

Lower Thames Crossing

Environmental Statement Appendices

Appendix 6.4 - Coastal Fortifications Statements of Significance

APFP Regulation 5(2)(a)

Infrastructure Planning (Applications:
Prescribed Forms and Procedure)
Regulations 2009

Volume 6

DATE: October 2022

Planning Inspectorate Scheme Ref: TR010032
Application Document Ref: TR010032/APP/6.3

VERSION: 1.0



Lower Thames Crossing

Coastal Fortifications Statements of Significance

Document Ref.: 218561.02
April 2020



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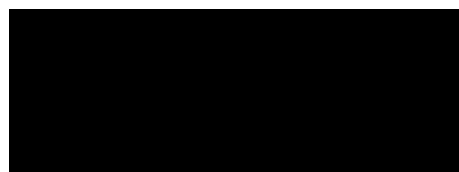
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Document Information

Document title	Lower Thames Crossing
Document subtitle	Coastal Fortifications Statements of Significance
Document reference	218561.02
Client name	Arcadis LLP
Address	34 York Way London
On behalf of	LTC Cascade
Statutory designations	Scheduled Monuments, Grade II* and Grade II Listed Buildings
Planning authorities	Gravesham Borough Council, Thurrock Borough Council, Medway Council
Project management by	Alex Godden
Document compiled by	Grace Flood

Quality Assurance

Issue and date	Status	Author	Approved by
1 2019/11/11	Draft	GF	AG
2 2020/01/06	Draft amended	GF	AG
3 2020/04/16	Draft amended following comments from Lara Bishop received 23/03/2020	GF	AG
4 2020/04/24	Minor update to summary only	GF	AG



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Summary

Wessex Archaeology was commissioned by Arcadis LLP, on behalf of LTC CASCADE, to prepare statements of significance for seven coastal fortifications within the Lower Thames Crossing study area: Gravesend Blockhouse, New Tavern Fort, Shornemead Fort and Cliffe Fort in Kent and Tilbury Fort, Coalhouse Fort and East Tilbury Battery in Essex.

All of the assessed sites comprise or include heritage assets of national importance and significance, and all except Shornemead Fort include designated heritage assets.

All these fortifications are associated with national defence and the defence of the River Thames and the approach to London. They represent the changing and dynamic military responses to external threats as strategy, tactics and technology evolved. The level of survival and condition of the sites add to their significance; especially at New Tavern Fort, Tilbury Fort, Coalhouse Fort and East Tilbury Battery. Some like Tilbury Fort, Coalhouse Fort and East Tilbury Battery are heralded as the best, most complete or very rare/unique examples of a particular type and period of fortifications. For example, Tilbury Fort is described as 'England's most spectacular' surviving example of a late 17th century coastal fort and Coalhouse Fort as 'one of the finest examples of an armoured casemate fort in England'.

Shornemead Fort is considered to be a non-designated heritage asset of national importance. Its significance has been negatively affected by its condition and level of survival (it was partially demolished in the 1960s) and may be why it has not been selected for designation. At Cliffe Fort, the condition and setting of the asset (flooded, overgrown and surrounded by aggregate works) affects the ability to appreciate its significance.

The National Policy Statement for National Networks (NPSNN) indicates that in determining applications, the Secretary of State should seek to identify and assess the particular significance of **any** heritage asset that may be affected by the proposed development and consider the impact of said development. This encompasses both designated and non-designated heritage assets. This is consistent with the section 16 of National Planning Policy Framework (NPPF) and is also reflected regional and local planning policies and supplementary planning documents.

At time of writing, details of the works proposed for the Lower Thames Crossing scheme have not been finalised. It is likely that the Scheme will affect the setting of all of the assessed site heritage assets, but nature, extent and permanence of any changes to setting, and more importantly the potential impact this will have on the significance of the assessed sites and their heritage assets, cannot be determined at this stage. The Scheme intersects Tilbury Fort Scheduled Monument and this localised physical impact may have a resultant impact on the significance of the asset. Also, it is possible that the Scheme will physically impact remains associated with East Tilbury Battery and Coalhouse Fort due to the very close proximity of the Scheme area to the designated heritage assets at these sites.

The potential impact of the project on the significance of the assessed sites and their heritage assets will be assessed in the relevant Environmental Statement (ES) chapter.

Acknowledgements

This project was commissioned by Arcadis LLP, and Wessex Archaeology is grateful to James Goad in this regard. Wessex Archaeology would also like to thank Kent County Council and Essex County Council for supplying the Historic Environment Record data and to the staff of the Kent Archives and Essex Record Office for their assistance with research.

Lower Thames Crossing

Coastal Fortifications Statements of Significance

1 INTRODUCTION

1.1 Project background

1.1.1 On 12th April 2017, The UK Government's Secretary of State for Transport announced the preferred route for Lower Thames Crossing (LTC), referred to in this document as the 'Scheme'. This is the option previously known as 'Option C' (Route 3) with Western Southern Link (WSL). The route is primarily designed to ease congestion on the Dartford Crossing but will accommodate projected increases in traffic levels in the region as well as supporting future economic growth.

1.2 Lower Thames Crossing

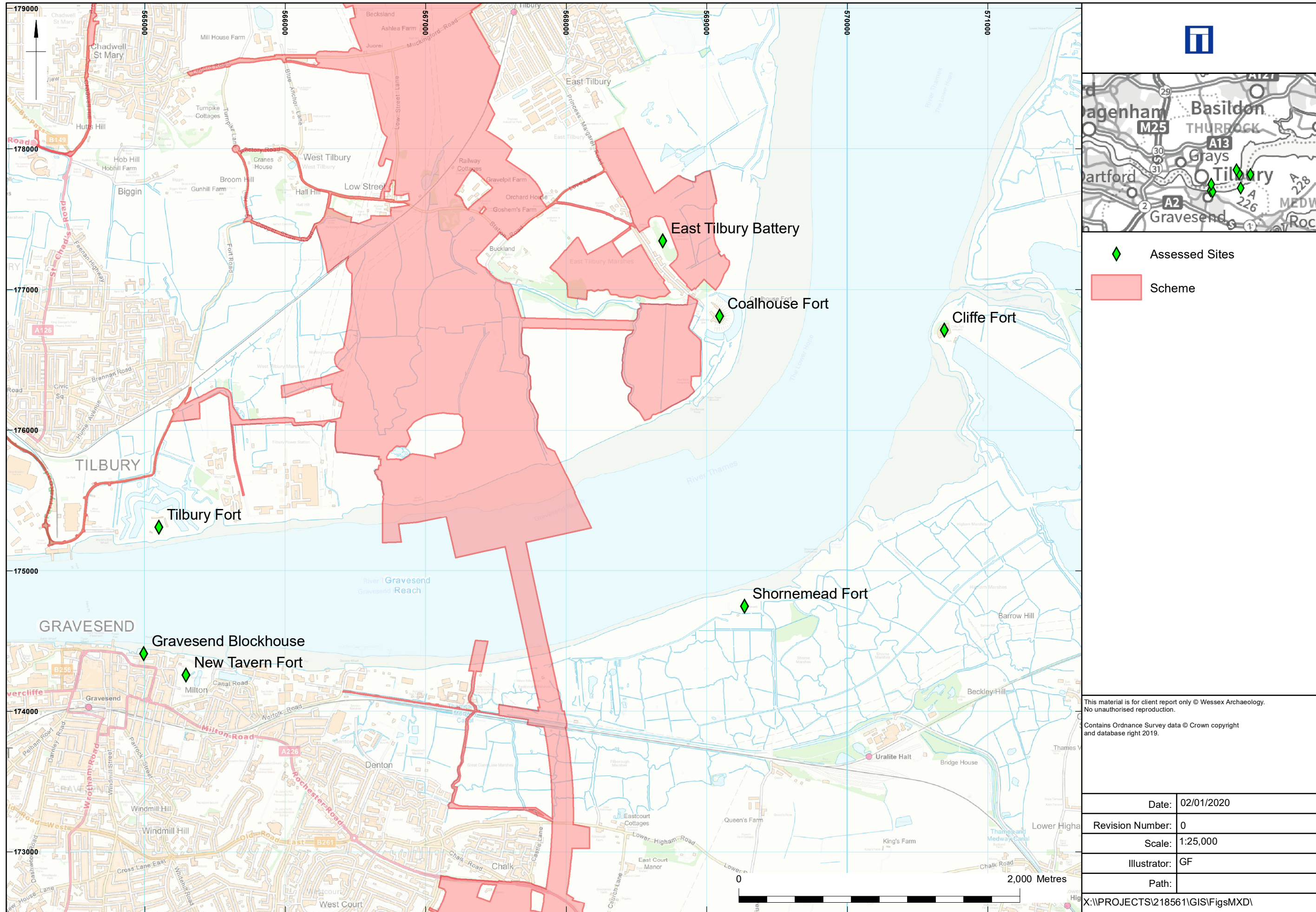
1.2.1 The Scheme is located between the A2 in Kent and the M25 in the London Borough of Havering passing through Thurrock for much of its length (**Figure 1**). At the southern end of the Scheme, a new WSL will connect to a new junction on the A2. The WSL would continue north from the new junction passing through agricultural land to the Scheme's southern tunnel portal. The Scheme will run underneath the River Thames for approximately 4km emerging on the north side of the river at East Tilbury. The route of the Scheme will then pass north on an embankment in between Chadwell St Mary and Linford and turn to the northwest to join a new junction with the A13 at Orsett. The Scheme continues north from the A13 and turns eventually west to join the M25 in between North and South Ockendon.

1.2.2 The Lower Thames Crossing will comprise:

- Approximately 14.5 miles (23km) of new motorway connecting to the existing road network from the A2/M2 to the M25
- Two 2.5-mile (4km) tunnels, one southbound and one northbound
- Three lanes in both directions with a maximum speed limit of 70mph
- Improvements to the M25, A2 and A13, where the Lower Thames Crossing connects to the road network
- New structures and changes to existing ones (including bridges, buildings, tunnel entrances, viaducts, and utilities such as electricity pylons) along the length of the new road

1.3 The Assessment Sites

1.3.1 This assessment was requested by the Client in order to determine the individual heritage significance of seven coastal fortification sites: Gravesend Blockhouse, New Tavern Fort, Shornemead Fort and Cliffe Fort in Kent and Tilbury Fort, Coalhouse Fort and East Tilbury Battery in Essex (**Figure 1**).



Assessed Site locations

Figure 1



2 METHODOLOGY

2.1 Introduction

- 2.1.1 A method statement was prepared by Wessex Archaeology outlining the scope of the project and report (2019) based on a specification from Highways England (2018).
- 2.1.2 The methodology employed during this assessment was based upon relevant professional guidance, including the Chartered Institute for Archaeologists' *Standard and guidance for historic environment desk-based assessment* (ClfA 2014, revised 2017).

2.2 Data collection and analysis

- 2.2.1 Relevant historic environment data has been collated and analysed, in order to form a baseline for the assessment. This will first and foremost consist of Historic Environment Record (HER) data from both Kent and Essex County Councils and the National Heritage List for England in the case of designated heritage assets.
- 2.2.2 Other data sources consulted include documentary and cartographic material from the Kent and Essex Archives.
- 2.2.3 An online search identified a variety of journal articles, previous studies and assessments of the sites and these were used in conjunction with some documentary sources and previous studies supplied by the client.
- 2.2.4 A full list of repositories and sources consulted is provided in the references section.

2.3 On site assessment

- 2.3.1 Site walkover surveys were conducted for Gravesend Blockhouse, New Tavern Fort, Shornemead Fort, Cliffe Fort and Tilbury Fort on the 7th to 9th October 2019. Access to Coalhouse Fort and East Tilbury Battery was not permitted by the landowners.
- 2.3.2 The purpose of the site visits was to assess the character and survival of sites under assessment and better understand their physical presence, their setting, and relationship to the landscape and each other to inform the statements of significance. Photographs were taken of the sites and of key viewpoints to and from the assets to inform the assessment and illustrate this report.

2.4 Assessment criteria

- 2.4.1 The *National Policy Statement for National Networks* (NPSNN; Department of Transport 2014) is the relevant policy for this project as it is a Nationally Significant Infrastructure Project (NSIP) that requires a development consent order (DCO) under the Planning Act (2008) and is determined by Planning Inspectorate/Secretary of State.
- 2.4.2 The overall strategic aims of the National Planning Policy Framework (NPPF; MHCLG 2019) and NPSNN are consistent. The NPSNN includes a section on generic impacts to the historic environment (Department of Transport 2014, 71-75), which is similar to and consistent with the statements made in NPPF section 16 'Conserving and enhancing the historic environment'. The two documents use the same terminology to define and assess the significance of, and impacts to, the historic environment but NPSNN does not have a glossary. Therefore, this report will use the same historic environment terminology as in NPSNN, as defined in the NPPF glossary and relevant Planning Practice Guidance.

2.4.3 Significance (for heritage policy) is defined in NPPF as:

'The value of a heritage asset to this and future generations because of its heritage interest. The interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting. For World Heritage Sites, the cultural value described within each site's Statement of Outstanding Universal Value forms part of its significance.'

2.4.4 The assessment of the significance of heritage assets was informed by:

- The National Policy Statement for National Networks;
- The National Planning Policy Framework and Planning Practice Guidance;
- The Scheduled Monuments Policy Statement *Scheduled Monuments & nationally important but non-scheduled monuments* (Department for Culture, Media and Sport (DCMS) October 2013);
- *Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment* (English Heritage 2008);
- *Managing Significance in Decision-Taking in the Historic Environment. Historic Environment Good Practice Advice in Planning: 2* (Historic England 2015).
- *The Setting of Heritage Assets. Historic Environment Good Practice Advice in Planning Note 3* (Second Edition) (Historic England 2017a)
- *Military Structures: Listing Selection Guide* (Historic England 2017b)
- *Military Sites Post-1500: Scheduled Selection Guide* (Historic England 2018a)
- *Introduction to Heritage Assets: Artillery Defences* (Historic England 2018b)

2.4.5 As specified in the method statements (Arcadis 2018, Wessex Archaeology 2019), significance will be described using the heritage values outlined by English Heritage (now Historic England) in *Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment*:

- Evidential value: the potential of a place to yield evidence about past human activity.
- Historical value: the ways in which past people, events and aspects of life can be connected through a place to the present - it tends to be illustrative or associative.
- Aesthetic value: the ways in which people draw sensory and intellectual stimulation from a place.
- Communal value: the meanings of a place for the people who relate to it, or for whom it figures in their collective experience or memory.

2.4.6 The assessment of significance will include consideration of each sites' architectural design, their historic association with the defence of the realm, their relationship with each other, their relationship with the surrounding landscape and their individual setting.



2.5 Assumptions and limitations

- 2.5.1 Data used to compile this report consists of secondary information derived from a variety of sources, only some of which have been directly examined for the purposes of this Study. The assumption is made that this data, as well as that derived from other secondary sources, is reasonably accurate.
- 2.5.2 Lack of access to Coalhouse Fort and East Tilbury Battery means that assessment of these sites is limited because it relies on fewer sources of information.
- 2.5.3 The records held by the Kent HER and Essex HER are not a record of all surviving heritage assets, but a record of the discovery of a wide range of archaeological and historical components of the historic environment. The information held within it is not complete and does not preclude the subsequent discovery of further elements of the historic environment that are, at present, unknown.



3 GRAVESEND BLOCKHOUSE

3.1 The Site

Site	Gravesend Blockhouse		
Address	Royal Pier Rd, Gravesend DA12 2BE		
OS NGR	564993 174409		
Statutory heritage designation(s)	Scheduled Monument	List Entry No. 1005120	Gravesend Blockhouse
	Conservation Area	-	Gravesend Riverside
Relevant Kent HER nos. include	TQ 67 SW 5, TQ 67 SW 1093		
Origin period	Mid-16th century		
History and function	<p>Blockhouses are defensive structures built specifically to house a small artillery garrison and to protect the gunners and ammunition from attack. They were typically located to command a river, harbour entrance or anchorage. Usually stone built, they vary widely in design. Main components were a tower and bastions or gun platforms, although in some cases only the tower or the bastion was present. The earliest known blockhouse dates to 1398, but the majority were built in the first half of the 16th century by Henry VIII.</p> <p>Gravesend Blockhouse was built for Henry VIII in 1539 as part of his chain of coastal defences in response to the threat of invasion from Spain and France, which was urged by the Pope following Henry's split from the Catholic Church in 1534.</p> <p>The site at Gravesend (Figure GB1) was one of five blockhouses built by Henry VIII to defend the approach to London; the others are at Tilbury, Higham, Milton and East Tilbury. They are sited at the first place in the river where geographical factors made for easy landing of forces. Gravesend Blockhouse lies on the south bank of the River Thames and with the Tilbury and Milton blockhouses forms a second line of defence; East Tilbury and Higham formed the first (Smith, 1974 142-3). The position of Gravesend Blockhouse was intentionally strategic, to guard the ferry crossing between Gravesend and Tilbury and provide a pattern of cross fire with the Tilbury Blockhouse opposite (now incorporated within Tilbury Fort).</p> <p>The small garrison consisted of a commander and eight others. In addition to the blockhouse there were earthen gun lines on either side of it along the river bank. Collectively the blockhouse and gunlines were armed with 21 guns.</p> <p>Repairs to the blockhouse were carried out in 1588 and 1667, and it continued to be used as a garrison and defensive position into</p>		

<p>Site</p>	<p>Gravesend Blockhouse</p>
	<p>the 17th century. By the late 17th century, it had been converted into a storage magazine for gun powder. The building to the south of the blockhouse (now The Royal Clarendon Hotel) became the Ordnance Storekeepers Quarters. It had previously been occupied by James Stuart (James II) when he was Duke of York and Lord High Admiral. Although the blockhouse was converted, the eastern gun line continued to be armed. The gunlines were remodelled in the 1780s.</p> <p>By the nineteenth century, the Gravesend Blockhouse was redundant as a defensive structure, with cross-fire from New Tavern and Tilbury Forts becoming the main means of defending the Thames (KCC 2004, 11). The gunlines were levelled in 1834 and the blockhouse was partially demolished in 1844.</p> <p>The site also played a defensive role in the First World War. Early in the War, a timber pontoon bridge was constructed by the Royal Engineers between Gravesend and Tilbury for the quick movement of troops and equipment between Essex and the Kent coastal ports, avoiding London. The bridge also acted as a physical barrier to a German naval attack on London via the River Thames. The bridge was located close to Gravesend Blockhouse, spanning from outside the Clarendon Royal Hotel, just east of the town pier to a point between The World's End public house and the main entrance to Tilbury Fort (Wynn 2016, 41-44).</p> <p>In 1975-6 partial excavation revealed some of the footings of the blockhouse (Thameside Archaeological Group); these have been consolidated and left exposed. The site was designated as a Scheduled Monument on 21 November 1979.</p>
<p>Defence of the realm and relationship with other sites</p>	<p>Gravesend Blockhouse has been associated with national defence from the mid-16th to late 18th centuries and again during the First World War. It is located opposite Tilbury Fort at the mouth of the Thames Estuary where the river narrows. Gravesend Blockhouse is positioned so as to protect the approach to London via the River Thames as well as the crossing between Tilbury and Gravesend. It worked in combination with other defences on the south and north sides of the river, forming a pattern of crossfire with New Tavern Fort and Tilbury Fort.</p>
<p>Form and architectural design</p>	<p>Gravesend and the other Thames blockhouses were constructed to the designs of Christopher Morice and James Nedham (Smith 1974, 143). A plan of the Tudor Blockhouse appears in an article in the Kent Archaeological Review issue 45 (Thompson 1976) and shows the blockhouse surrounded by a stockade with gunlines either side and outbuildings such as Governor's stables and dog house to the west (no longer extant).</p> <p>The blockhouse was originally D-shaped in plan and appears to have been two-storeys in height (Smith 1974, 143). Its curved front</p>

Site	Gravesend Blockhouse
	faced the river with two angled faces on the south side and a curved bastion on the west side. The blockhouse is constructed of brick and faced in ashlar blocks. Blockings in the main brick wall mark the position of gun ports. Some of the walls visible within the interior of the blockhouse are likely to represent alterations following the conversion of the building into a storage magazine.
Present condition, surrounding landscape and setting	<p>The blockhouse currently survives as both upstanding and buried remains; the north-west quadrant of the semi-circular front is exposed (Plate GB1). Buried remains of the blockhouse survive beneath a private car park to the east and Royal Pier Road to the south and the extent is marked out in road studs (Plate GB2). The visible remains are surrounded by railings and an information board provides details about its history and development including reconstruction illustrations of what the blockhouse may have looked like and how it operated. The site is not signposted, and as the exposed remains lie below the surrounding ground level, the monument is only visible at short range.</p> <p>To the north and west of the visible remains is a lawn area associated with the hotel. There are sightlines from in front of the blockhouse across the river to Tilbury Fort, although the modern river wall on the north side of the Thames blocks the lower part of the fort structures from view. The pale-coloured masonry of Tilbury Fort water gate stands out (Plates GB3 and GB4).</p>

3.2 Statement of Significance

3.2.1 All of the assessment sites except one (Shornemead Fort) are designated as Scheduled Monuments. The purpose of this type of designation is to help preserve (ancient) monuments of national importance, if they meet the scheduling selection criteria. Not all assets of national importance are, or can be, designated (DCMS 2013, 4-5). The significance (and importance) of a heritage asset can be gauged by the level of heritage interest they hold. In the selection criteria for Scheduled Monuments, archaeological interest and historic interest are particularly relevant (ibid, 10).

