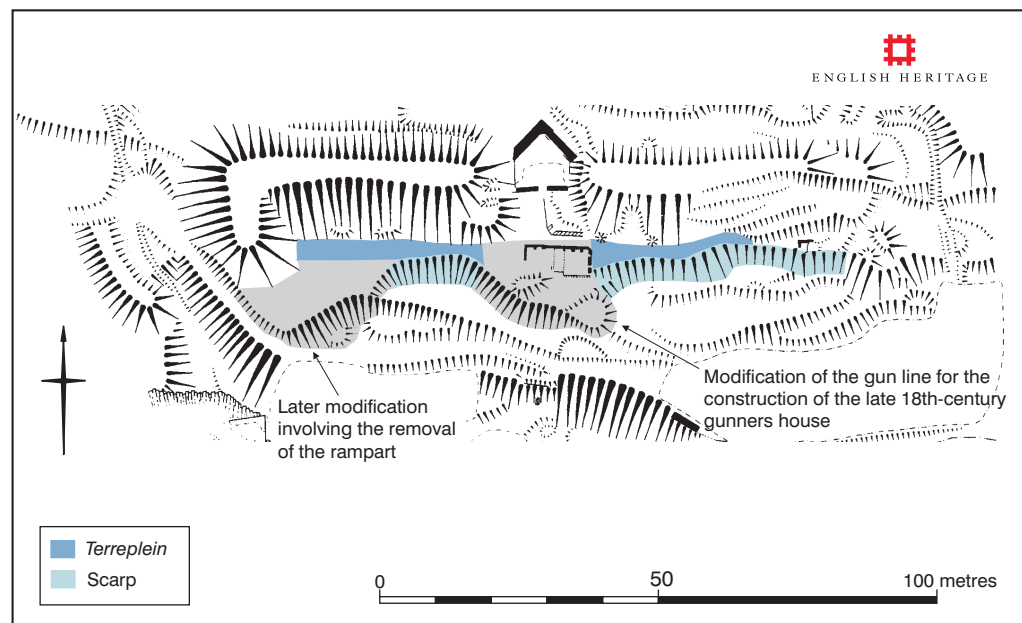


Figure 22
*Interpretative
plan of the upper
gun line*



Figure 23
*The upper gun line
from the east,
showing (at centre)
the flat terreplein
(NMR:
AA031313)*