3.2.2 The Scheduled Monument list entry for Gravesend Blockhouse indicates the 'reasons for designation':

Blockhouses are defensive structures of widely varying design built specifically to house a small artillery garrison and to protect the gunners and ammunition from attack. Usually stone built, each structure was designed and built to protect a particular feature or area; typically they were located to command a river, harbour entrance or anchorage. The main components of blockhouses were a tower and bastions or gun platforms, although in some cases only the tower or the bastion was present. The earliest known blockhouse dates to 1398, but the majority were built in the first half of the 16th century by Henry VIII.

Distributed along the east, south and south west coasts, there are 27 examples which are known to survive in various states of repair, mostly now destroyed or

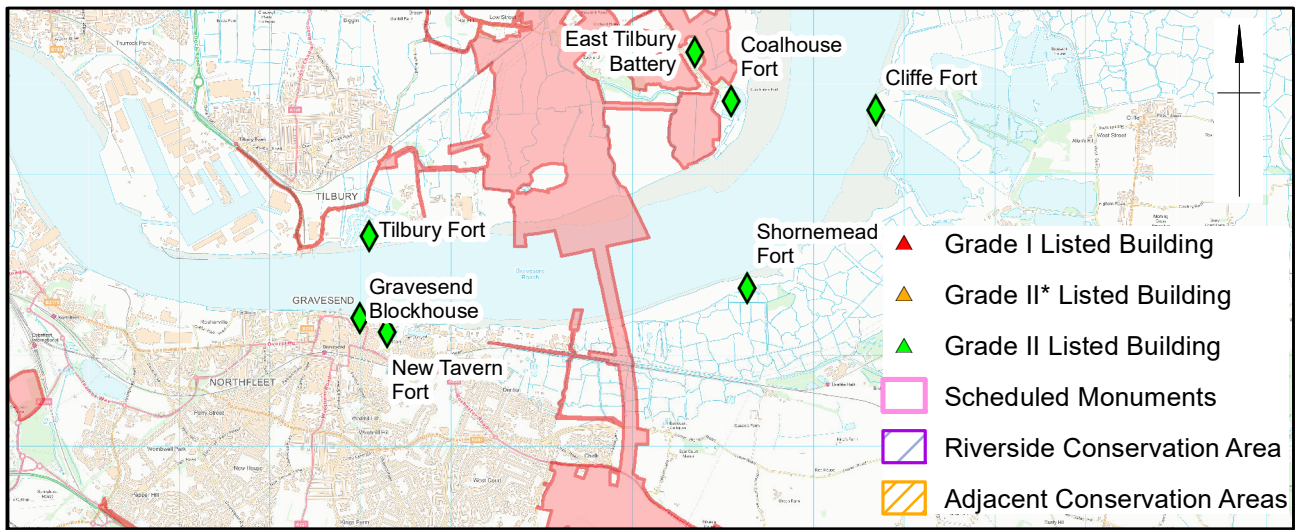
incorporated into later military constructions. Surviving examples will illustrate the development of military defensive structures and of tactics and strategy during this period of rapid change following the introduction of firearms. They will also preserve something of the life and experience of the common soldier who was required to live and work within them. All examples with substantial archaeological remains are considered to be of national importance and will be worthy of protection.

Despite having been partially demolished in the past, substantial remains survive of Gravesend Blockhouse. These provide information as to the original function and layout of the blockhouse, as well as its 16th century construction. The blockhouse has group value as part of a chain of defences built by Henry VIII and forms a visual link to that of Tilbury Fort on the opposite side of the Thames. A large part of the blockhouse has not been excavated and retains potential for further investigation.

- 3.2.3 Gravesend Blockhouse is a nationally important heritage asset with substantial evidential and historic value that can also be expressed as archaeological, architectural and historic interest.
- 3.2.4 The level of survival of the Blockhouse and limited alteration prior to its partial demolition are important aspects of its significance and forms part of its evidential value.
- Substantial remains survive and a large part of the site remains unexcavated so there is potential for further investigation. This increases the potential of the site to yield evidence about past human activity.
 - Gravesend Blockhouse has been partially demolished in the past but is one of the few blockhouses that were not destroyed or incorporated into later military constructions.
- 3.2.5 The historical value of the Blockhouse is both illustrative and associative and inextricably linked to its military defensive purpose and Britain's international relationships and policy.
- It has association with national defence from the mid-16th to 20th centuries and illustrates changing and dynamic military responses to external threats:
 - the Blockhouse is one of a series of such defensive structures established by Henry VIII and part of his maritime defence programme
 - the Henry VIII Blockhouses, including the one at Gravesend, represent a specific defensive response to a perceived threat of invasion and rapid advancements in weapons technology and strategy.
 - the individual designs and strategic siting of the various Henrician Blockhouses illustrate what areas/features were considered to need protection as well as 16th century architectural craftsmanship - adapting to challenges presented by different locations and environments
 - It also illustrates something of the activity and experience of the soldier who manned the Blockhouse
- 3.2.6 Gravesend Blockhouse holds group value in a national sense as one of a number of blockhouses on the east, south and south west coasts constructed for Henry VIII as part of

the network dating to the 16th century. It is also part of the network of 16th century and later defensive structures along the River Thames built to protect the approach to London and, more specifically, it is one of five Henrician blockhouses on the River Thames. These worked with each other and Gravesend Blockhouse to provide a pattern of crossfire with Tilbury Blockhouse (later Tilbury Fort) opposite.

- 3.2.7 Both Gravesend Blockhouse and New Tavern Fort lie within the Riverside Conservation Area. Both sites contribute to the special interest of the Conservation Area. Specifically, they both reflect Gravesend's strategic importance as a key defensive location on the river approach to London.
- 3.2.8 The view from Gravesend Blockhouse over the River Thames to Tilbury Fort contributes positively to its significance and illustrates the group value of these sites as part of a defensive network. The open green space of the Hotel garden in front of the Blockhouse enables this important view. Conversely, the demolition of the Blockhouse to below the surrounding ground level means that the opposite view from Tilbury Fort does not easily convey this connection, allow the Hotel garden and adjacent Church make the position of Gravesend Blockhouse relatively easy to find within the view. The road and car park cover the majority of the Blockhouse footprint and while they protect the asset and maintain its archaeological interest, it is difficult to appreciate the form, scale and significance of the Blockhouse from the remains exposed. Although, the information panel and road studs marking the outline of the Blockhouse help in this respect. The presence of the Royal Clarendon Hotel also contributes to the significance of the Blockhouse, illustrating the historic relationship between these structures.



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Coordinate system: OSGB36 (OSTN15/OSGM15)				
	Date:	02/01/2020	Revision Number:	0
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Gravesend Blockhouse site and designated heritage assets

Figure GB1



Plate GB1: Exposed part of the Gravesend Blockhouse. The Royal Clarendon Hotel in the background.



Plate GB2: Road studs showing the extent of buried remains



Plate GB3: View from Gravesend Blockhouse towards Tilbury Fort

water gate



Plate GB4: Detail of Tilbury Fort as viewed from Gravesend Blockhouse



4 NEW TAVERN FORT

4.1 The Site

Site	New Tavern Fort		
Address	Fort Gardens, Gravesend, DA12 2BH		
OS NGR	565294 174271		
Statutory heritage designation(s)	Scheduled Monument	List Entry No. 1005120	New Tavern Fort, Gravesend, including Milton Chantry
	Listed Building - Grade II*	List Entry No. 1261173	New Tavern Fort
	Listed Building - Grade II*	List Entry No. 1089047	Milton Chantry
	Conservation Area	-	Gravesend Riverside
Relevant Kent HER nos. include	TQ 67 SE 37, TQ 67 SE 1107, TQ 67 SE 1202		
Origin period	Milton Chantry - at least 14th century New Tavern Fort - Late 18th century		
History and function	<p>Milton Chantry: An information board by the Chantry identifies it as 'Gravesend's Oldest Building'.</p> <p>The exact origin of Milton Chantry is unknown, but lands granted to the hospital at Gravesend are mentioned as early as 1155-6. By 1170 a pilgrims' hostel or hospital of St. Mary the Virgin had been established on site and was thought to have been a leper hospital or a hostel for pilgrims travelling to Canterbury (KCC 2004, 7). The definition of a hospital in a medieval context is 'a group of buildings housing a religious or secular institution which provided spiritual and medical care' (List entry no. 1013658). Aymer de Valence, Earl of Pembroke (re)founded the chantry in 1321.</p> <p>In the mid-16th century, the chantry was dissolved after the death of its master and brethren and the lack of election of a new master. It automatically passed into Crown hands before it was granted to Sir Henry Wyatt who re-founded the chantry. Wyatt died in 1537 and by 1540 the clergy had been dismissed and the building had come into secular, domestic use. In the late 17th century part of the chantry building was used an inn known as Zoar Alehouse in 1697 and later, in the early 18th century, as the New Tavern (KCC 2004, 14). In 1780 the building was incorporated into New Tavern Fort as a barracks. The interior was remodelled, the exterior was clad in</p>		



Site	New Tavern Fort
	<p>brick and new windows were added. It was subsequently restored in 1852 and 1862.</p> <p>In 1930, the chantry was sold to Gravesend Council and during the Second World War the basement was prepared as a gas decontamination centre as a defensive measure against anticipated gas warfare (Smith 1998, 23). After the war, many of the extensions (added during its use as an inn and barracks) were removed, revealing the small two-light window and reinstating the Gothic window at the east end of the building with new tracery (GCC information board). The Chantry building became property of the State in 1972 (List entry no. 1013658). The Chantry was refurbished and reopened in 1995 as a local history centre.</p> <p>New Tavern Fort was built as a result of the 1778 survey of the defensive requirements of the Thames. At that time (during the American Revolution) there was a threat of invasion by joint American and French forces. New Tavern Fort was positioned to provide cross fire with Tilbury Fort (on the north side of the river). The chantry land was formally requisitioned by the military in 1779 and initial construction of the fort occurred between 1780 and c.1783.</p> <p>Originally New Tavern Fort consisted of an angled battery with two faces looking towards the river. A rampart joined the angled battery to a smaller, straight one. It was defended in front by a flat-bottomed ditch containing a wooden palisade circa 3 m high. The fort was constructed of unrevetted earth and was designed for an armament of heavy, smooth-bore cannon firing through embrasures. The rear of the fort was originally open and unprotected but by the end of the 18th century a brick wall with loopholes for musketry had been added (List entry 1013658).</p> <p>A building called 'Fort House', comprising two tenement houses, was transported to the site on rollers in 1780 from about 200 yards away close to the river (Cruden 1843, 439 cited in Wessex Archaeology 2016). This became the home of the Commanding Royal Engineer. It was demolished after suffering bomb damage in the Second World War.</p> <p>The fort armaments were updated and increased at intervals during the 19th and early 20th centuries.</p> <p>1848 - fifteen 32-pound cannons were installed within shielded emplacements and two magazines constructed.</p> <p>1865-71 - Colonel (later General) Charles Gordon, was the Commanding Royal Engineer. He resided in Fort House.</p> <p>1868-72 - Gordon carried out remodelling of the fort. This included 'levelling of the riverfacing ramparts' (Smith 1998, 15 cited in</p>



Site	New Tavern Fort
	<p>Wessex Archaeology 2016), in order to insert brick emplacements for 10 heavy rifled muzzle-loading (RML) guns, with magazines underneath. Cartridge and shell stores were built into the embankment of the Angled Battery and Straight Battery. The extent of the work suggests that the little could have remained of the original east side of the fort apart from the embankments and the ditches.</p> <p>1904-5 - Two 6-inch guns were erected on the site of the Angled Battery and a magazine built below</p> <p>1909 - The fort was disarmed although still manned</p> <p>1914-18 - The Royal Engineers were stationed at the fort during World War I</p> <p>1930-37 - an additional two 6-inch guns were stationed at the fort for drilling and practice of Territorial Army; the guns were subsequently removed.</p> <p>In 1932, the fort was purchased by Corporation of Gravesend and the Fort Gardens were opened to the public. The bandstand and south-west entrance gates to the Park date to this time.</p> <p>1939-45 - During World War II, a light anti-aircraft gun and searchlight were mounted on the 6-inch emplacements. Fort House was a food rationing office until bombed by a German V2 rocket and subsequently demolished. The magazines were used as emergency air-raid shelters. A radio relay system and two steel towers were also built on site.</p> <p>Milton Chantry was listed on 23 January 1952, New Tavern Fort was listed on 24 February 1977 and the site was scheduled on 15 June 1995.</p>
Defence of the realm and relationship with other sites	<p>Gravesend and Tilbury lie opposite each other at the mouth of the Thames Estuary where the river narrows. Both are of strategic importance and form a defensive location on the river approach to London. New Tavern Fort formed part of the defence of London from the late 18th to the 20th centuries. Together with Gravesend Blockhouse it formed a pattern of crossfire with Tilbury Fort opposite.</p>
Form and architectural design	<p>The medieval Chantry consisted of a stone-walled aisled hall and chapel (the surviving listed building), as well as a kitchen, storehouse and chambers and was surrounded by 13 acres of land with its own wharf on the river.</p> <p>Externally, apart from its east elevation, the Milton Chantry building appears to be an 18th century brick structure and its form is suggestive of domestic/residential use. Indication of its medieval</p>



Site	New Tavern Fort
	<p>origins is provided by its east flint wall with probably original mullioned window and reconstructed Early English Gothic window. The latter is the most distinctive feature of the exterior but is inconsistent with the later uses of the Chantry as an inn and military barracks (Plates NTF1-2).</p> <p>The interior of the Chantry was not accessible during the 2019 site visit but was inspected in 2016 for the Conservation Management Plan (Wessex Archaeology). The building contains two timber floors, which were added in the 16th century when it was converted to domestic use and there is a 17th century staircase. It contains a 14th arch-braced roof on the first floor and a stone fireplace with blank spandrels. There is a similar C14 arch-braced roof on the second floor. A timber-framed structure, which was the priests' house, runs out at right angles from the south wall of the Chantry and contains part of an aisled hall dating to circa 1321 and a Queen post roof. The priest's house was encased in brick along with the rest of the Chantry.</p> <p>The majority of the fort structures are brick- and concrete-built, flat-roofed utilitarian structures that display a regularity and uniformity of style representative of military standardisation. Different coloured bricks allow easy distinction between different components and phases (Plates NTF3-4).</p> <p>The fort displays a complete sequence of mounted guns representing each stage in its development. Some replica guns have also been added alongside the original/historic weapons (Plates NTF5-6).</p> <p>Some elements of the fort, such as its south-west entrance gates and bandstand are 1930s features representative of its 20th-21st century use as pleasure gardens. In 1886, Gordon Promenade and Gordon Recreation Ground were opened as a tribute to as a tribute to General Gordon following his death. They were designed by landscape gardener Henry Milner.</p> <p>Milton Chantry and the bandstand are identified as landmark structures in the New Tavern Fort character area of the Riverside Conservation Area (GBC 2009, 22).</p>
Present condition, surrounding landscape and setting	<p>New Tavern Fort comprises a mix of historic structures and features that survive within a public park. The 18th-20th military use of the site is better represented than former uses as an inn or medieval hospital (represented by the Milton Chantry building).</p> <p>The Riverside Conservation Area appraisal identifies New Tavern Fort as a very self-contained character area that follows the limits of the fortifications. <i>'The character of this area is based around its military history and the bulky built form that contains it. The views from the gun emplacements to the north of the fort, over the river</i></p>



Site	New Tavern Fort
	<p><i>and back down into the fort itself give the best outlook over this unusual piece of urban riverside landscape. The distinct character of the fort is reinforced by the mixture of modern and historic buildings that surround it and the modestly sized Milton Chantry that has been swamped by the large fortification since the 18th century.'</i> (GBC 2009, 22)</p> <p>The association of the fort to Colonel (later General) Gordon and his connection to Gravesend is emphasised by a Grade II listed statue of General Gordon to the east of the fort within the Riverside Leisure Area.</p> <p>The setting of the site was described in the 2016 Conservation Management Plan. Important/positive elements of the setting that contribute to the significance of the site are:</p> <ul style="list-style-type: none">• Views from the fort to the river are fundamental to the military function of the site and a part of its setting that is vital to its significance (Plate NTF7)• A glimpse of the white limestone gatehouse of Tilbury Fort is possible (the remainder of the fort is not so easily discernible), which shows the relatively close proximity between the two forts that enabled a cross-fire on enemy ships advancing up the Thames (Plate NTF8).• The Promenade and gardens to the east are maintained as a leisure area, this preserves the visual link between the river, New Tavern Fort and Tilbury Fort.• The Riverside Leisure Area includes the areas of greenspace to the east and south-east of the fort, which allows the height of the embankments compared to the natural land level to be appreciated and strategic elevated viewpoints and increased range offered by the fort. However, trees on and between the embankments and greenspace obstruct this view.• 19th century houses on the west side of Milton Place and the Gravesend Rowing Club (established 1878) reflect the streetscape as it was during the operational period of the fort and therefore contribute positively to the site's setting. <p>Negative elements of setting:</p> <ul style="list-style-type: none">• The most dominating and detractive element within setting of the site is Chantry Court, the nine-storey block of flats built in 1960. It is set on the west side of Milton Place, opposite the west entrance gates to the site and is high enough to overlook the entire gardens (Plate NTF9). It is constructed of red brick and concrete in a functional style and provides no appreciable reference to the scale, style or grain of the 19th century houses along the street.• Graffiti on guns and gun emplacements and lack of tree management i.e. mature trees obscuring important views

Site	New Tavern Fort
	<p>from the New Tavern Fort are negative features/issues identified in the Riverside Conservation Area appraisal.</p> <p>The Heritage Quay block of flats is a substantial, but more neutral element within the setting of the site. It is a recent development from the 2000s and is four storeys in height with fifth floor dormer windows. It is styled on the adjacent white-painted Gravesend Rowing Club wooden plank sheds with gabled roofs.</p>

4.2 Statement of Significance

4.2.1 The heritage values of the site that contribute to its significance were bullet-pointed in the CMP (Wessex Archaeology 2016) and this has been used to inform this report.

4.2.2 Significance as recognised by statutory designation:

- Milton Chantry and New Tavern Fort are designated collectively as a Scheduled Monument, which means they have been recognised as a nationally important heritage asset that meets the scheduling criteria (DCMS 2013, 4-5).
 - The New Tavern Fort Scheduled Monument list entry 'reasons for designation' makes it clear that the site is designated as much for its medieval history as a hospital and chantry as for its subsequent development as a military fortification.
- Individually, the Chantry and Fort are designated Grade II* buildings, which means they are recognised as particularly important buildings of more than special architectural or historic interest (DDCMS 2018, 4). NPPF identifies Grade II* listed buildings as a type of heritage asset of the highest significance (para. 194).
- The site also forms part of the Riverside Conservation Area. Conservation Areas are defined as 'areas of special architectural or historic interest the character or appearance of which it is desirable to preserve or enhance' (Planning (Listed Buildings and Conservation Areas) Act 1990, Section 69):
 - Both Gravesend Blockhouse and New Tavern Fort lie within the Riverside Conservation Area. Both sites contribute to the special interest of the Conservation Area. Specifically, they both reflect Gravesend's strategic importance as a key defensive location on the river approach to London. The New Tavern Fort represents the response to increased international tension at the end of the 18th century when the defences at Gravesend were strengthened. It 'lies at the hear[t] of the Riverside Conservation Area' (GBC 2009, 1).
 - Gordon's connection with Gravesend is also part of the special interest of the Riverside Conservation Area (GBC 2009, 1). He was responsible for a substantial remodelling of the Fort in the 1860s. In addition to his military career and infamous death in Khartoum, Gordon is an important historical figure in Gravesend because of his philanthropic and charitable work (such as

setting up alms houses and schools, teaching at the Mission House and letting out part of the Fort grounds as allotments for the poor of Gravesend).

4.2.3 The fort holds evidential value through the extant structures and buried remains that relate to the medieval hospital and later fort:

- The site is one of the few medieval hospitals to have been exactly located and that retains upstanding remains.
- It comprises an unusually complete example of 18th century fortifications which underwent development in the 19th and 20th centuries with a complete sequence of mounted guns representing each stage in its development.
- There is potential archaeological interest for buried remains of previous fort structures including Fort House, the fort hospital burial ground, elements of the medieval hospital and possibly earlier remains. Very few medieval hospitals have been examined by excavation.

4.2.4 The fort holds both illustrative and associative historical value:

- It has association with national defence from the late-18th to 20th centuries and illustrates changing and dynamic military responses to external threats
- The strategic position of the site illustrates its role in the defence of the Thames Estuary and London
- The design of the fort components and armaments is illustrative of the development of ordnance technology and military techniques and strategy from the late 18th to 20th centuries
- Its association with Colonel (later General) Gordon. This also contributes to the communal value of the site.

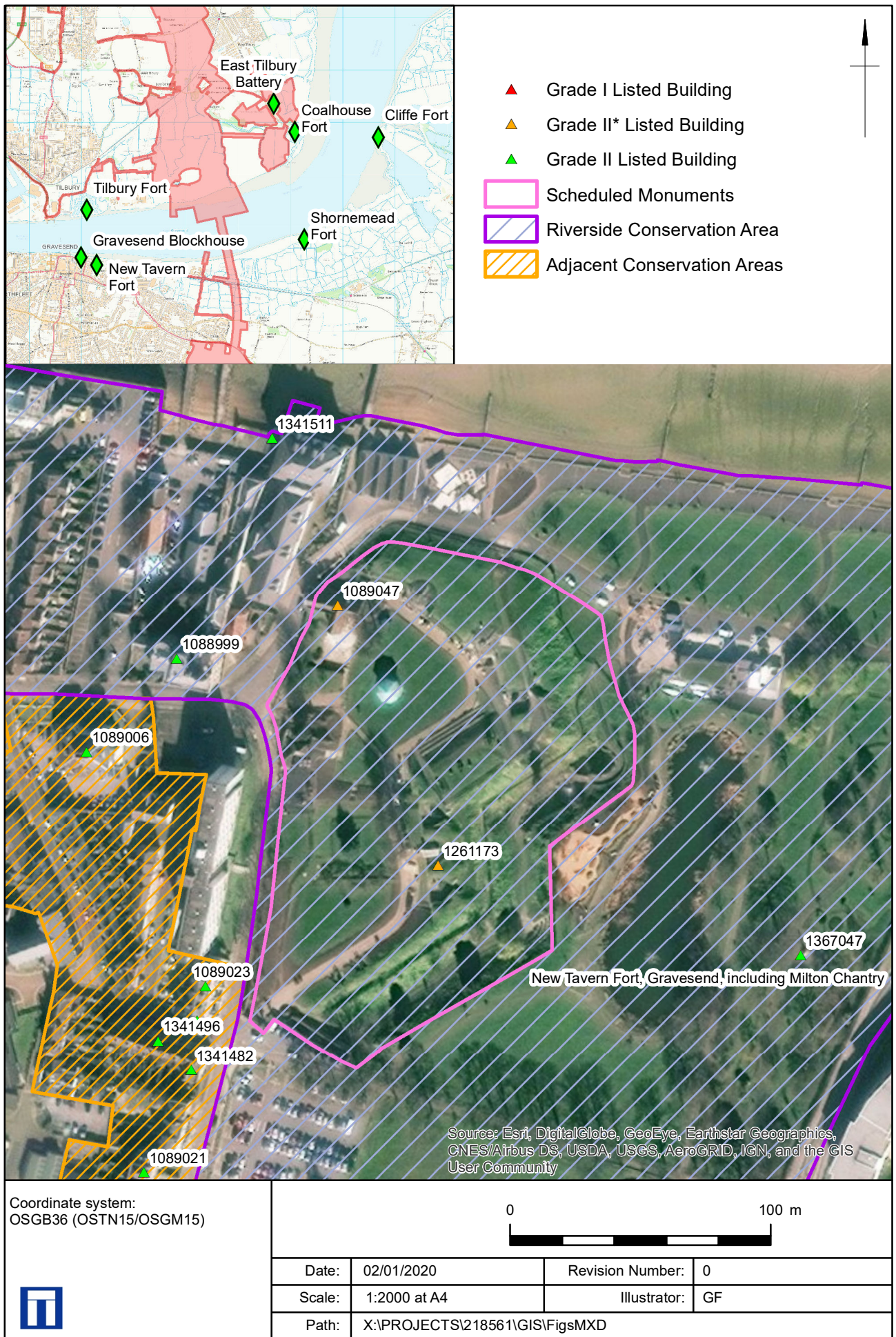
4.2.5 Aesthetic value also contributes to its significance, through the extant structures and their relationship to the surrounding landscape, the setting of the site and its visual relationship to the river and other defensive sites. Important elements or aspects of its aesthetic value are:

- The range of architectural periods and styles represented. There is a contrast between the Early English style of the Chantry (albeit mostly hidden) and the late 18th and 19th century military structures.
- The recreational garden landscape in which the fort is situated
- views towards the fort from the river parade and adjacent gardens and views overlooking the interior of the fort from its ramparts
- key views overlooking the River Thames and to Tilbury Fort

4.2.6 Communal value is a more intangible aspect of the fort's significance and difficult to gauge. The CMP (Wessex Archaeology 2016) identifies that the fort holds communal value for:

- Surviving family members of those who were stationed at the fort and for those who sheltered in the magazines in the Second World War
- Its association with General Gordon's philanthropic work with residents of Gravesend and the creation of the fort gardens as a public amenity in commemoration of him
- The social value contributed by the activity of the Thames Defence Heritage volunteers and Gravesend Borough Council and their efforts to engage with visitors.

- 4.2.7 New Tavern Fort holds group value in a national sense as part of the network of 18th century and later defensive structures along the River Thames built to protect the approach to London. It provided a pattern of crossfire with Gravesend Blockhouse and Tilbury Fort and often formed a second line of defence with these other sites.
- 4.2.8 The setting of New Tavern Fort makes a predominantly positive contribution to the significance of its heritage assets, although there are also some negative elements that detract.
- 4.2.9 The intentional views from New Tavern Fort to the river are fundamental to the military function of the site and vital to its significance. Its position in relation to Tilbury Fort and the views between these defensive sites contributes to their group value as it illustrates the close proximity and functional relationship between the two forts - working together to create a pattern of cross fire.
- 4.2.10 The dynamic topography of the Fort in relation to the relatively flat landscape of The Promenade and Riverside Leisure Area gardens to the east and south-east means that the strategic nature of Fort with its elevated intentional viewpoints and the increased range of its gun emplacements can be better appreciated. The Gordon Recreation Ground and Grade II listed statue of General Gordon make a positive contribution to significance by emphasising Gordon's historic association with the Fort.
- 4.2.11 19th century houses on the west side of Milton Place and the Gravesend Rowing Club (established 1878) reflect the streetscape as it was during the operational period of the fort and therefore contribute positively to the site's setting. At the same time, the distinct character of the fort is reinforced by contrast with the mixture of modern and historic buildings that surround it.
- 4.2.12 On the other hand, Chantry Court, the 1960s block of flats, is the most dominating and detractive element within setting of the site because of the scale, style and grain of the block is so alien in comparison to the rest of the built environment in and around the Fort. Graffiti within the Fort and lack of tree management, so that trees obscure important views, are also negative elements of the setting that detract from, or reduce the ability to appreciate the setting of New Tavern Fort.



New Tavern Fort site and designated heritage assets

Figure NTF1

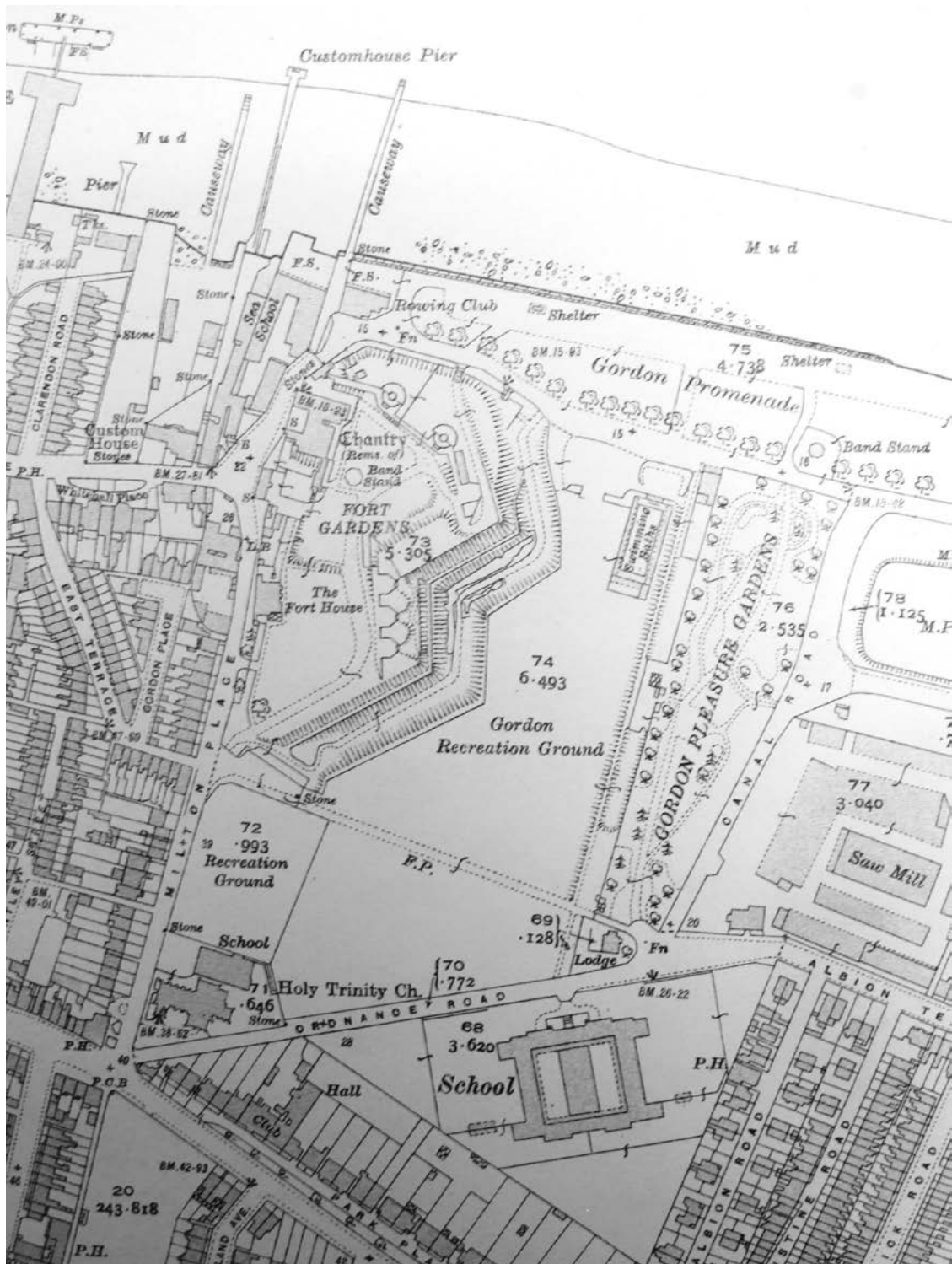


Figure NTF2: 1936 OS map showing New Tavern Fort



Plate NTF1: Milton Chantry viewed from the east



Plate NTF2: Milton Chantry viewed from the south-west



Plate NTF3: The angled battery with the bandstand and Milton Chantry on the left



Plate NTF4: The straight battery



Plate NTF5: 25 Pounder Field Gun and Bofors 40 mm AA gun on the rampart between the angled and straight batteries



Plate NTF6: Replica 12" RML gun in the straight battery



Plate NTF7: View from 6-inch gun emplacement on the angled battery looking north-east across the River Thames



Plate NTF8: View from 6-inch gun emplacement on the angled battery looking towards Tilbury Fort



Plate NTF9: View south-west across the fort with the 1960s block of flats Chantry Court in the background



5 Shornemead Fort

5.1.1 The assessment of Shornemead Fort has been primarily informed by an archaeological desk study by Victor Smith (2007).

5.2 The Site

Site	Shornemead Fort
Address	Gravesend, DA12 3HU
OS NGR	569124 174840
Statutory Designations	None
Relevant Kent HER nos. include	TQ 67 SE 63, TQ 67 SE 227, TQ 67 SE 1150, TQ 67 SE 1192, TQ 67 SE 1194, TQ 67 SE 1195, TQ 67 SE 1199, TQ 67 SE 1200
Origin period	Late 19th century (1860s-1870s)
History and function	<p>The present fort constructed between 1861 and about 1870-1, was preceded by a mid-19th fort and late-18th century battery.</p> <p>1796 battery: The earliest known military use of the site was in 1796 when a small earthen barbette battery for four guns was constructed to defend against invasion during the French Revolutionary War. It crossed fire with a similar new battery at East Tilbury and another 5 km downstream at Hope Point. The battery was demolished by 1847 to enable construction of a new fort, but it is possible that buried archaeological evidence of the battery may survive.</p> <p>1852 fort: The construction of the fort took place between 1847 and 1852. It was part of a strategy to strengthen Britain's defences that arose from a perceived political threat from France coupled with the technological threat of new steam warships. There were considerable problems during construction including sinking foundations, the dislocation and fracture of some of the buildings and landslips from the ramparts into the surrounding ditch.</p> <p>Although the 1852 fort had an advanced design, it appears to have never been structurally sound. By the late 1850s, a time of rapid evolution in military technology meant it was unable to deal with the threat posed by new ironclad steam ships armed with long range rifled muzzle-loading (RML) guns. Also, there was a renewed sense of political threat and risk of invasion from France. This situation led to the demolition of the 1852 fort to build the present one.</p> <p>The 1870 fort was constructed in response to the rapid evolution of military technology and a perceived threat of invasion from France. In Britain, the late 1840s and 1850s was a period of strategic reassessment, public anxiety concerning the intentions of the new French Third Empire and political campaigning on the</p>

Site	Shornemead Fort
	<p>subject of defence (Williams and Newsome 2011, 9). <i>The Report of the Royal Commission Appointed to Consider the Defences of the United Kingdom</i> published in 1860 led to a major and expensive programme of construction of military defences, mainly coastal fortifications. An extract from the Report presented in Appendix 2 includes the proposals for the Shornemead, Cliffe and Coalhouse Forts.</p> <p>The fort at Shornemead was built between 1861 and about 1870-1. From 1865 onwards the work was supervised by Lt. Col. (later General) Gordon in his role as Commanding Royal Engineer for the Thames District. Uncertainties about how the fort was to be completed and armed continued until at least 1868-9 and construction encountered the same subsidence and structural issues as the previous fort. In the marsh immediately west of the fort a mine depot was established (possibly by the mid-1870s) as the intention was to mine the river in wartime.</p> <p>By the late 1880s or early 1890s, the fort was adapted to protect the magazines from the new more destructive high explosive shells. This was part of broader measures for the improvement of the lower Thames forts.</p> <p>By the late 1890s a small detached battery of 2 x 6 pounder quick-firing (QF) guns was built on a mound 100 m east of the fort. By 1901-2, a pair of searchlights in concrete cells were installed 80 m north-west of the fort in order to operate the detached battery at night.</p> <p>Weapons technology continued to advance with more powerful and longer range, rapid fire breech loading guns that were favoured over RML. In the early 1900s the RML guns at Shornemead Fort were removed. The fort did not have a sufficient field of fire to justify installation of breech loaders, so it remained unarmed.</p> <p>In the 20th century, the fort was mainly used for accommodation either for those attending nearby courses at the mine depot, which had expanded and was increasingly used to teach mine warfare, or for those taking musketry firing courses on the nearby Milton range. Graffiti from visiting firing parties survives within the magazines.</p> <p>Some structures within the fort were converted or enlarged. By 1912 the south-west gun and tackle store had been converted to a wagon shed and the eastern one enlarged to become a fire engine house with attached stores. A gyn is a tripod used to assist with the lifting or mounting of ordnance. By 1930 a shell filling building behind the open battery had been converted into a store for bedding and for small arms ammunition. Figure SF2 is an OS map that shows the plan form of the fort in 1932.</p>