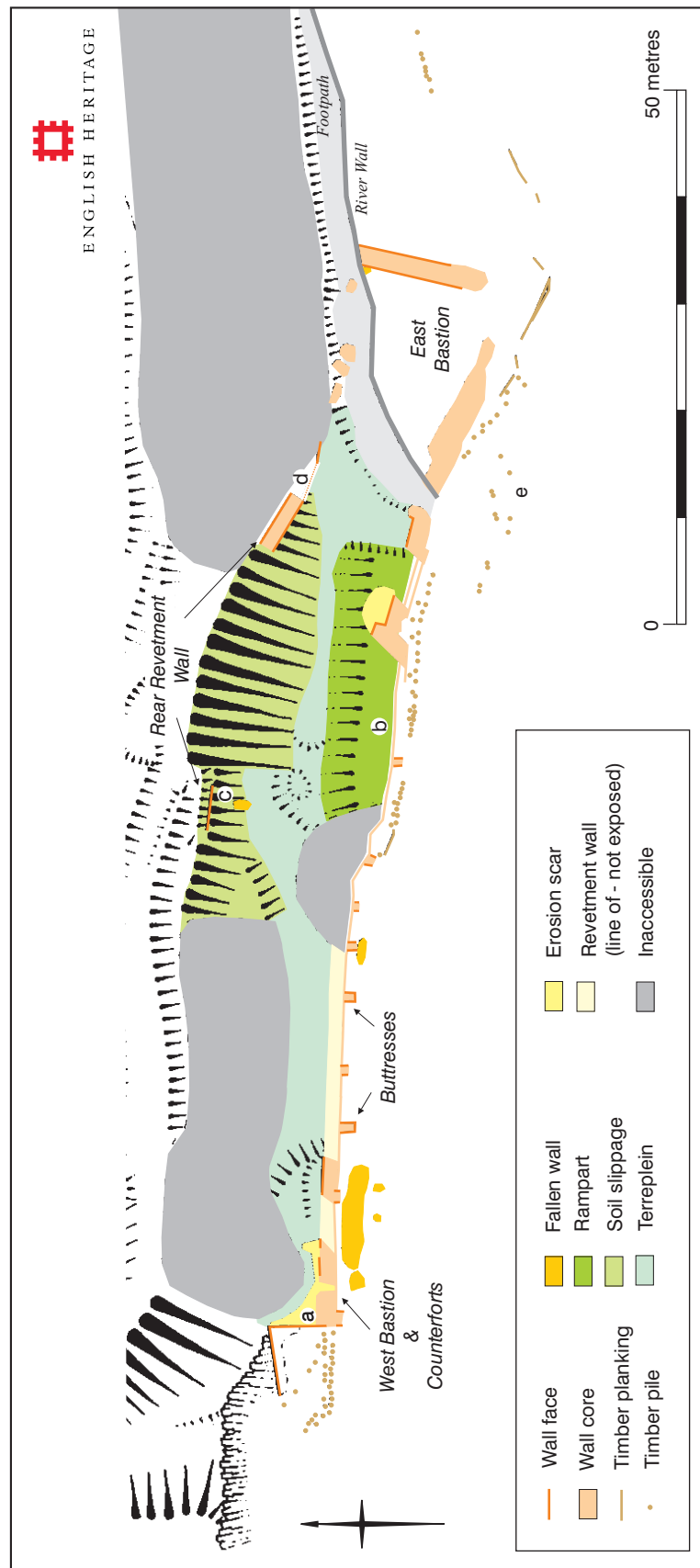


Figure 24
Interpretative plan of the lower gun line and tidal defences



The lower gun line (Fig 24)

The lower gun line supported the heaviest and most powerful guns of the fort. It was located on the river's edge, with a 5m - thick brick revetment holding in place the river bank. This revetment extended for 100m and terminated at either end in a raised bastion, reached by steps from the main *terreplein* level. Behind the revetment the *terreplein*, some 7m wide, was terraced out of the slope and provided with stone gun platforms. The rear of the *terreplein* was defined by a second wall running back from either bastion, which held in place the slope above.



Figure 25
*The revetment wall
of the lower gun
line with the
timber remains of
the tidal defences
in front (NMR:
AA031343)*

Substantial parts of the lower gun line survive, albeit in a deteriorating condition. The red brick revetment, laid in English bond, can still be traced along much of the original frontage. Excluding the west bastion it stands to a maximum height of 2.3m, with no facing bricks surviving, though it is possible to see the back face of the revetment in a few places where areas of overlying soil have been removed. The east bastion is barely visible as a brick foundation at beach level; with the tide washing away much of the earth platform behind (frontispiece). The gun line did not front squarely onto the river for its entire length, as some 40m along the curtain from its western end, the line turns into the river. This has resulted in the location of the eastern corner some 16m further south than its western counterpart. This is confirmed by the 1742 plan and is presumably connected with both the line of fire and the course of the river. Several small buttresses, each c1.1m long by 0.6m wide, are placed at intervals along the line to provide extra support (Fig 25). Pebble concrete lying over the lower brick levels is a result of underpinning carried out at a later date, probably in the 20th century.



Figure 26
*The counterforts of
the west bastion*
(NMR:
AA031340)

The brickwork of the west bastion is comparatively well-preserved, standing some 5.5m high on its west side, as well as retaining some of the original facing bricks. Much of its front face has collapsed onto the beach, revealing four internal arched counterforts, which spring some 2m from the ground and to which the face of the wall had evidently been bonded (Fig 26).

Behind the revetment, it is likely that much of the *terreplein* survives below ground, partly covered by eroded material from above, encouraged by the collapse of the rear revetment wall. An erosion scar at **a**, has revealed two in-situ flagstones from the gun floor of the west bastion, now covered by 0.8m of soil (Fig 27). A bank along the back of the revetment at **b**, is likely to be part of the rampart behind. Two sections of wall, at **c** and **d** are the remains of the rear revetment wall, although only **d** appears to be in-situ, suggesting a wall 1.3m thick that was whitewashed on its southern face (Fig 28).