Site	Shornemead Fort
	<p>In the Second World War (by 1941), an emergency anti-invasion battery for 2 x 5.5-inch guns was built on the position of the earlier detached QF battery associated with the minefield. The anti-invasion battery crossed fire with a similar one added to the roof of Coalhouse Fort. At Shornemead the battery was defended in front by two pillboxes on the riverbank (KHER no TQ 67 SE 1199 and TQ 67 SE 1200).</p> <p>By late 1943/1944 a concrete embarkation hard for D-Day landing craft (KHER no. TQ 67 SE 1192) was built in front of the fort, replacing the 19th century timber landing stage. A new concrete road was built over the older cross-marsh trackway to connect the hard to the road infrastructure further south.</p> <p>There is also the remains of a concrete command post and mine watchers post (KHER no. TQ 67 SE 1194) and light anti-aircraft position for a 40mm Bofors Gun (KHER no. TQ 67 SE 1195) on the roof of Shornemead Fort.</p> <p>The decline and deterioration of the fort began in the mid-late 1950s. The majority of the fort was destroyed in a programme of explosive demolition by the army for training purposes which started circa 1960. The fort and the surrounding land continued to be owned by the War Office (later the Ministry of Defence) until 2000 when it became the property of the Royal Society for the Protection of Birds (RSPB). The site now lies within the Cliffe Pools nature reserve.</p>
Defence of the realm and relationship with other sites	<p>The 1870 Shornemead Fort is designed to cross its fire with contemporary defences Coalhouse Fort and Cliffe Fort. All three structures were constructed as part of the major 1860-80s construction programme that followed the 1860 <i>Report of the Royal Commission Appointed to Consider the Defences of the United Kingdom</i>. The report concluded that Britain was not sufficiently defended and that the coastline at risk should be fortified at key points. The structures built for this programme are sometimes referred to as Royal Commission or Palmerston Forts (after Prime Minister Henry Temple 3rd Viscount Palmerston who was involved with the project).</p> <p>An extract from the Royal Commission report is presented in Appendix 2. It includes an assessment of the importance and existing defences of the Thames area and the proposals for Shornemead, Cliffe and Coalhouse Forts. It describes how these fortifications are designed to work together as a first line of defence to prevent a hostile fleet moving further up the Thames towards London. Coalhouse Fort and the new defences at Shornemead Fort and Cliffe Fort are located either side of a narrow point in the river, approximately 1000 yards (914 m) across. In time of war a boom obstruction was to be strung across the Thames between Coalhouse Point and Cliffe Creek to control access along the river</p>



Site	Shornemead Fort
	to London. A pattern of cross fire was possible between Shornemead Fort and Cliffe Fort in Kent and Coalhouse Fort in Essex. Further west, Tilbury Fort and New Tavern Fort Gravesend were upgraded to act as a second line of defence.
Form and architectural design	<p>The desk study by Victor Smith (2007) reproduces many maps, architectural plans and sketches that illustrate the different phases and development of the site over time. It also contains a figure that shows the outlines of the 1796 battery and the 1852 Fort superimposed on a plan of the 1870 Fort (page 17).</p> <p>A plan of the 1796 battery (National Archives ref. W055/2769) is reproduced in Smith 2007, 4. The battery measured 70 by 50 m. It consisted of a low semi-circular earthen rampart sloping down to a wide glacis facing the river, with a barrack and a gunpowder magazine contained in a triangular walled off area to the rear. The barrack had space for 1 officer and 12 men. For safety the magazine was screened by an earthen bank designed to deflect any explosion. Open-topped musketry firing galleries projected from either end of the semi-circular battery and the site was enclosed by a drainage ditch which could have acted as a defensive obstacle.</p> <p>The plan form of the 1796 battery was distinctive for its period and similar examples were built along the east coast of Kent and elsewhere. It utilised new rapidly-turning traversing platforms for its guns, instead of the earlier and slower standing carriages. This illustrates the rapid advancements in ordnance technology.</p> <p>The 1852 fort was pentagonal in plan and measured 180 by 120 m. Three sides faced the river and consisted of earthworks armed with 13 x 32-pounder guns mounted on traversing platforms and fired through embrasures. The range of the fort's guns was around 3 km. Brick barracks formed the two landward sides and there was a parade ground in the centre containing three surface magazines and an underground water tank. The fort was defended by a ditch, musketry caponiers projecting from the angles between the river faces and two open-topped musketry galleries flanking the barracks.</p> <p>The 1852 fort is remarkable as the first fully-developed example of the new 'polygonal' type of defensive architecture to be built in Britain. The characteristics of this type are a plan formed of straight lines of ramparts forming a polygon of any given number of sides with ditch flanking caponiers projecting from the angles.</p> <p>Captain Charles Siborne RE (Royal Engineer) was responsible for designing or supervising the Thames and Medway Royal Commission forts (FAS Heritage 2017a, 19).</p>



Site	Shornemead Fort
	<p>The present fort was built between 1861–70. Construction encountered structural issues and had to be delayed and temporarily suspended while the fort was substantially redesigned. As built, the 1870 fort measured 140 x 95 m. It had an arc of 11 granite-faced gun casemates with iron shields, an annexed 3-gun open embrasure battery at the up-river end and the rear of the fort closed by a defensible barracks faced in Kentish ragstone. Parts of the barracks were built over the foundations of the 1852 fort. There were magazines at basement level under the casemates and open battery with lift shafts to raise the ammunition to the guns. The casemates were armed with 11-inch RMLs and the open battery had 9-inch ones. They were fronted by a deep ditch flanked by three projecting infantry caponiers. A very thick raft of concrete was laid under the casemates, open battery and the magazines. with associated deep piling to deal with the less than stable ground conditions. The enclosed parade contained several structures including two gun and tackle stores. Most of the supplies were probably brought by river to a timber landing stage and unloaded on a truck mounted on a railway track into the fort.</p> <p>In the late 1880s/early 1890s the ditch was infilled, and a thick concrete apron was added to the sill of each gun port to protect the magazines.</p>
Present condition, surrounding landscape and setting	<p>Parts of the 1870s fort remain extant including the front of the casemates and the open battery, the underlying magazines and part of the south-west corner of the barracks. The WWII detached anti-invasion battery was demolished by the late 1970s, but the two pillboxes survive. There is also potential for archaeological remains related to the 1796 battery, the 1852 fort and the mine depot.</p> <p>The fort is located within an isolated area of marshland, now part of a nature reserve. It can be approached from the south via a bridleway or along the river via the Saxon Shore Way. The land to the south of the fort is a rifle range which was built in 1860 and modernised in 1898 for army musketry training and is now a Metropolitan Police training facility (Smith, no date).</p> <p>Despite its partial demolition, the upstanding remains form an impressive and imposing ruin. The façade of the casemate is particularly impressive, but is partly obscured by trees and shrub vegetation. Information about the materials and method of construction can be gathered from areas that have been truncated e.g. the roof of the casemate. The metal fittings within the gun emplacements survive to varying degrees. The fort is covered in graffiti, which adds to its sense of dereliction. The lift shafts are incompletely covered with rubble and litter has been dropped into the magazines below.</p> <p>There are long views across the marsh to and from the fort as well as inter-visibility with Coalhouse and Cliffe Forts. Views through the</p>



Site	Shornemead Fort
	gun emplacements demonstrate the fort's field of fire and are important to its significance, but many are blocked by vegetation.

5.3 Statement of Significance

5.3.1 Shornemead Fort is a non-designated heritage asset.

5.3.2 It is the only assessed site that does not include a designated heritage asset. Other contemporary sites (Coalhouse Fort and Cliffe Fort) are designated as Scheduled Monuments. Based on its heritage value (described below) and comparison with similar sites, it is likely that Shornemead Fort is a non-designated heritage asset of national importance but does not fit the criteria for statutory designation.

5.3.3 The significance of the fort is defined by its evidential and historic value and to a lesser degree aesthetic value. This can also be expressed as archaeological, architectural and historic interest.

5.3.4 The fort holds evidential value and archaeological interest related to:

- Its association with national defence from the latter half of the 19th and 20th centuries and it illustrates changing and dynamic military responses to external threats
- The potential archaeological remains of the 1796 battery, 1852 fort, demolished parts of the present (1870) fort, the nearby mine depot and detached battery
- Comparison and contrast with contemporary defensive structures built in the 1860s-1880s as a result of the 1860 Royal Commission report

5.3.5 It holds both associative and illustrative historic value:

- It has association with national defence from the latter half of the 19th and 20th centuries and illustrates changing and dynamic military responses to external threats, specifically, the major construction programme of military defences that followed the 1860 Report of the Royal Commission Appointed to Consider the Defences of the United Kingdom
- It is illustrative of 19th century construction techniques specifically the architectural form, materials and construction methods to build a Royal Commission fort
- The fort, along with its contemporaries Cliffe and Coalhouse, is the last of the coastal forts with casemated batteries and iron shields to be completed in the United Kingdom as a result of the recommendations of the 1860 Royal Commission.
- The successive batteries and forts are illustrative of the rapid evolution of ordnance technology

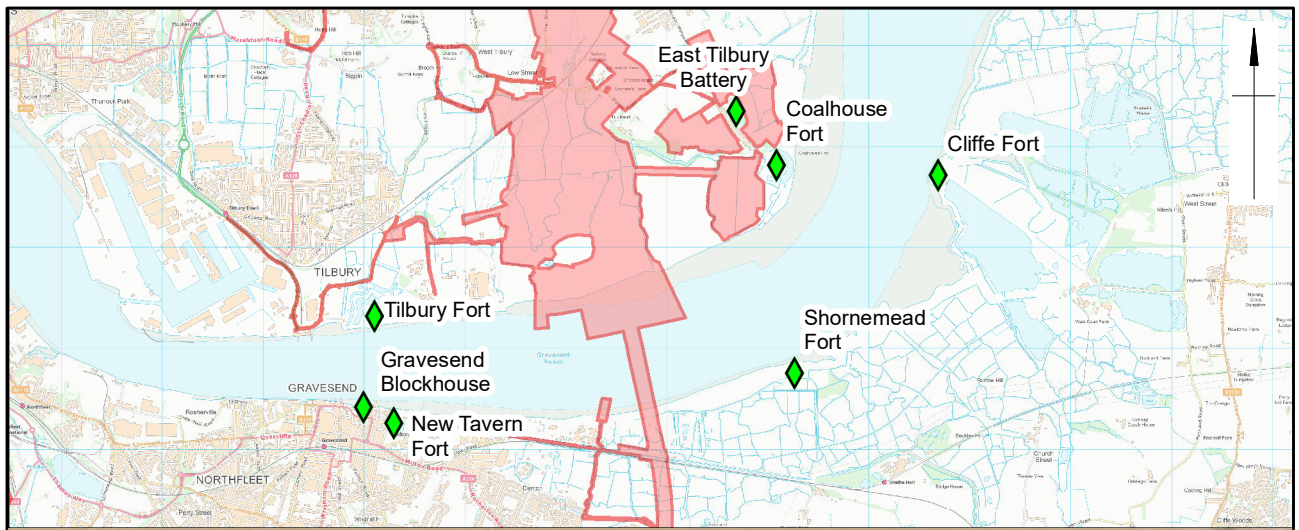
5.3.6 The fort holds aesthetic value as an impressive derelict ruin in an isolated setting.

5.3.7 Shornemead Fort has group value with the contemporary defences at Coalhouse Fort and Cliffe Fort with which it crossed its fire and formed a first line of defence on the river



approach to London. In a broader national sense, all of these sites are part of the major construction programme of military defences during the latter half of the 19th century and form part of a wide network of coastal batteries and forts at key defensive locations.

- 5.3.8 The isolated, open landscape of the nature reserve that surrounds the Fort contributes positively to the appearance and aesthetic interest of the site as an impressive derelict ruin. The tranquillity of the environment allows for it to be experienced with few distractions apart from occasional wildlife and other visitors (mostly walkers along the coastal path, sometimes with dogs).
- 5.3.9 Views across the River and inter-visibility with Coalhouse and Cliffe Forts are fundamental to Shornemead Fort's military function and vital to its significance. These important views illustrate the functional relationship and group value of these three sites. Views through the gun emplacements demonstrate the Fort's field of fire and are important, but many are blocked by vegetation that detracts from the ability to appreciate the Fort's significance. The survival of the rifle range (now a police training facility), the D-Day landing hard and pillboxes places the Fort in historic context within a wider landscape of military activity.
- 5.3.10 The graffiti and growth of brambles, shrubs and other vegetation on and around the structure contributes to its ruinous aspect, but at the same time obscures parts of the asset and the vegetation obstructs important views. So, these elements make both positive and negative contributions to different aspects of the Fort's significance.



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Shornemead Fort site

Figure SF1

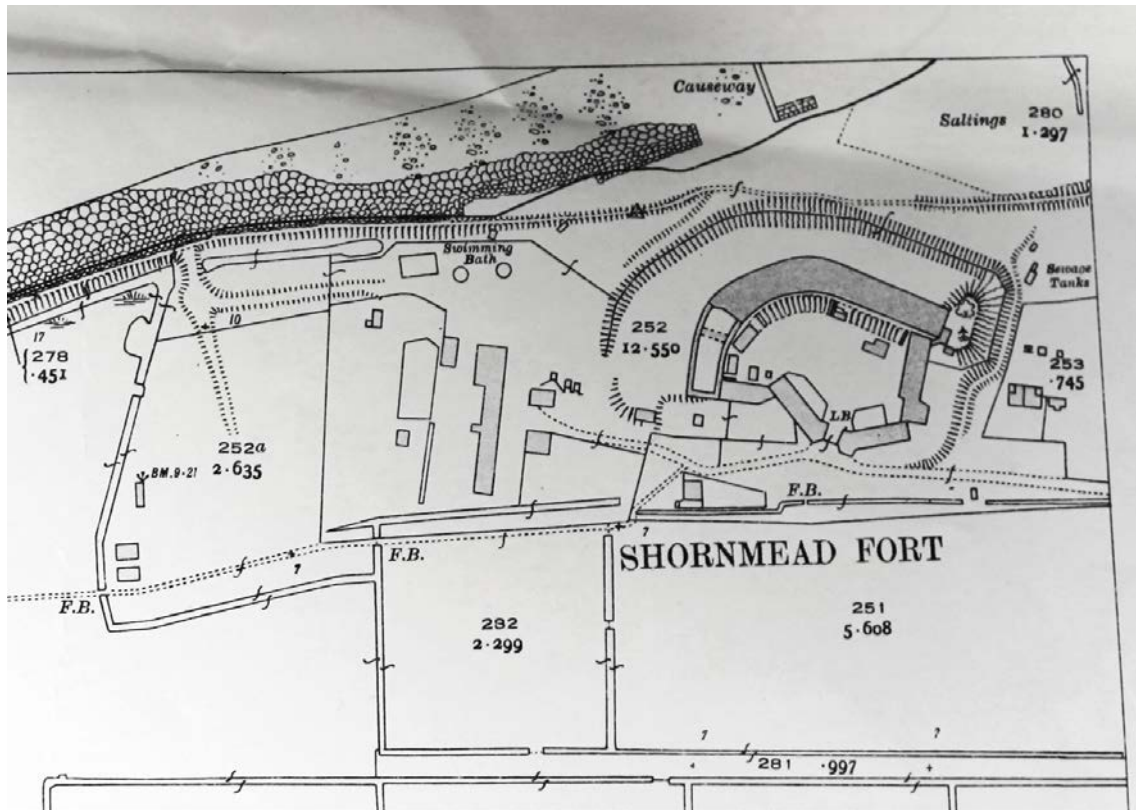


Figure SF2: 1932 OS map showing 'Shornmead Fort'



Plate SF1: Shornmead Fort casemate



Plate SF2: Interior of the fort showing the rear of the casemate



Plate SF3: The open battery



Plate SF4: View of the gun emplacements and construction layers of the casemate. The concrete rubble in the centre hides a lift shaft to the magazines below. The remains of the WWII command post and mine watchers post is visible on the roof.