Figure 27
*The rear face of a
counterfort with a
surviving stone of
the gun floor in the
west bastion*
(NMR: AA031332)



Figure 28
*A section of the rear
revetment wall of
the lower gun line*
(NMR: AA031334)



The tidal defences (Fig 24)

In the river mud some 2m south of the revetment wall of the lower gun line, and in a line projecting upstream from the corner of the west bastion, are the remains of timber piles and boarding, which survive to a maximum height of 0.2m (Fig 25). These are the remains of defences constructed to minimise the destructive effect of the tide on the brickwork of the lower gun line. It is possible that they are the small piles which were first recommended in a Royal Engineers perambulation report of 1853:

‘the brickwork which at present preserves the property from the inroads of the river is being daily undermined and it is recommended that small piles should be driven into the clay and ragstone filled in between them and the brickwork’ (RE Perambulation Reports, Aug 1853-Nov 1885).

One of de Gomme’s 1669 plans of the fort noted that there was to be a palisade as a defence against attack south of the lower gun line and the 1742 plan also suggests that there may have been some tidal defences in place by this date, as indicated by a pecked line running out from the corner of each bastion to a central point some 50 feet to the south of the gun line. These may have been constructed following an estimate of 1694 which suggested that outside the fort a line of palisades were to be set in the river bank, 20 feet out from the wall of the lower battery and which is perhaps represented today by a small cluster of timbers at e (NMM: GOM/218:8/35; PRO: WO/49/117).



5. DISCUSSION

Cockham Wood Fort belongs to a period when the defensive policy of England was thrown into disarray following the Dutch raid on the River Medway in 1667 - a historical event of national significance. The result of this raid stimulated great activity in fortifying the Medway, adding to Charles II's programme for protecting the naval dockyards, which had begun in 1665 and were on a scale not seen since that of Henry VIII more than a century before. However, unlike the Tudor works this was much more focussed, aimed at the protection of the dockyards and the approaches to London, rather than prevention of invasion (Saunders 1989, 83-85). Cockham Wood is therefore a rare survivor of an important period of history and is one of only a few 17th - century forts remaining in the British Isles.

The fort was built to a basic design - a functional battery adapted to the sloping ground which concentrated a large amount of firepower within a compact area. Its upper and lower gun lines emulated a ship's broadside, with artillery heavy and powerful enough to engage any vessel. Its only unusual feature was the redoubt, provided also at Gillingham Fort, and which can be paralleled to two tower-like forts also designed by de Gomme for the defence of Portsmouth Harbour (Smith 1993, 75; Saunders 1989, 93). The landward defences of Cockham Wood were designed to resist attack by an infantry force, rather like the Dutch marines who had caused such havoc in 1667.

The fort was never actively engaged and its life as a fully functional battery was comparatively short. From 1725 there was a gradual reduction in the fort's armaments, which resulted in the decommissioning of part of the upper gun line. However, the guns that remained did still constitute a powerful armament and it was only in the later 18th century that the fort fell into decay, the only subsequent upkeep being for the comfort of the master gunner who remained living at the site until 1818.

Unlike many of the other forts in the area, Cockham Wood escaped later remodelling and destruction. The primary reasons for this are due to its location, especially following the expansion of Chatham Dockyard in the 19th century, which left it situated too far upstream to have been of any defensive benefit. A change in strategy towards the protection of the Medway, also in the 19th century, left it redundant, with new defences situated on Hoo and Darnet islands in the river channel.



6. SURVEY AND RESEARCH METHODS

The archaeological survey was carried out by Louise Barker, Moraig Brown and Paul Pattison at a scale of 1:500, using a Wild TC1610 electronic Theodolite with integral EDM and Key Terra-Firma surveying software. The data was captured on a Wild GRM 10 Rec Module by means of a single ring traverse, a link traverse and an open traverse (Fig 29). A misclosure of 0.791m calculated on the ring traverse, resulted from continuing subsidence of the site. A Trimble 4800 dual frequency differential GPS was used to provide an accurate location for the fort, based on Ordnance Survey National Grid co-ordinates.