Plate SF5: Detail view of a gun emplacement showing the survival of metalwork



Plate SF6: View from the open battery towards Tilbury Docks



Plate SF7: Shornemead Fort and its two associated pillboxes



6 Cliffe Fort

6.1.1 The assessment for Cliffe Fort has been primarily informed by two sources:

- A very detailed investigation and analysis of Cliffe Fort published by Historic England in 2011 (Williams and Newsome)
- The website 'Cliffe History: Cliffe Fort' which provides a summarised account of its history and development

6.2 The Site

Site	Cliffe Fort		
Address	On the Hoo Peninsula, Medway ME3 7SZ		
OS NGR	570675 176724		
Statutory heritage designation(s)	Scheduled Monument	List Entry No. 1003403	Cliffe Fort
Relevant Kent HER nos. include	TQ 77 NW 25, TQ 77 NW 1015, TQ 77 NW 1124, TQ 77 NW 1205, TQ 77 NW 1207, TQ 77 NW 1201, TQ 77 NW 1208, TQ 77 NW 1213, TQ 77 NW 1212		
Origin period	Late 19th century (1860s-1870s)		
History and function	<p>Cliffe Fort was constructed between 1860 and 1874. Cliffe Fort, like Shornemead, encountered structural problems because of the unstable and marshy ground condition such as tilting and cracking of the foundations and basement levels. Construction work was suspended between 1865 and 1969 while the plans for Cliffe and Shornemead Forts were extensively redesigned.</p> <p>By the 1880s the Thames forts were fast becoming obsolete in the face of rapidly evolving military technology. At Cliffe Fort, modifications were made to the casemate, ditch and glacis to better protect the magazines. The number of RML guns was reduced and after 1895 new quick-fire gun emplacements were added to the roof. The armaments at the fort were periodically altered/updated, with a move from RML to breech loading quick fire guns.</p> <p>In the late 1880s, one of the magazines was converted into a launching station for the Brennan Torpedo. The Brennan torpedo was the world's first practicable guided weapon. It was operated by the Royal Engineers at eight sites for the defence of harbours or estuaries in the United Kingdom and overseas between 1890 and 1906. The installation at Cliffe Fort is one of the best preserved.</p>		

Site	Cliffe Fort
	<p>In the First World War, the existing 12 pdr. guns were replaced by two 6-inch breech-loading Mk. VII guns on the fort's roof, which in turn were replaced near the end of the war by four QF guns.</p> <p>The fort was disarmed prior to 1936 and sold to the Alpha Cement Company who operated the adjacent cement works.</p> <p>The fort was temporarily rearmed during the Second World War. Two 4" BL guns for use against enemy aircraft were installed and provision was made to flood the marshes with river water by breaching the flood defence walls to create an obstacle for enemy troops. It was used as a base for the Royal Naval Auxiliary Patrol service that provided small craft to patrol the Thames, watch for mines, direct shipping and provide a defence with light weapons against enemy aircraft. Cliffe Fort provided mooring, stores, accommodation and a command centre (Williams and Newsome 2011, 216).</p>
Defence of the realm and relationship with other sites	<p>The fort was constructed as part of the major 1860-80s construction programme that followed the 1860 <i>Report of the Royal Commission Appointed to Consider the Defences of the United Kingdom</i>. The report concluded that Britain was not sufficiently defended and that the coastline at risk should be fortified at key points. The structures built for this programme are sometimes referred to as Royal Commission or Palmerston Forts (after Prime Minister Henry Temple 3rd Viscount Palmerston who was involved with the project).</p> <p>An extract from the Royal Commission report is presented in Appendix 2. It includes an assessment of the importance and existing defences of the Thames area and the proposals for Shornemead, Cliffe and Coalhouse Forts. It describes how these fortifications are designed to work together as a first line of defence to prevent a hostile fleet moving further up the Thames towards London. Coalhouse Fort and the new defences at Shornemead Fort and Cliffe Fort are located either side of a narrow point in the river, approximately 1000 yards (914 m) across. In time of war a boom obstruction was to be strung across the Thames between Coalhouse Point and Cliffe Creek to control access along the river to London. A pattern of cross fire was possible between Shornemead Fort and Cliffe Fort in Kent and Coalhouse Fort in Essex.</p> <p>Further west, Tilbury Fort and New Tavern Fort Gravesend were upgraded to act as a second line of defence.</p>
Form and architectural design	<p>In common with other fortification works of this period the defences were built by a series of contractors supervised by nominated officers of the Crown. It appears that Captain Charles Siborne RE was responsible for designing or supervising the Thames and Medway Royal Commission forts, including the one at Cliffe and</p>

Site	Cliffe Fort
	<p>the works in the Thames district were supervised by the Chief Royal Engineer (CRE) Gravesend.</p> <p>Cliffe Fort, along with its contemporaries Shornemead and Coalhouse, were the last of the coastal forts with casemated batteries and iron shields to be completed in the United Kingdom (ibid 219). Similar to Shornemead Fort, it is a mix of concrete, brick and imposing granite construction. Details about the various components of the fort are provided in Williams and Newsome 2011.</p>
Present condition, surrounding landscape and setting	<p>The fort is currently in the ownership of the adjacent aggregate works and there is no public access to the site. It was only possible to view the exterior of the Fort from the riverside footpath which is part of the Saxon Shore Way.</p> <p>Cliffe Fort is on the heritage at risk register, which states its condition as 'very bad'. The fort is flooded. While the majority of the structure is stable due to its massive construction, significant detail is vulnerable to decay or heritage crime e.g. graffiti. Also, the remains of Brennan Torpedo Rail are vulnerable to erosion (Heritage at Risk register).</p> <p>Historically there was an industrial site (cement works) adjacent to the north-east of the Fort. Now, Cliffe Fort is surrounded by aggregate works. From a distance it is the industrial machinery and mounds of aggregate that are visible, while the fort is low-lying and considerably obscured. The fort becomes more clearly visible when approaching it from south-west along the Saxon Shore Way footpath, but the aggregate works still dominate the views. At close range smaller mounds of aggregate around the fort, vegetation in the ditch and glacis and security fencing obscure the fort to a greater or lesser degree depending on viewpoint. The noise and smell from the aggregate works add to its dominance of the setting at close range.</p>

6.3 Statement of Significance

- 6.3.1 Cliffe Fort is a Scheduled Monument, which means it has been officially recognised as a nationally important heritage asset.
- 6.3.2 The significance of the fort is defined by its evidential and historic value. This can also be expressed as archaeological, architectural and historic interest. Its aesthetic value is limited because of its current condition and setting.
- 6.3.3 The historical value of Cliffe Fort is both illustrative and associative and inextricably linked to its military defensive purpose and Britain's international relationships and policy.

- Its association with the major construction programme of military defences that followed the 1860 *Report of the Royal Commission Appointed to Consider the Defences of the United Kingdom*;
 - The fort, along with its contemporaries Shornemead and Coalhouse, is the last of the coastal forts with casemated batteries and iron shields to be completed in the United Kingdom as a result of the recommendations of the 1860 Royal Commission.
 - It is illustrative of 19th century construction techniques specifically the architectural form, materials and construction methods to build a Royal Commission fort
 - The modifications to the fort and its armaments are illustrative of the rapid evolution of ordnance technology and defensive strategy

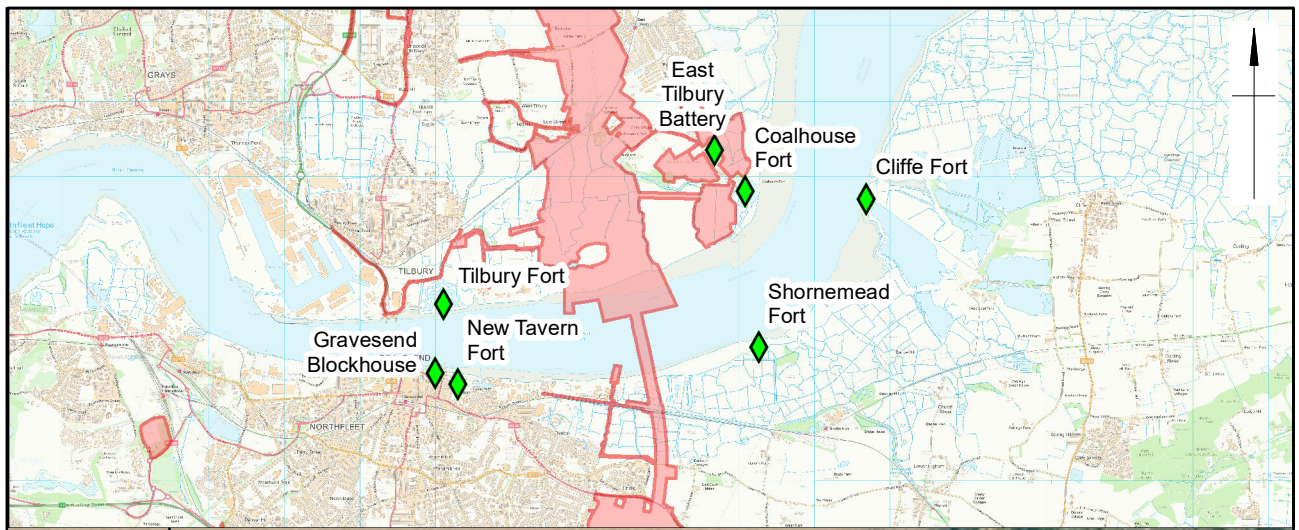
6.3.4 The level of survival and limited modification of Cliffe Fort are important aspects of its significance and form part of its evidential value.

- Despite some almost immediate alterations to the basement magazines, limited alterations and alternative use in the 20th century has preserved a number of areas in the fort that reflect its late 19th century use; similarly, a First World War battery at the north end of the roof has been left in almost its wartime condition.

6.3.5 An aspect of great importance is the survival of the rare Brennan Torpedo installation, the world's first practicable guided weapon, which makes a major contribution to the evidential and historic value and significance of the site. The torpedo installation at Cliffe Fort is one of the best-preserved examples. It retains all its machinery rooms; boiler, engine and torpedo store, in relatively good condition although there is little evidence for the torpedo's operating machinery (Williams and Newsome 2011, 220).

6.3.6 Cliffe Fort has group value with the contemporary defences Shornemead Fort and Coalhouse Fort, with which it crossed its fire and formed a first line of defence on the river approach to London. In a broader national sense, all of these sites are part of the major construction programme of military defences during the latter half of the 19th century and form part of a wide network of coastal batteries and forts at key defensive locations.

6.3.7 The current setting of the Cliffe Fort makes both positive and negative contributions to its heritage significance. The position of the fort and its relationship and inter-visibility to the contemporary defences at Coalhouse and Shornemead are aspects of its setting that are vital and contribute positively to its significance. However, the poor condition of the fort and its immediate environment, surrounded and overwhelmed by the industrial activity of the aggregate works, negatively affects the ability to appreciate its significance.



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Cliffe Fort site and designated heritage assets

Figure CLF1

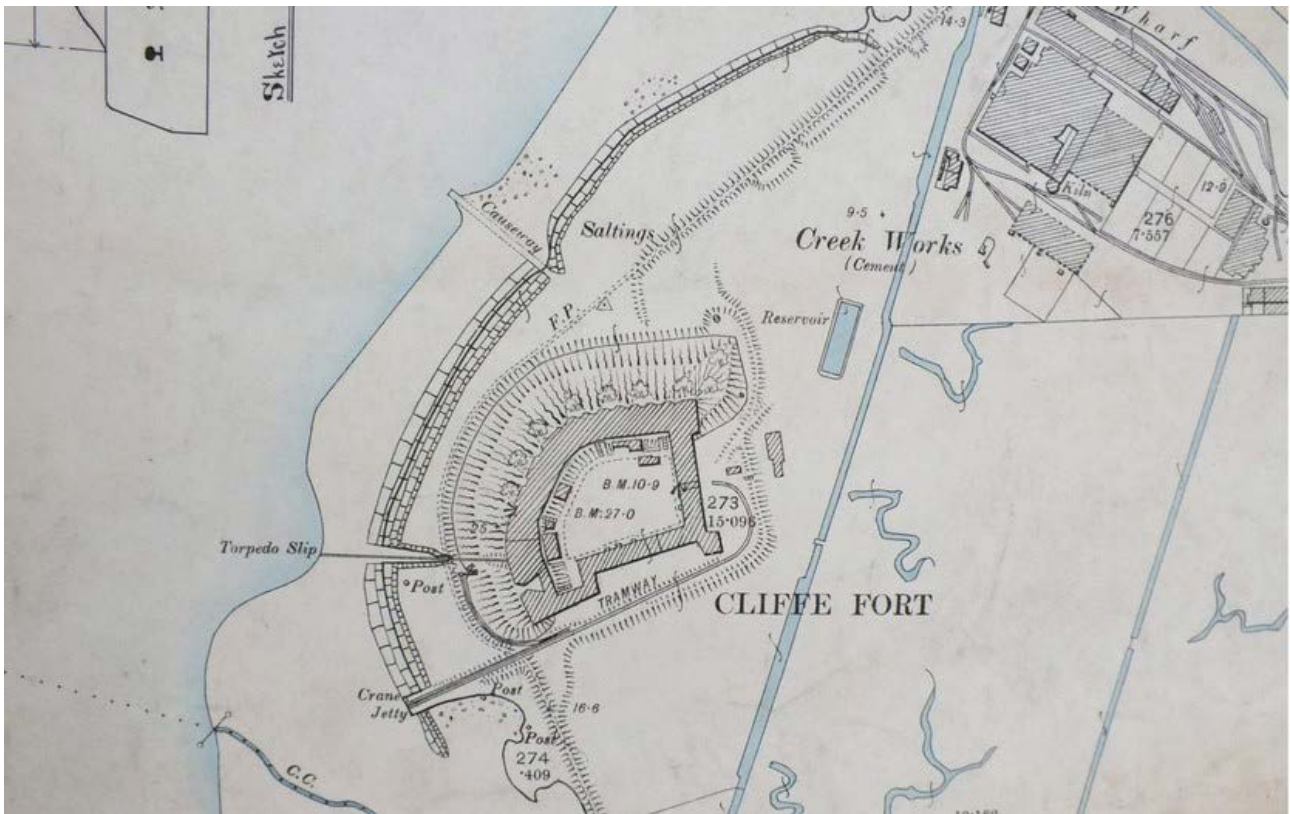


Figure CLF2: 1897 OS map showing Cliffe Fort



Plate CLF1: View of Cliffe Fort from the Saxon Shore Way footpath



Plate CLF2: Close range view of the south side of the fort



Plate CLF3: The fort obscured behind security fencing and vegetation



Plate CLF4: Access around the north side of the fort. The fort is partially visible on the right.



Plate CLF5: The north-east corner of the fort



Plate CLF6: The Brennan Torpedo slipway



7 Tilbury Fort

7.1 The Site

7.1.1 The baseline description of Tilbury Fort has been primarily informed by the *Tilbury Fort Conservation Plan Draft v1* (Baxter 2018).

Site	Tilbury Fort		
Address	The Fort, Tilbury, Essex, RM18 7NR		
OS NGR	565152 175504		
Statutory heritage designation(s)	Scheduled Monument	List Entry No. 1021092	Tilbury Fort
	Listed Building - Grade II*	List Entry no. 1375568	Officers Barracks Tilbury
Relevant Essex HER nos.	MEX6047, MEX6052, MEX41440, MEX31803, MEX31804, MEX1038594		
Origin period	Tilbury Blockhouse - Mid-16th century Tilbury Fort - Late 17th century Officers Barracks - Mid-18th century		
History and function	<p>Tilbury Fort is largely late seventeenth-century in layout. It contains standing fabric from the 17th to 20th centuries and earlier buried remains of a 16th century blockhouse.</p> <p>The original purpose of the Blockhouse and subsequent fort was to protect London from an invasion force along the River Thames, and to secure the strategic river crossing from Tilbury to Gravesend. The location continued to be of strategic importance, so the fort was periodically improved and re-armed up until the beginning of the 20th century. Its history involves long periods with little to no change interspersed by rapid development prompted by (real and perceived) threats of invasion. Defences and armaments were upgraded to meet evolutions in ordnance technology and military tactics and buildings within the fort were removed or added as required to meet military requirements.</p> <p>The Blockhouse was constructed in 1539-40 for Henry VIII. It was one of five blockhouses along the River Thames, and it crossed its fire with the Gravesend and Milton Blockhouses on the south side of the river. Tilbury Blockhouse was initially armed for 13 years and by 1558 was reportedly in poor condition. In 1588 the blockhouse was repaired and strengthened with elaborate earthworks designed by Federico Gianibelli, an Italian engineer. However, the</p>		



Site	Tilbury Fort
	<p>earthworks were not maintained and by the 1630s were mostly flattened, leaving the Blockhouse and its moated enclosure.</p> <p>In the 17th century Charles II initiated a review of England's coastal defences. Sir Bernard de Gomme, his Chief Engineer, was charged with building or rebuilding several large fortifications. The first known design is dated 1662 but no action was taken until after the Dutch raid on Chatham in 1667, which highlighted the need for better defences. The fort was constructed between 1670 to c.1685. It was armed by 1680 while construction work was ongoing. The proposed riverside bastion remained unbuilt so de Gomme's design was never fully completed. Most of the early buildings within the fort have been lost, but the remains of a powder magazine may survive within the east bastion. The Water Gate and Landport Gate were completed by 1683. After 1685, the emphasis of the fort was as an ordnance store. The blockhouse was converted to a powder magazine in 1691-92.</p> <p>In the 18th century, the role of the fort expanded as an ordnance depot. The storage and distribution of guns, ammunition and other military equipment continued to be its main activity up to the end of the Second World War. Between 1715 and 1750, the fort became an ordnance depot; new gunpowder magazines were built, existing buildings adapted and some of the original buildings were rebuilt, including the Guard House and Chapel and the barracks.</p> <p>In 1778 the Thames defences were reassessed. This prompted improvements to increase Tilbury's firepower, as well as the construction of New Tavern Fort at Gravesend. The plans for improvement were more extensive than the work carried out, which entailed the extension of the curtain wall and creation of a new battery on the outer defences.</p> <p>Between 1868 and 1876, the defences at Tilbury were upgraded as part of the major construction programme of military defences following the 1860 <i>Report of the Royal Commission Appointed to Consider the Defences of the United Kingdom</i>. This effectively relegated Tilbury Fort and New Tavern Fort at Gravesend to a second line of defence. New gun emplacements were built in the west, north-east and east Bastions, served by underground magazines; the bastion walls were earthed up to protect them from naval bombardment. The fort was armed with new RML guns and the position of the emplacements meant the fort could fire both long range and short range, in case an invading force made it past the defences further down river.</p> <p>In the late 19th century, Tilbury Fort's defensive role was effectively superseded by other forts and it became a 'mobilisation centre' run by the Army Ordnance Department.</p>



Site	Tilbury Fort
	<p>Between 1900 and 1904 the fort's armaments were improved involving construction of a new battery of 6-inch guns in the east bastion and four 12-pounder QF guns in the south-east Curtain, replacing two of the 1868-76 emplacements.</p> <p>Soon after it was decided that the secondary line of defence was redundant, and the River Thames was defended well enough by other means. By April 1907 Tilbury Fort had been disarmed.</p> <p>In the First World War the fort acted initially as barracks for troops travelling to France. In October 1915 it was officially designated as an Ordnance Depot and by the end of the war it was used as a receiving depot for artillery returning from the front.</p> <p>The army left the fort in 1931 and it remained unoccupied for several years before the army returned in 1938 in anticipation of war. The fort's main use in the Second World War was as a storage depot for the Army and later the Navy.</p> <p>After the War, in 1948 the fort was transferred to the Ministry's Ancient Monuments Department. There followed a programme of removal of buildings and structures that were not considered to be part of the historic interest of the site and conservation of the remaining structures. Most of the demolished structures dated to the 19th century.</p> <p>Tilbury Fort was officially opened to the public on 20 May 1958, and the last major phase of works was carried out between 1974 and 1982 as part of a new strategy for conserving and presenting the fort. This included construction of the river wall and new bridges over the Inner Moat to give access via the Landport Gate, which were based on eighteenth-century drawings. The fort re-opened in 1982.</p>
Defence of the realm and relationship with other sites	<p>Tilbury Fort has been associated with national defence from the mid-16th to 20th centuries. It is located opposite Gravesend at the mouth of the Thames Estuary where the river narrows. Tilbury Fort is positioned so as to protect the approach to London via the River Thames as well as the crossing between Tilbury and Gravesend. It works in combination with defences on the south side of the river in Gravesend, forming a pattern of crossfire with New Tavern Fort and the Gravesend Blockhouse.</p>
Form and architectural design	<p>Tilbury is a state-of-the-art 'bastion system' late-17th century artillery fort. The regular plan form means that each side was equally well defended. The bastions have four faces, carefully angled so that the defending artillery and infantry had a clear view of the approaches to the fort and the ground immediately in front of it. It was additionally defended by moats and further revetted lines of defence. Also, the area beyond the moats could be flooded;</p>



Site	Tilbury Fort
	<p>indeed, water management formed a significant part of the fort's system of defences.</p> <p>The standing buildings and structures range from the 17th-19th century. The 19th century buildings are mostly of limited architectural interest, but the earlier structures possess interest in their design, construction, craftsmanship and decoration (Plates TF1-4).</p> <p>The Portland Stone façade of the Water Gate is the architectural highlight of the fort (Plate TF1). It is a high quality 17th century classical design, although some of the detailing is decayed. It has similarities to an earlier gatehouse at Plymouth Citadel and is inspired by contemporary European and particularly French design. It demonstrates the importance of the relationship of the fort with the river.</p>
Present condition, surrounding landscape and setting	<p>The site is managed by English Heritage and open to the public as a visitor attraction. Access into the fort is controlled through the guardhouse. Many buildings have signage to indicate their purpose and date of development and there are numerous display boards mounted around the site. One of the Gunpowder Magazines houses an exhibition. Most of the standing structures and armaments are located on the high ground at the edges of the fort with the low open space of the parade ground at its centre. The fort walls are surrounded by the moats and marshland, with the River Thames to the south.</p> <p>The immediate riverside location and marshland around Tilbury Fort remains essentially unchanged, apart from the addition of the modern river-defences between the fort and the river. The marshland landscape is historic in origin, having been reclaimed in the early post-medieval period (Place Services 2019, 108). The views across the river to the Kentish forts from the fort walls or from the river-wall itself is still intact.</p> <p>The wider setting of the fort has been substantially degraded by development. For most of its history the fort was surrounded by marshland with little development or infrastructure in the area. By the end of the 19th century there were a string of small settlements situated on the ridge line above the marsh and development associated with the railway but the area of marshland around the fort was still very large.</p> <p>There has been a considerable amount of development around the fort in the 20th and 21st century. Small villages have expanded rapidly and there has been a substantial increase in industrial activity including the docks, a power station and various factories that means that most of the riverbank east of Tilbury Fort is now developed.</p>

Site	Tilbury Fort
	<p>Near the south-west corner of the fort (adjacent to the car park and entrance drive) is the Grade II Listed The Worlds End Inn (list entry no. 1111632), a late 17th or early 18th century house altered in the 19th century. Samuel Pepys mentions visiting a tavern here, which may be the same building.</p> <p>Place Services (2019, 101-110) identify several elements in the surrounding landscape such as a sewage works and Tilbury Docks that intrude visually, aurally, and olfactorily within the setting of Tilbury Fort and negatively impact the setting of the fort to varying degrees. Tilbury Power Station, which previously blocked views between Coalhouse Fort and Tilbury Fort was demolished in stages between 2017 and March 2019, but the redevelopment of the site has the potential to impact this view again.</p> <p>Important, principal and significant views of Tilbury Fort are identified in the CMP (Baxter 2018, 22-23) and Place Services assessment (2019, 101). These include:</p> <ul style="list-style-type: none"> • a view from Gravesend near the Blockhouse (Plate GB3-4) • views in the river from the ferry crossing (to the south-west of the fort) • views within the fort looking across the parade ground (Plate TF5) • views across the defensive moats to the wider marshland landscape (i.e. view 4 in Place Services 2019, 101, 105) • views towards the fort focussed on the Water Gate and from the north-east (Plates TF1 and 7; view 5 in Place Services 2019, 101 and 106) • views from the fort bastions and batteries (Plates TF8-9) <p>Aerial views of the fort are also important, striking images that enable a holistic view of the plan form of the fort not possible from the ground (Figure TF1; Baxter 2018,19 and view 6 in Place Services 2019, 101 and 109).</p>

7.2 Statement of Significance

- 7.2.1 An explanation and summary of the significance of Tilbury Fort was presented in the Tilbury Fort Conservation Plan Draft v1 (Baxter 2018) and has informed this assessment.
- 7.2.2 Tilbury Fort is a nationally important heritage asset described as ‘England’s most spectacular surviving example of a late 17th century coastal fort’ (List entry 1021092).
- 7.2.3 The fort as a whole is designated as a Scheduled Monument and the reasons for designation highlight aspects that contribute to its significance:

Tilbury Fort is England’s most spectacular surviving example of a late 17th century coastal fort, designed at a time when artillery had become the dominant feature of

warfare and therefore built with massive low earthworks, resilient to the shock of bombardment, instead of stone fortifications. The layout and construction was geared to the optimum siting of cannon at the forward batteries which, in conjunction with batteries on the opposing bank of the Thames, could create a field of fire spanning the estuary providing defence for the river itself and the capital. The systems of bastions and complicated outworks defending the batteries from the rear is principally a Dutch design, extremely rare in England, and Tilbury is the best preserved and most complete example of the type.

The fort still retains many of its original internal features with most of the main buildings surviving as standing structures. The magazines are especially notable, as they are rare survivals of a very unusual building type. The buried remains of further structures, associated both with the operation of the 17th century fort and the Tudor blockhouse, will also survive within the fort. The remains of the blockhouse, and of features related to its operation, are important as they represent one of the earliest types of structure built exclusively for the use of artillery in warfare. Only 27 examples are known to survive, in a variety of conditions ranging from buried foundations to incorporation in later military constructions. All such examples with substantial archaeological remains are considered nationally important. At Tilbury Fort, the remains of the blockhouse are particularly significant given that this structure was retained as a component of the 17th century defences.

The foreshore contains waterlogged deposits, including wooden piling which will provide technical information on the construction techniques of the fort and permit detailed dendrochronological dating. The large quantity of contemporary documentation provides a detailed picture of the occupation of the fort and its development, both as a position of foremost strategic importance in the defence of the approach to London, and as part of a larger system of associated forts in the Thames and Medway area. The alterations to the defences resulting from the recommendations of the 1859 Royal Commission place Tilbury within the largest maritime defence programme since the time of Henry VIII. This programme, prompted by fears of French naval expansion, ultimately involved some 70 new and upgraded coastal forts and batteries, colloquially known as 'Palmerston's follies'. They formed the visible core of Britain's coastal defence systems well into the 20th century, many of which were still found to be of use by World War II. Features at Tilbury which represent this final military phase (principally the pillbox on the western perimeter of the site), are considered to be an integral part of the fort's history.

- 7.2.4 Tilbury Fort is rich in evidential, historic and aesthetic value, which can also be expressed as historic, architectural, artistic and archaeological interest. A recent assessment of the significance of the setting of the Scheduled Monuments of Thurrock (Place Services 2019, 101-110) defines the significance of Tilbury Fort by its archaeological and historic interest.
- 7.2.5 The most important aspects of the significance of Tilbury Fort (as summarised by Baxter, 2018) often hold/express more than one type of heritage interest. These aspects are listed below with the heritage interests they express as a suffix in brackets.
- Tilbury Fort is a rare surviving example of a well-preserved 17th century fortification, with even rarer surviving outworks (evidential and illustrative historic value);
 - It exemplifies the 'bastion system' of fortification. This system was modelled on defences developed in the Low Countries and was the basis of Sir Bernard

de Gomme's fortifications designed for Charles II at Tilbury, Portsmouth, Plymouth and elsewhere (Baxter 2018, 36). The system is extremely rare in England and Tilbury is the best preserved and most complete example of the type (Place Services 2019, 104).

- The continual re-use and adaptation of the site for the same purpose is an important part of its history (evidential and illustrative historic value);
- It has association with national defence from the mid-16th to 20th centuries and illustrates changing and dynamic military responses to external threats (historical value);
- Surviving structures, earthworks and the fragmentary survival of fixtures illustrate the development of military technology and theory, in particular land-based defence against naval attack (archaeological interest and historical value);
- The surviving buildings in the fort have architectural and artistic interest. In particular the Water Gate 17th century gatehouse and the Gunpowder Magazines, which are rare early examples of this building type. This forms part of its evidential, illustrative historical and aesthetic value; and
- The impressive aerial views of the fort and surrounding moats, the landscape of the 19th century earthworks, the riverside and marshland setting including the sights and sounds of the working river express the fort's outstanding aesthetic value.

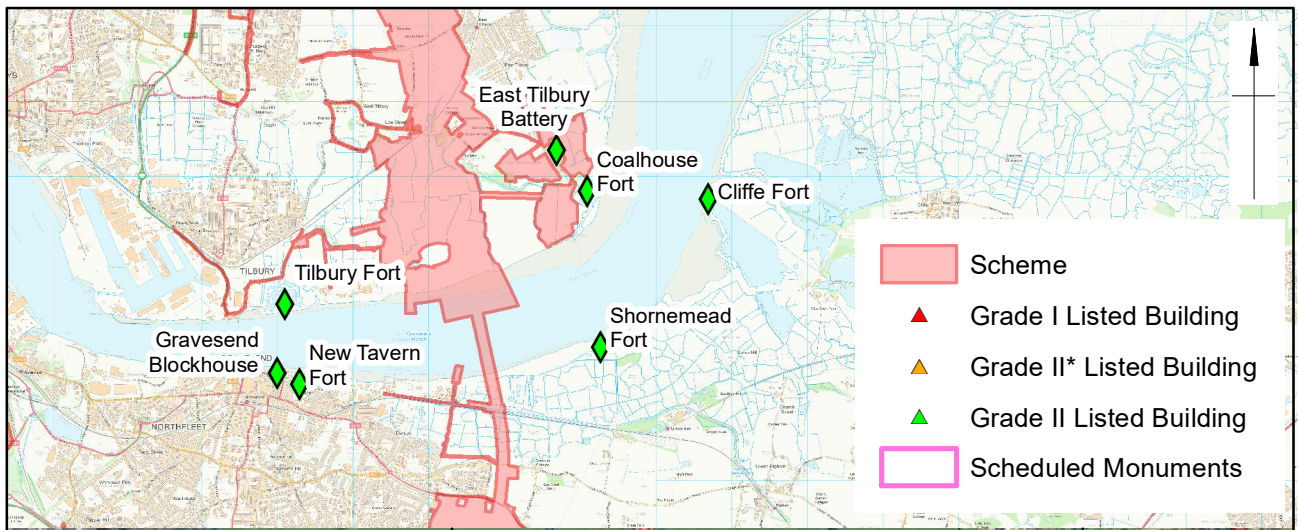
7.2.6 Inside the fort, the Officers barracks built circa 1750 is a designated a Grade II* Listed building. This means it is recognised as a particularly important building of more than special architectural or historical interest (DDCMS 2018, 4). Baxter explains that 'Its architectural interest lies in its use traditional materials and the symmetry and regularity of its twenty-three-bay façade, enlivened by the treatment of its central three bays.' (2018, 56).

7.2.7 Tilbury Fort holds group value in a national sense as part of the network of 16th century and later defensive structures along the River Thames built to protect the approach to London. It incorporates Tilbury Blockhouse which was one of a number of blockhouses on the east, south and south west coasts constructed for Henry VIII (one of five blockhouses on the River Thames). It worked with defences at Gravesend (i.e. Gravesend Blockhouse and New Tavern Fort) with which it provided a pattern of crossfire.

7.2.8 In concurrence with Baxter (2018, 60-61), Tilbury Fort's setting contributes fundamentally to its overall significance, largely as part of the Fort's historic and aesthetic value. The location of the Fort on a narrow point of the Thames, its topography which allows for long views up and down the river, geology of marshy alluvium and its proximity to and relationship with Gravesend Blockhouse and New Tavern Fort contribute to the Fort's historic interest. The setting has to some extent influenced the design of the Fort, for example determining the shape of the Fort to provide the necessary fields of fire and the marshland facilitated the inclusion of moats.

7.2.9 The wider setting of the fort has been substantially degraded by development and The encroachment of impermeable residential and industrial sites, particularly to the west, means that views from the ramparts have changed dramatically since the Fort's initial construction. It is now difficult to appreciate the historic open and strategic position of the Fort and this detracts from its significance.

- 7.2.10 However, there remains a buffer of the moats and surviving marshland between Fort and surrounding industrial and residential development. This flat, open space offers a good appreciation of the size and scale of the Fort, especially in aerial views that provide striking images and a holistic view of the plan form of the fort. The landscape character of the moats and marshland around the Fort is fundamental to the site's overall aesthetic interest.
- 7.2.11 Despite modern development within its setting, the underlying topography around the fort remains legible and positively contributes to its significance as it enables an understanding of the fort's historic character and its strategic military function.
- 7.2.12 The comparative lack of development in the view towards Gravesend from north of the Fort and the view north-east towards West Tilbury from the north-east bastion means that the original nature of the setting remains partially legible and these views continue to demonstrate the strategic location and function of the Fort and enable appreciation of its significance.
- 7.2.13 As assessed in the CMP (Baxter 2018), the feature of the fort setting that detracts most from its significance is the river wall that lines the north side of the Thames. It has severed the important visual and physical relationship between the fort and the River especially in views looking towards the Fort from Gravesend. In these views it is the visually prominent water gate that provides a landmark and stands out against the river wall in the foreground and the brick walls of the Fort either side. Although visually obstructed by the river wall, the sound of activity at the port and engine sounds from vessels passing on the river maintain an auditory link to the river.
- 7.2.14 The river wall is less intrusive and presents less of an issue in views from the bastions and batteries. Views from Tilbury Fort across the river towards Gravesend Blockhouse and New Tavern Fort are particularly important and contribute positively towards Tilbury Fort's significance. The views illustrate the strategic military function of the Fort and its functional cross-fire relationship with the other defensive sites as part of a larger defensive network.



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Coordinate system: OSGB36 (OSTN15/OSGM15)				
	Date:	02/01/2020	Revision Number:	0
	Scale:	1:6000 at A4	Illustrator:	GF
	Path:	X:\PROJECTS\218561\GIS\Figs\MXD		

Tilbury Fort site and designated heritage assets

Figure TF1



Plate TF1: Tilbury Fort Water Gate



Plate TF2: Tilbury Fort water gate, guardhouse and chapel



Plate TF3: Grade II* listed Officers Barracks



Plate TF4: Gunpowder Magazine



Plate TF5: View across Tilbury Fort from the south-west bastion



Plate TF6: View looking north from the fort



Plate TF7: View of Tilbury Fort from the north-west



Plate TF8: View from Tilbury Fort north-east bastion looking east



Plate TF9: View from Tilbury Fort looking towards Gravesend



8 COALHOUSE FORT

8.1.1 This section about Coalhouse Fort has been predominantly informed by the Coalhouse Fort Conservation Management Plan (FAS Heritage 2017a, b and c).

8.1.2 It was not possible to gain access to Coalhouse Fort to make an on-site assessment. However, the Fort was visited in November 2017 as part of a heritage appraisal for a National Grid substation compound to the south-west of the Scheduled Monument (Wessex Archaeology 2017). Observations and photographs from the earlier project have been reviewed to inform this assessment. A selection of the 2017 photographs are presented in this report.

8.2 The Site

Site	Coalhouse Fort		
Address	Princess Margaret Road, East Tilbury, Tilbury, Essex, RM18 8PB		
OS NGR	569069 176653		
Statutory heritage designation(s)	Scheduled Monument	List Entry No. 1013943	Coalhouse Fort battery and artillery defences
Relevant Essex HER nos. include	MEX31822, MEX31824, MEX31830, MEX31832, MEX31833, MEX6347, MEX6355, MEX6359, MEX6361, MEX6378		
Origin period	Late 19th century (1860s-1870s)		
History and function	<p>The present fort was constructed between 1860-1874 as part of the major programme of construction of military defences that followed the 1860 <i>Report of the Royal Commission Appointed to Consider the Defences of the United Kingdom</i>.</p> <p>In 1402 a commission was issued for 'the fortification of the town of East Tilbury, co. Essex, with a wall of earth and garrets, which men of the town intend to make for defence against the French and other enemies.' (CPR 1401-1405, 113; cited in FAS Heritage 2017a, 11). This was during the Hundred Years War (1337-1453) with France when the south coast of England and the Thames estuary were threatened by French raids. The location of the 1402 fortification has not been traced on the ground but is likely to have encompassed the church and perhaps the area that is now occupied by the current fort.</p> <p>East Tilbury blockhouse was built 1539-40 for Henry VIII. It was one of five along the River Thames and formed a pattern of cross-fire with Higham blockhouse in Kent. All five Thames blockhouses were disarmed in 1553 and the ones at Higham and Milton were demolished in 1558. By 1580s the East Tilbury blockhouse was largely abandoned as a military defence and fell into ruin. The ruins are marked on a map of South Hall by C Sloane, dated 1735 (ERO T/M 528/2, cited in FAS Heritage 2017a, 15). Sea walls appear to</p>		



Site	Coalhouse Fort
	<p>have been constructed at the same time as the blockhouse. The current walls were in place by the early 18th century.</p> <p>A battery at East Tilbury, known as Coalhouse Battery, was completed in 1799. It was constructed after a successful raid by the Dutch fleet in June 1667 during the Second Anglo Dutch War (1665-1667) proved that the forward defences of the Thames were inadequate. A survey by Lt Col Hartcup of the Royal Engineers in 1794 recommended a triangle of artillery batteries to guard the approach to Gravesend Reach and Lower Hope Reach (PRO WO 30/60, 63, cited in FAS Heritage 2017a, 16). The sites selected were at Shornemead, Lower Hope Point and East Tilbury, each with a maximum range of 1.5 miles to create a pattern of cross fire. The battery comprised a semi-circular firing platform, on which were mounted four 24-pounder cannon, with an earth rampart to the river side and walled enclosure around the barracks, magazines and shot kiln (PRO <i>ibid.</i> note 75, cited in FAS Heritage 2017a, 16). The cannon were mounted upon traversing carriages which allowed the targets to be tracked more easily than with the traditional gun carriages. The whole complex was enclosed by a polygonal water-filled ditch. The battery was altered in 1810 by raising the rampart to incorporate a small expense magazine. It was decommissioned by 1820 (along with those at Shornemead and Lower Hope) following the final defeat of Napoleon at Waterloo in 1815.</p> <p>Coalhouse Point Battery was completed in 1855. In the 1840s increased threat of French invasions led to the batteries at Shornemead and East Tilbury being recommissioned. The existing Coalhouse Battery was subject to a major building programme (1847-1855) to convert it to a full fort. The earlier battery was retained and extended with new elements to the north-west. Construction encountered structural issues such as cracks in the foundations due to the marshy ground.</p> <p>The fort was armed with seventeen 32-pounder smooth bore cannon. It was enclosed by a pentagonal water-filled ditch with a bridge on the west side providing access into the interior. The northwest part of the interior housed the barracks and magazine with the gun battery to the south and east. The 1855 fort was dismantled in order to construct the present fort.</p> <p>The present fort was constructed between 1861 and 1874. It was designed by Captain Charles Siborne, RE, who was responsible for the design of the other Thames forts of the period, including at Shornemead and Cliffe. Structural issues such as shifting and cracking foundations delayed construction. The fort was redesigned to deal with these issues and account for advances in ordnance technology. The fort was initially armed with four 12.5-inch, thirteen 11-inch and three 9-inch RML guns, a change from the original design. By 1897-8 a scheme of structural reinforcement</p>