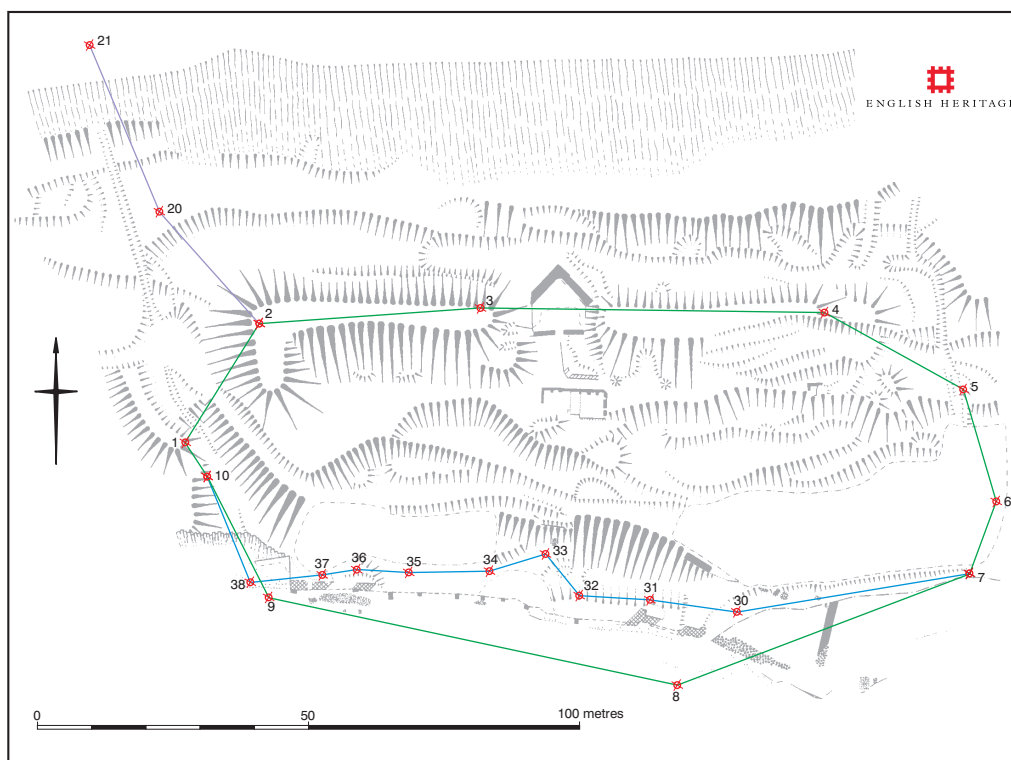


Figure 29
*Traverse
diagram*

The report was researched and written by Louise Barker, who also prepared the illustrations and assembled the final report, using AutoCAD, CorelDraw, Corel Ventura, Adobe Illustrator and Adobe Photoshop software. Alun Bull undertook the photographic recording. Paul Pattison edited the report, which was also commented upon by Victor Smith.

The site archive has been deposited in the National Monuments Record Centre, Great Western Village, Kemble Drive, Swindon SN2 2GZ (NMR reference 416808).

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7. ACKNOWLEDGEMENTS

Thanks are due to Peter Kendall for the initiation of the project, Victor Smith for his help and advice and the Brice Family Estate for providing access to the fort, together with assistance during the survey. I am also grateful for the help provided by staff at the Public Record Office, the National Maritime Museum, the British Library and the Royal Engineers Library.



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- WO/47/19a: Ordnance Office Board Minutes, series 1 Sept 1668 - Aug 1669
- WO/47/20a: Ordnance Office Board Minutes, series 1 Nov 1714 – Jan 1716