Site	Coalhouse Fort
	<p>had been implemented including blocking or reinforcing embrasures with concrete. In the late 1880s the RML were replaced by more powerful and quick BL guns. The fort was connected via a railway to a coal wharf and jetty further south, which falls within the Scheduled Monument boundary.</p> <p>In 1887, an additional battery was proposed to strengthen the Thames defences (EHER nos. MEX6612, MEX6620). East Tilbury Battery (a separately assessed site) was constructed between 1889/90, to the north of Coalhouse Fort. Its BL guns superseded the greater part of armament of Coalhouse.</p> <p>In the late 19th and early 20th century Coalhouse Fort was refortified. 5-6 ft of concrete was laid on the roof to support the weight of new guns, the casemated front of the fort was embanked, the caponiers dismantled and infilled and semi-circular brick enclosures constructed around the embrasures. Mounts for four Mark VII six-inch BL guns and four 12-pdr QF BL guns were built on the roof, reached by a new iron walkway cantilevered out and attached to the rear of the casemates. Four massive circular piers inserted at casemate level provide support for the emplacements on the roof. By 1907 most of the casemated battery of RMLs had been dismantled but two 12.5-inch RMLs remained until at least 1912.</p> <p>A separate Quick-Fire 'Wing Battery', built in 1893, is the sole surviving purpose-built battery of its type in the Thames basin. It lies within the Scheduled Monument boundary, to the south of Coalhouse Fort. An archaeological investigation by English Heritage describes its state of preservation as exceptional (Brown and Pattison 2003, 19).</p> <p>In 1914 the fort was reoccupied and modernised to guard against incursions on the marshes. QF guns and searchlights were added to the roof and fire control equipment was updated. The fort acted as an Examination Service Battery, manned by No.2 Company Royal Garrison Artillery working in conjunction with the River Examination Service to control the river traffic. It was also an electric searchlight position manned by the 2nd Company London Electrical Engineers.</p> <p>During the interwar period, the fort was largely placed into a care and maintenance status (PRO WO 192/48 cited in FAS Heritage 2017a, 31). In December 1933 Coalhouse Fort became part of the Thames Fire Command and was taken over by C.C. Thames Fire Command.</p> <p>The fort's armament and defences were upgraded in the Second World War. An extensive barbed wire system was added around the fort and slit trenches were excavated. In 1940, the fort became an emergency battery. Its role was to 'protect the Ports and Docks</p>

Site	Coalhouse Fort
	<p>of London from raids by Cruisers, Torpedo craft and C.N.Bs.' (PRO WO 192/48 cited in FAS Heritage 2017a, 32). Two 5.5-inch naval guns protected by gun houses were mounted in old 6inch emplacements and a new anti-aircraft armament was installed. A sketch drawing from the Chief Engineer for the gun houses indicates the fort was largely concealed by vegetation. In 1943 the fort was taken over by the Home Guard No. 356 Coast Battery detachment and a detachment of Wrens was based there to operate a degaussing range named <i>HMS St. Clement</i>. A number of ancillary structures were constructed in the area around the fort including a Minefield Control Centre tower, a radar tower for minefield observation, two spigot mortar pedestals (probably relocated), a Tett Turret (since removed) and an octagonal pillbox further upstream.</p> <p>After the War the role of the fort was reduced to 'Care and Maintenance' and most of the armaments removed leaving two 5.5inch BL guns. It was then used intermittently for a range of purposes including training sea cadets (1946), storage (Bata Shoe Company 1949 / coal during the Miners' Strike 1959) and emergency housing for demobbed ex-service men and their families.</p> <p>In 1962 the fort was acquired by Thurrock Urban District Council and the site was designated as a Scheduled Monument. The Council developed the ground around the fort as a public pleasure park and the former generator house was converted into a café. The fort also became the location of the Thameside Aviation Museum. In 1983 the Coalhouse Fort Project was set up by the Thurrock Local History Society and took over the repair and management of the fort.</p>
<p>Defence of the realm and relationship with other sites</p>	<p>The several types and phases of defensive sites at Coalhouse Point demonstrate the strategic importance of this location. The majority of the defences were constructed in response to real or perceived threat of invasion, usually from France.</p> <p>East Tilbury Blockhouse was part of the chain of coastal defences developed for Henry VIII and is one of five blockhouses along the Thames built to defend the approach to London; the others are at Gravesend, Tilbury, Milton and Higham. They are sited at the first place in the river where geographical factors made for easy landing of forces.</p> <p>The 1799 battery at East Tilbury was constructed after the Second Anglo-Dutch War (1665-1667). It was one of three artillery batteries built to guard the approach to Gravesend Reach and Lower Hope Reach - the others at Shornemead and Lower Hope Point.</p>

Site	Coalhouse Fort
	<p>The 1847-1855 fort was developed during a period of increased threat of French invasion, as was the 1852 fort at Shornemead.</p> <p>The present fort was constructed as part of the major 1860-80s construction programme that followed the 1860 <i>Report of the Royal Commission Appointed to Consider the Defences of the United Kingdom</i>. The report concluded that Britain was not sufficiently defended and that the coastline at risk should be fortified at key points. The structures built for this programme are sometimes referred to as Royal Commission or Palmerston Forts (after Prime Minister Henry Temple 3rd Viscount Palmerston who was involved with the project).</p> <p>An extract from the Royal Commission report is presented in Appendix 2. It includes an assessment of the importance and existing defences of the Thames area and the proposals for fortifications at Shornemead, Cliffe and Coalhouse Forts. It describes how these fortifications are designed to work together as a first line of defence to prevent a hostile fleet moving further up the Thames towards London. Coalhouse Fort and the new defences at Shornemead Fort and Cliffe Fort are located either side of a narrow point in the river, approximately 1000 yards (914 m) across. In time of war a boom obstruction was to be strung across the Thames between Coalhouse Point and Cliffe Creek to control access along the river to London. A pattern of cross fire was possible between Shornemead Fort and Cliffe Fort in Kent and Coalhouse Fort in Essex.</p> <p>Further west, Tilbury Fort and New Tavern Fort Gravesend were upgraded to act as a second line of defence.</p> <p>To the north-west of Coalhouse Fort are the associated defensive sites of East Tilbury Battery (see section 9) and the Second World War anti-aircraft battery at Bowaters Farm, which are both Scheduled Monuments. The anti-aircraft battery at Bowaters Farm is addressed in the <i>Lower Thames Crossing Archaeological Desk-Based Assessment of 20th century Military Archaeology</i> (Wessex Archaeology 2020).</p>
<p>Form and architectural design</p>	<p>No detailed plan or illustration of the East Tilbury blockhouse has survived but it is generally assumed to have taken a similar form to that at Tilbury, drawn on a 1588 plan by Federico Genebelli.</p> <p>No detailed plans of the 1799 battery appear to survive, but its basic form is depicted on a map of 1805 and it was subsequently retained and incorporated into the 1855 fort. The 1855 fort was irregular in plan surrounded by a pentagonal ditch, and a series of dykes and the sea wall in the immediate vicinity. It was located in approximately the same location as the present fort. Figure 4 in the</p>



Site	Coalhouse Fort
	<p>CMP (FAS Heritage 2017, 18) shows the 1855 and 1874 forts overlaid.</p> <p>Coalhouse Fort is described as ‘a remarkably well preserved late 19th century fort built on the recommendation of the Royal Commission on the Defence of the UK in 1860. It is one of the finest examples of an armoured casemate fort in England’ (list entry no. 1013943).</p> <p>The fort buildings are a mix of stone (granite and Kentish ragstone), brick, iron and concrete construction. The granite-faced casemates are protected by iron shields and subsequently reinforced using concrete. The Gorge Buildings, which close off the rear open ‘gorge’ of the fort, are brick structures faced in Kentish ragstone and have elegant iron veranda. They employ the Fox and Barrett fireproof construction system in the floors and ceilings. The magazines and semi-circular enclosure round the embrasures are brick-built. Stylistically the buildings are imposing and utilitarian, which reflects their military function.</p> <p>The majority of 20th century gun emplacements and Second World War ancillary structures (e.g. towers and pillboxes) are concrete construction and built to standard designs. Details of the QF wing battery are provided in the English Heritage archaeological investigation report (Brown and Pattinson 2003).</p>
Present condition, surrounding landscape and setting	<p>At present Coalhouse Fort Park and the areas extending from the fort to the shore are accessible to the public and used for dog-walking, recreation and special events. The fort itself is not permanently open to the public but is made accessible on regular open days and for special events and school trips.</p> <p>Since 1983, volunteers with the addition of labour from the Manpower Services Commission Community Programme have worked to repair and restore the fort. Recent projects include the renovation and refurbishment of the gatehouse buildings (completed 2010) and Generator House (started 2012). However, there are still areas such as the Gorge buildings and structures on the roof that are in poor condition or considered unsafe and so remain unused and inaccessible.</p> <p>The parkland that surrounds the fort was landscaped and managed for its amenity value in the 1960s, with associated planting. The outer edge of the casemated fort is surrounded by a partially infilled dry ditch and glacis and an outer moat full of water. The area to the south comprises a salt marsh and mud flats along the shore of the Thames. A raised path follows the former railway towards the shore and the location of a former jetty. The radar tower is a prominent feature in the landscape, and the shore has timber and concrete remains relating to the former jetty. There are also the remains of</p>

Site	Coalhouse Fort
	<p>defensive light emplacements. The footpath is part of the 'Two Forts Way'.</p> <p>East Tilbury village is a linear settlement along Princess Margaret Road. The fort lies at the end of this road, so visitors driving to the fort pass through the village. The land to the west of the fort and the Scheduled Monument area and either side of the village is a rural landscape of large fields, but trees and hedges along the west side of the Coalhouse Fort Park boundary form a visual and physical barrier between the Parkland and the land to the west.</p> <p>The primary setting of the monument is the River Thames and the bordering historic grazing marshes. The marsh forms a wide, open and flat landscape with extensive views on a clear day. The local topography makes a major positive contribution to the setting of the heritage assets because it determined the strategic location of the Fort and its relationship to other defensive sites - aspects that are important to its significance (Place Services 2019, 26).</p> <p>The network of forts, batteries and other military structures on the Essex and Kent shoreline make a major positive contribution to the setting of the Coalhouse Fort heritage assets. The historic settlement and Grade I listed church of East Tilbury are also positive elements in the setting (ibid).</p> <p>Principal and other significant views are identified and illustrated in Place Services' Thurrock Scheduled Ancient Monuments Assessment (ibid, 23-30). The principal views look from the fort towards other defensive sites: Cliffe Fort to the east, Shornemead Fort to the south and Tilbury Fort to the west. The latter view is partially blocked by trees within the Coalhouse Fort Park, so although attractive, the tree-planting can be considered as having a minor negative impact on the understanding of the relationship between the two sites. Views between Coalhouse, Cliffe and Shornemead Forts illustrate the functional relationship of these sites as a defensive triangle. Other significant views radiate inland.</p>

8.3 Statement of Significance

- 8.3.1 The site is designated as a Scheduled Monument, which means it is recognised as a nationally importance heritage asset. The 'reasons for designation' provided in its list entry highlight specific features that make it worthy of protection:

Coalhouse Fort is a remarkably well preserved late 19th century fort built on the recommendation of the Royal Commission on the Defence of the UK in 1860. It is one of the finest examples of an armoured casemate fort in England and is well documented historically. The jetty and railway line are an integral part of the fort. The Henrician blockhouse is well documented historically and has high archaeological potential due to waterlogging. Such a site adds to the knowledge of the coastal fortifications made by Henry VIII. The Quick-Firer battery, built in 1893, is the sole

surviving purpose-built battery of its type in the Thames basin. The rifle range is an unusual survival which adds to the known range of earthwork monuments and is closely associated with the fort. Virtually intact World War II radar installations of the type at East Tilbury are known at only two other places in England, making this an extremely rare survivor of a once widespread system. The group of structures demonstrate the former strategic importance of Coalhouse Point and demonstrate the changing approaches to defence over 400 years. Furthermore the sites formed elements of wider defence systems designed to protect the Thames Estuary and especially London.

- 8.3.2 An assessment of the significance of the site was previously carried out for the CMP (FAS Heritage 2017a, b, and c). The current assessment has considered and concurs with the statement of significance presented in the CMP report. Nothing has occurred since it was issued that would invalidate the statement or require its amendment. It is quoted here in its entirety:

Summary statement of significance:

Coalhouse Fort and its immediate surroundings represent a palimpsest of fortifications dating from the end of the medieval period to the 20th century, providing evidence for the strategic protection of the Thames estuary during key points in the political and military history of the country. The most legible, and most significant, phase of the history of the site is the well-preserved late 19th century Palmerston Fort. The exceptional evidential, historic and aesthetic value of the site is reflected in its designation as a Scheduled Monument.

The site has a multi-period history, but three main phases of use contribute to the historical, evidential, communal and aesthetic value of the place: 16th-century defences; 19th-century to World War I; World War II adaptation. Each phase of use is significant for different reasons and in some cases there is some level of conflict between the significance of different elements, for example where the addition of rooftop gun emplacements has affected the system of drainage from the rooftops, causing problems with damp.

The 1860s casemated fort survives intact and its internal layout remains remarkably unaltered; it is considered to be one of the finest examples of an armoured casemate in England. Of the seven forts within the Thames group, it is considered an exemplar of its type for this period (OA 2017). The fort preserves many internal fixtures and fittings which reflect a period when buildings had to keep abreast of rapidly developing gunnery, sometimes being adapted while still in construction. The survival of original plans and documents relating to the design, construction and maintenance of the fortifications enhances this evidential and historical value. The fort has seen little alteration, with some alteration occurring at the end of the 19th century when the fort was strengthened to support rooftop artillery, and the military shift towards the concealment of fortifications saw the infill of the ditch and embankment around the fort.

The site was adapted for use during World War II, but this involved addition, rather than alteration of fabric, and provides evidence for the changing forms of technology employed in the first half of the 20th century. This adds to the historic and evidential value of the place, but also means that the site has some communal value, in recollections of individuals stationed at the site, and in commemoration of those whose lives were lost.

In its current form, with the surrounding parkland, the fort has aesthetic value as an imposing structure. However, inaccessibility, and deterioration of structures, means that this value is being eroded.

Evidential value:

Coalhouse Fort has exceptional evidential value as a near-complete survival of a late 19th century fortification, enhanced by the surviving archive of documentary and cartographic sources that enhances understanding of the heritage. The fabric of the site demonstrates how quickly the buildings were adapted to suit changing military needs; the arrangement and uses of space suggest changes to the intended design while the fort was under construction. The survival of original fixtures, fittings and decorative schemes relating to both artillery and to the more domestic uses of the gorge buildings provides further insight into the use of space, and developments of technology. The survival (and documenting) of Fox and Barrett flooring and roofing also adds to the evidential value of the place.

The setting of the site, with regard to earlier phases of use, and the topography of the Thames estuary, is integral to understanding this value, and the strategic defensive opportunities afforded by Coalhouse Point.

Historic value:

Coalhouse Fort forms part of a wider complex of coastal defences that was put in place in the 1860s, to defend the Thames estuary. The survival of the site, within the wider context of the defences, means that it provides an exceptional example of the technology, design and appearance of fortifications of this date. The site is illustrative of a key, albeit short-lived, period of British military and naval history, one that is not widely visible in the landscape elsewhere.

The site also has illustrative value in demonstrating the range of structures and strategies that were employed in defence of the Thames in World War II.

The historic value of the fort is further enhanced by the wealth of documentary evidence pertaining to the site, curated in various archives.

Communal value:

The wider site has communal value due to its amenity value as an attractive open space used for recreation. The site has formed a focal point for the Coalhouse Fort Project for several decades, and so has communal value for the individuals and groups who have been involved with, and benefitted from, this project.

The site also accommodates special events for groups not directly associated with the history of the site, including paranormal activity, historic car rallies and others.

Aesthetic value:

At present the aesthetic value is not at its full potential; the property is overgrown and littered with debris. The wider setting of the site has not, however, been eroded by modern development, and there remains the potential to improve the aesthetics of the site. The current open landscape surrounding the fort allows the scale and mass of the fortification to be appreciated.

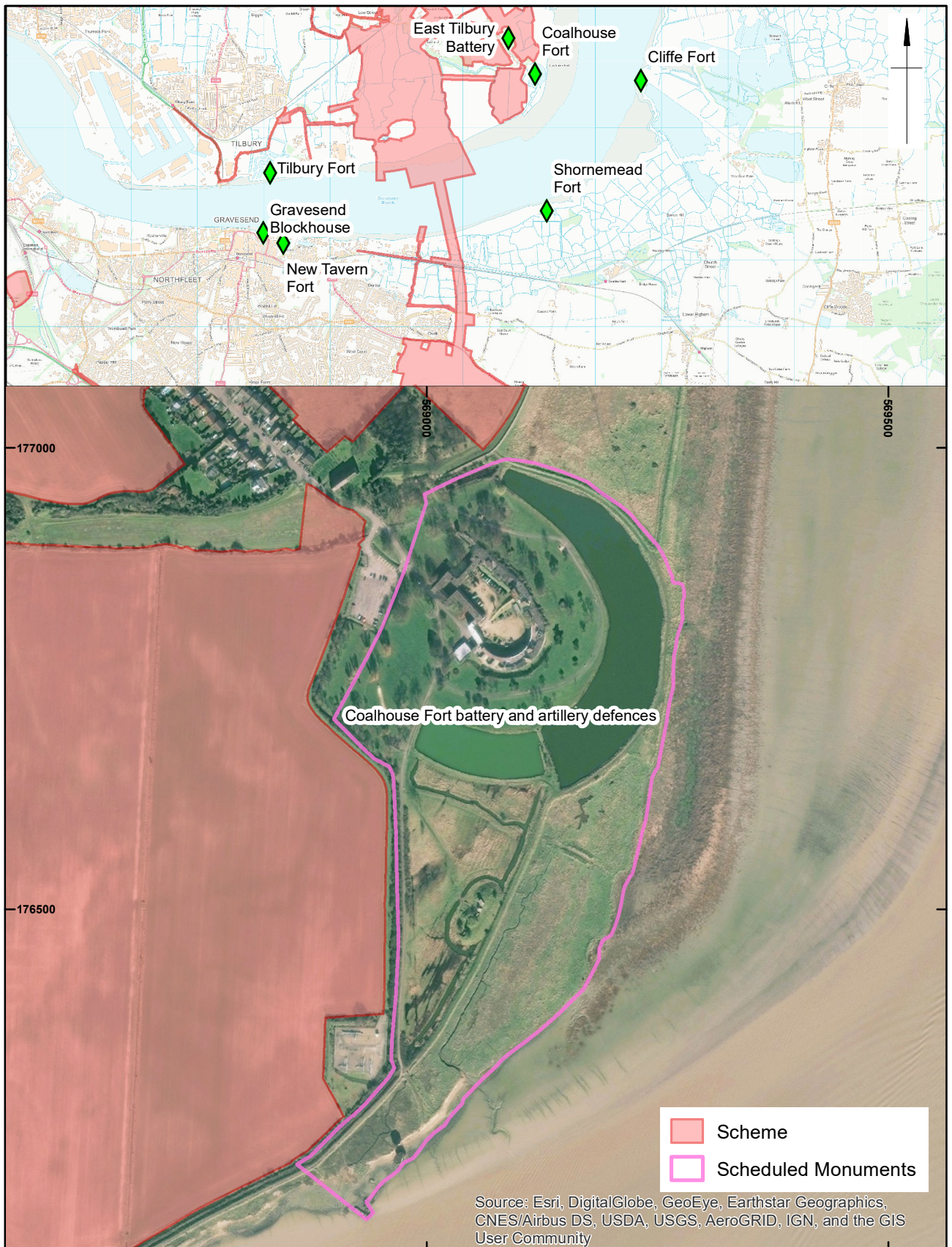
Internally, the survival of the original layout of the magazines, with light tunnel, main passage and voice pipes, and the casemates, provides the visitor with a first-hand experience of the conditions in which those posted at Coalhouse would have worked.