- WO/48/9: Ordnance Office Treasurer's Ledgers, part 1 1670-74
- WO/49/218: Ordnance Office Various Accounts. Edward Hubbal's accounts of payments at Sheerness etc, 1670-78
- WO/49/115: Ordnance Office Various Accounts. Estimates and miscellaneous papers 1687-1691
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- WO/49/122: Ordnance Office Various Accounts. Estimate of expenditure, 1729-1743
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- WO/54/200: Ordnance Office and War Office entry books/registers/establishments, 1727
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- MPHH/1/706 (part 6): Plan of Cockham Wood Fort on the River Medway, 1742
- MPHH/1/76 parts 1 & 2: Plan of the River Medway with the fortifications adjacent, early 18th century
- MPHH/1/50: Plan of the River Medway from Rochester Bridge to Sharpness Point together with marshes and uplands adjacent, surveyed by Desmaretz, 1724
- MPHH/1/60: Plan of the River Medway with the fortifications adjacent, c1800
- MR/1/959: Plan of the River Medway made from an actual survey thereof, 1742



ADM/140/10: Plan of the River Medway from Rochester Bridge to Hoo Ness Fort with all the moorings, as they now laid down, 1784

National Maritime Museum, Greenwich (NMM)

The de Gomme Collection

GOM/298:6/8: Elevation of a redoubt

GOM/218:8/31: Proposals for the forts at Gillingham and Cockham Wood, 1669

GOM/218:8/34: Plan and profile of Cockham Wood Fort, 1669

GOM 218:8/5: Proposals for the forts at Gillingham and Cockham Wood, 1669

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Letter Books (Chatham), Sept 1830 – July 1833

Letter Books (Chatham), Aug 1835 – Oct 1837

Letter Books (Chatham), Sept 1842 – April 1844

Perambulation reports, Aug 1853 – Nov 1885



Photographic Record

- AA031309: The gorge rampart and upper gun line from the east
- AA031310: Detail of brick conduit from south-west
- AA031311: The redoubt from the south
- AA031312: The redoubt, conduit and late 18th-century gunner's house from the west
- AA031313: The gorge rampart and upper gun line from the east
- AA031314: The gorge rampart and upper gun line from the east
- AA031315: The gorge rampart and upper gun line from the east
- AA031316: Detail of the conduit
- AA031317: The redoubt and gorge rampart from the east
- AA031318: Gorge rampart and ditch from the east
- AA031319: Gorge rampart and ditch from the east
- AA031320: The west ditch from the north
- AA031321: Gorge rampart and ditch from the west
- AA031322: The redoubt, conduit and late 18th-century gunner's house from the west
- AA031323: The gorge rampart and ditch from the east
- AA031324: The counterscarp of the gorge ditch from the east
- AA031325: The well from the south-east
- AA031326: The gorge rampart and upper gun line from the east
- AA031327: The west ditch and rampart from the west
- AA031328: The gorge rampart and ditch from the east
- AA031329: The gorge rampart and interior earthworks from the east
- AA031330: The well from the south-west
- AA031331: The lower gun line: remains of the east bastion from the north-west



- AA031332: Erosion scar in the lower gun line showing the rear face of a counterfort and flagstone of the gun floor
- AA031333: The west ditch and rampart from the west
- AA031334: Section of rear wall from the lower gun line from the south-west
- AA031335: The redoubt from the east
- AA031336: The conduit from the east
- AA031337: The lower gun line: detail of the counterforts from the south
- AA031338: The lower gun line: the west bastion and counterforts from the south-east
- AA031339: Remains of the tidal defences from the north-east
- AA031340: The lower gun line: detail of the counterforts from the south
- AA031341: The lower gun line: detail of the counterforts from the south-east
- AA031342: The lower gun line: detail of the brick revetment showing buttresses and later underpinning. View from the south
- AA031343: The lower gun line: detail of brick revetment and tidal defences from the south-west
- AA031344: The lower gun line: view from the west along the brick revetment with the tidal defences in front
- AA031345: The lower gun line: the revetment from the east
- AA031346: The lower gun line: detail of the brick revetment from the north
- AA031347: The lower gun line: remains of the east bastion from the north-west
- AA031348: The lower gun line: remains of the east bastion from the north-west
- AA031349: The redoubt from the east
- AA031350: Section of collapsed rear wall of the lower gun line from the south
- AA031351: Section of collapsed rear wall of the lower gun line from the south
- AA031352: The well from the south-west
- AA031353: The counterscarp and terrace of the gorge ditch from the west



AA031354: The gorge rampart and ditch from the west

AA031355: The redoubt from the east

AA031356: The redoubt from the south-east

AA031357: The late 18th-century gunner's house and conduit from the north-east

AA031358: The gorge rampart and ditch from the west

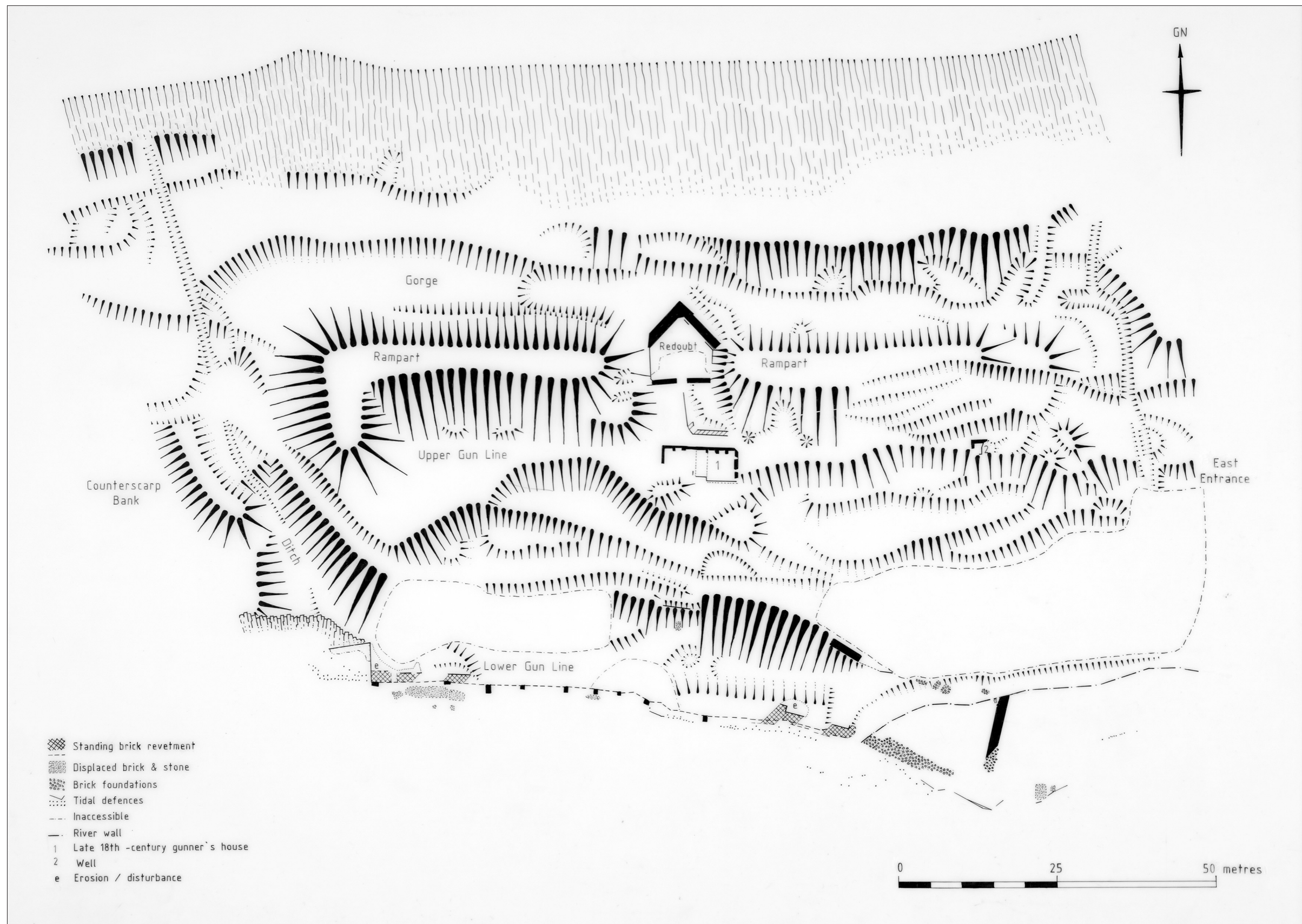


Figure 30. English Heritage survey plan of Cockham Wood Fort.