Setting:

The setting of the site makes a major contribution to its significance, both in terms of its topographic location, and also in terms of its relationship to other heritage assets. Strategic location on the bank of the Thames would have dictated the initial choice of this location for the 16th-century blockhouse, and this use in turn represents the early stage of an ongoing history of defensive works in this area.

(FAS Heritage 2017a, 38-40)

- 8.3.3 More recently, Place Services describes the significance of the heritage asset in terms of its archaeological interest and historic interest (2019, 23-30). The assessment identifies archaeological interest related to the fort's standing architectural remains and a high archaeological potential due to waterlogging, particularly for remains associated with the Henrician blockhouse. The description of historic interest matches the Scheduled Monument 'reasons for designation' (above).
- 8.3.4 One aspect of significance recognised by Place Services (ibid) but omitted from the CMP (FAS Heritage 2017a, b and c) is group value. Coalhouse Fort holds group value as part of the network of 16th century and later defensive structures along the River Thames built to protect the approach to London. East Tilbury Blockhouse (within the Scheduled Monument area) was one of a number of blockhouses on the east, south and south west coasts constructed for Henry VIII and is one of five on the River Thames. It provided a pattern of crossfire with the blockhouse at Higham. The Shornemead and Coalhouse sites have group value as two of the three locations of batteries constructed in the late 18th century to protect Gravesend Reach and Lower Hope Reach (1796 battery at Shornemead and 1799 battery at Coalhouse). In addition, it holds group value with the Shornemead and Cliffe Fort sites because of the 1840s-50s forts constructed at Shornemead and Coalhouse and 1860s-70s Royal Commission forts constructed at all three sites that created a pattern of crossfire and formed a first line of defence on the approach to London along the Thames.



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	Scale:	1:6000 at A4	Illustrator:	GF
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Coalhouse Fort site and designated heritage assets

Figure CHF1



Plate CHF1: Coalhouse Fort exterior including the Generator House



Plate CHF2: Interior of Coalhouse Fort



Plate CHF3: The fort, outer moat (background) and drainage ditch (foreground)



Plate CHF4: Quick-fire gun battery constructed in 1893 (unique in the Thames basin)



Plate CHF5: The rare intact WWII radar tower and remains of the jetty. Cliffe Fort is visible in the background



Plate CHF6: View of the Coalhouse Fort Scheduled Monument from the south side of the Thames at a point between Shornemead and Cliffe Forts



9 EAST TILBURY BATTERY

9.1.1 Unfortunately, it was not possible to gain access to East Tilbury Battery to make an on-site assessment. Therefore, this report has been limited to other (secondary) sources of information.

9.2 The Site

Site	East Tilbury Battery		
Address	East Tilbury, RM18 8PL (off Princess Margaret Road)		
OS NGR	568657 177424		
Statutory heritage designation(s)	Scheduled Monument	List Entry No. 1013880	East Tilbury Battery
Relevant Essex HER nos.	MEX6612, MEX6620		
Origin period	Late 19th century (circa 1890)		
History and function	<p>East Tilbury Battery (officially known as Coalhouse Battery) was proposed in 1887 to strengthen the Thames defences (EHER nos. MEX6612, MEX6620) and constructed between 1889-90 to support Coalhouse Fort with long-range fire.</p> <p>It was designed to be a disguised, almost invisible, fortification that minimises the effectiveness of the attackers' ordnance and maximises the effectiveness of the defenders. To that end, the battery is protected by a long and sloping earthen area that blends into the landscape and makes it invisible from a distance. It was armed with two 10-inch Mk. III and four 6-inch Mk. VII BL guns are mounted on disappearing carriages, meaning they are only visible above the parapet for the few seconds of firing (list entry no. 1013880).</p> <p>Towards 1900 the 6-inch guns were remounted (Hogg 1974, 104).</p> <p>There are also positions for two 3pdr. QF guns at either end of the battery, possibly used for practice or local defence to cover the ground between East Tilbury Battery and Coalhouse Fort. The 10-inch guns were declared obsolete and partially dismantled in 1903 followed by the 6-inch guns by 1909. (Victorian Forts website).</p> <p>All the guns had been removed by 1913 when the battery was decommissioned. It was subsequently sold to a local farmer in 1930. It was used as an unofficial air-raid shelter during the Second World War (ibid). Since then, the site has remained unused. The gun emplacements and underground magazines, stores and</p>		



Site	East Tilbury Battery
	<p>workrooms were still visible in 1962 but all was derelict and overgrown by 1974 (Smith 2008, 26).</p> <p>It was designated as a Scheduled Monument in 1990.</p>
Defence of the realm and relationship with other sites	<p>East Tilbury Battery is a type of defensive structure that represents a late 19th century change in national defensive tactics from imposing forts with heavy artillery in fixed emplacements to smaller installations disguised within the landscape and often armed with portable field artillery.</p> <p>It is located near to Coalhouse Fort and was intended to support this earlier fortification with long range fire.</p>
Form and architectural design	<p>East Tilbury battery is a very rare coastal example of the 'Twydall Profile' form of defensive installation.</p> <p>The design of the Twydall Profile evolved from Turkish defences in the Siege of Plevna during the Russo-Turkish War (1877-78). In the UK, military engineer Lieutenant-Colonel Sir George Sydenham Clarke designed a small fort or redoubt that could be defended by infantry and mobile field artillery rather than fixed guns and was protected by sloping earthen banks. In 1885, two experimental redoubts were built near the village of Twydall, which is where the term 'Twydall Profile' gets its name. This form of military installation represents a complete change in defensive tactics in the late 19th century from massive and prominent fortifications (such as Coalhouse Fort) to disguised defences.</p> <p>East Tilbury Battery is camouflaged by a long and sloping earthen area in front of the battery that blends into the landscape. The battery is surrounded by a steeply sided ditch fitted with spiked railings known as a Dacoit fence, which were designed to be unclimbable. The guns are mounted on 'disappearing carriages' which lay in deep emplacements for reloading and aiming and then were raised above the parapet for the few seconds required to fire. The guns were removed when the battery was decommissioned but the rest of the fortification survives unused but remarkably well-preserved.</p> <p>Below the gun mountings are the brick-built magazine and accommodation blocks and to the rear of the battery were a cookhouse and battery office.</p> <p>The walls of the magazine are lined with bitumen and cork to prevent damp problems (Victorian Forts website).</p> <p>The buildings retain many of their original features including the ammunition lift machinery used to raise shells and cartridges from</p>

Site	East Tilbury Battery
	the magazines to the emplacements and signage, which provides evidence as to how the installation functioned.
Present condition, surrounding landscape and setting	<p>Descriptions and photographs of the site available online show that by 1996-7 the site was heavily overgrown but in very good condition with little signs of vandalism (Anderton 2000, 85 and Victorian Forts website). More recent photographs dated 2013-2017 (Derelict Places and Beyond the Point websites) show the exterior still overgrown and the vegetation encroaching on the interior. A lot of the fixtures and fittings remain in situ although the metalwork is corroded. There are a few signs of vandalism that consist of graffiti and littering.</p> <p>East Tilbury Battery is located on the north-east side of East Tilbury village and lies approximately 330 m (minimum) to the north-west of Coalhouse Fort. The battery was built to support the fort, so the latter is an important and integral part of its setting, needed to understand its historic context. The view from the battery downstream rather than across the river is also important and demonstrates the battery field of fire. Its position in relation to the village is also an important aspect of its setting. The mostly-subterranean and defensive nature of the battery together with its proximity to the village makes its use as an unofficial WWII air-raid shelter understandable.</p> <p>The battery lies within green agricultural setting, with coastal marsh and the River Thames beyond. The openness of the landscape is key, as the purpose of the battery was to fire across the marsh at invading forces approaching via the river. There is now a mature hedge line between the battery and the marsh. The linear settlement of East Tilbury lies to the east and south of the battery and further west is more agricultural land.</p> <p>Principal and other significant views of the site are identified and illustrated in the recent Settings Assessment (Place Services 2019, 55-60). These include glimpsed views of the overgrown structures as well as views to and from the river from on top of and in front of the battery. Aerial views and views towards the battery from the north-east are particularly important as they demonstrate how well the installation is camouflaged.</p>

9.3 Statement of Significance

- 9.3.1 East Tilbury Battery is statutorily protected as a Scheduled Monument, which means it is recognised as a nationally important designated heritage asset that meets the scheduling selection criteria.
- 9.3.2 The Scheduled Monument list entry states its ‘reasons for designation’, which highlights aspects of the Fort that contribute to its significance.

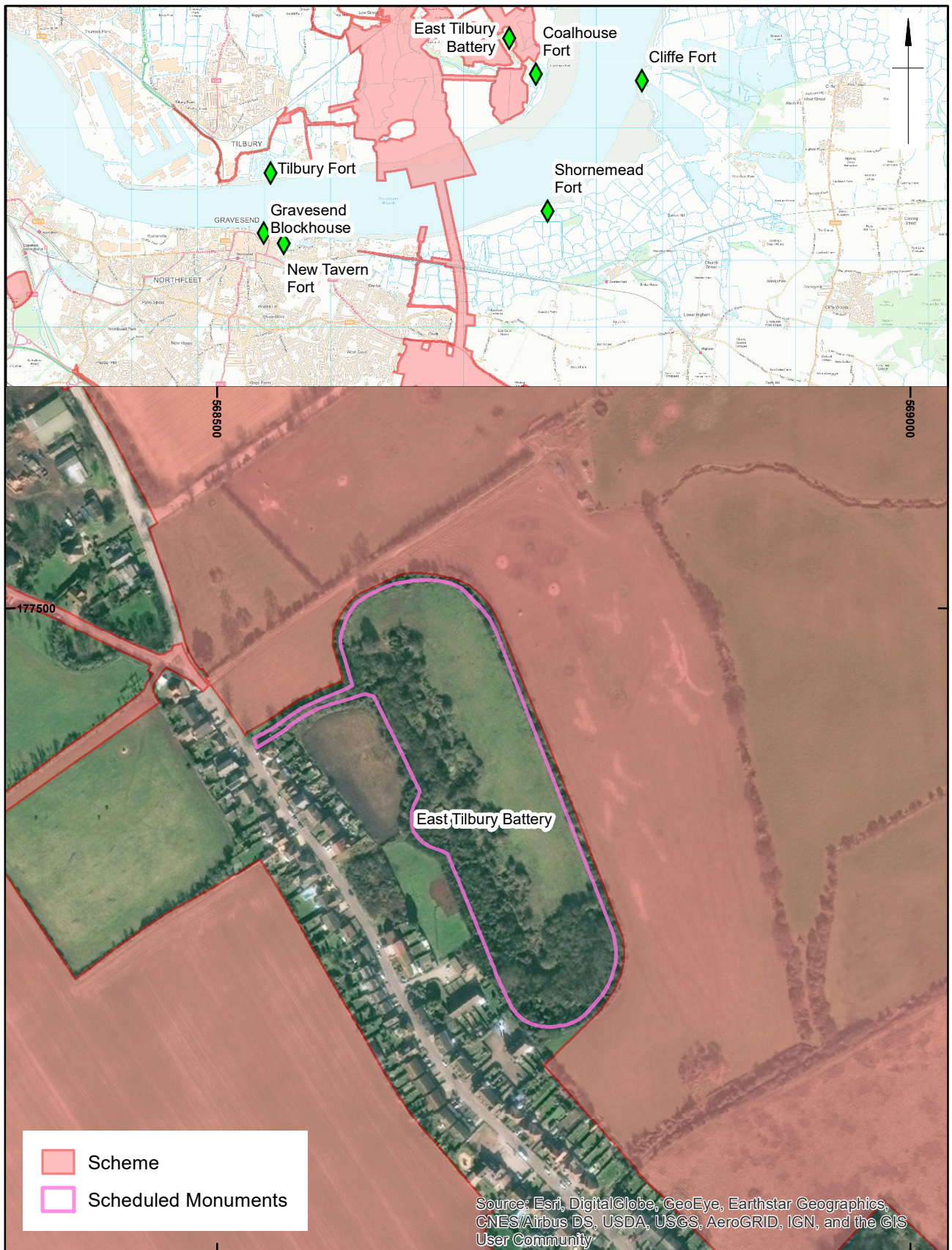
The East Tilbury battery is an exceptionally rare coastal example of the 'Twydall Profile' form of defensive installation, of which it is the best and most complete in this country. The Twydall Profile represented a complete change in defensive tactics in the late 19th century from massive and starkly outlined fortifications (e.g. Coalhouse Fort) to disguised installations. Furthermore, the unusual survival of the concrete sunken emplacements for disappearing guns, which add to the invisibility of the battery, adds greatly to its importance. Historical documentation for the use of the battery exists in the form of written and photographic records which depict the organisation of the battery and the manner of operation of the disappearing guns. The battery at East Tilbury was built to support the guns at Coalhouse Fort and hence holds an important place in the complex evolutionary sequence of defensive installations both at East Tilbury itself and in the wider context of the turn of the century defence of London.

9.3.3 The significance of the East Tilbury Battery is primarily derived from its evidential and historical value. Aspects that contribute to its significance are:

- Its association with national defence from the mid-19th to 20th centuries and illustrates changing and dynamic military responses to external threats (historical value);
 - It represents a complete change in defensive tactics in the late 19th century from massive and starkly outlined fortifications with complex outer defences (e.g. Coalhouse Fort) to disguised installations
- The East Tilbury Battery is an exceptionally rare coastal example of the 'Twydall Profile' form of defensive installation, of which it is the best and most complete example in this country (evidential and illustrative historic value);
- Its remarkable level of preservation and survival (evidential and historical value)
 - Apart from its guns (removed in the early 20th century) the battery survives very well and includes virtually intact ammunition lift machinery. In particular, the unusual survival of the concrete sunken emplacements for disappearing guns adds greatly to the importance and significance of the Battery
- Its use as an WWII air-raid shelter (communal value for the local population)

9.3.4 Also, the battery has group value with Coalhouse Fort (which it was built to support) and holds an important place in the complex evolutionary sequence of defensive installations at East Tilbury. It also forms part of the wider context of the defence of London during the late 19th and early 20th centuries.

9.3.5 As indicated in the recent settings assessment (Place Services 2019, 55-60), the relative positions of East Tilbury Battery and Coalhouse Fort and the view from the Battery looking downstream over the River Thames are aspects of its setting that contribute positively and enable a better understanding of its significance. Whereas, the overgrown nature of the site simultaneously reduces the ability to appreciate the significance of the site and provides some protection against vandalism.



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East Tilbury Battery site and designated heritage assets

Figure ETB1

10 POTENTIAL HERITAGE IMPACTS

- 10.1.1 As seen in the figures, the Scheme boundary briefly intersects the Scheduled Monument at Tilbury Fort and passes within a few metres of the 'East Tilbury Battery' and 'Coalhouse Fort and artillery defences' Scheduled Monuments.
- 10.1.2 At time of writing, details of the works proposed for the Lower Thames Crossing scheme have not been finalised.
- 10.1.3 At Tilbury Fort, the Scheme boundary includes Fort Road, which runs west and north of site. The road (and the Scheme) skirts the edge of and briefly intersects the north-west side of the Scheduled Monument. The development activity along this route is likely to have a localised physical impact on this designated heritage asset. However, as the nature of the development activity along this route has yet to be clarified, the potential impact on the significance cannot be determined at this stage.
- 10.1.4 There is no guarantee that the Scheduled Monument areas encompass all of the remains associated with these heritage assets. This is not an issue for most of the assessed sites (Gravesend Blockhouse, New Tavern Fort, Shornemead Fort, Cliffe Fort) which lie 280 m and more from the Scheme boundary. However, it is possible that archaeological remains associated with Tilbury Fort, East Tilbury Battery and Coalhouse Fort lie within/intersect the Scheme area. For example, anti-glider ditches identified on the EHER to the east and north-east of East Tilbury Battery and west of Coalhouse Fort/south-west of the anti-aircraft battery at Bowaters Farm (MEX39676 and MEX39672 respectively).
- 10.1.5 It is likely that the Scheme will affect the setting of all of the assessed site heritage assets, given its location in relation to them. Changes to setting may be temporary (during the enabling and construction phase) or permanent. The nature and extent of any changes to setting, and more importantly what impact this will have on the significance of the assessed sites and their heritage assets, cannot be determined at this stage.
- 10.1.6 The *Assessment of Settings* report (Place Services 2019) includes sections about the potential impact of the Lower Thames Crossing Scheme on Scheduled Monuments Coalhouse Fort Battery And Artillery Defences, East Tilbury Battery and Tilbury Fort (extracts in Appendix 3). However, the Scheme boundary for the Lower Thames Crossing has changed since the assessment was issued in July 2019, so the conclusions about potential impacts to setting will need to be reviewed and revised.

11 SUMMARY AND CONCLUSIONS

11.1 Summary of heritage significance

- 11.1.1 All of the assessed sites comprise or include heritage assets of national importance and significance.
- 11.1.2 Six of the seven assessed sites include designated heritage assets:
- Scheduled Monuments - all except Shornemead Fort
 - Listed buildings - at New Tavern Fort and Tilbury Fort; and
 - Conservation Areas - encompass Gravesend Blockhouse and New Tavern Fort

- 11.1.3 By definition heritage assets designated as Scheduled Monuments are recognised as being of national importance. Listed buildings are recognised as being of special architectural or historic interest (differentiated by Grade) and Conservation Areas are designated because of their special architectural or historic interest, the character or appearance of which it is desirable to preserve or enhance.
- 11.1.4 Gravesend Blockhouse is a nationally important designated heritage asset. Its significance is derived mainly from its evidential and historical value, especially its archaeological interest. It is associated with national defence, and more specifically the defence of the River Thames and London, from the mid-16th century onwards. It represents a change in defensive tactics when the growing effectiveness of artillery meant that guns could fight an action with enemy ships at long range (Smith, no date KCC website). Views to and from Tilbury Fort are an aspect of setting that are important to its significance. Its group value is outlined further on.
- 11.1.5 New Tavern Fort is a nationally important designated heritage asset. Its significance is in part because it is a relatively rare example of a medieval hospital site with upstanding remains, as well as an unusually complete example of 18th century fortifications which underwent development in the 19th and 20th centuries. Its significance is largely derived from its evidential and historical value because of its architectural and historic interest. It also holds some aesthetic and communal value that adds to its significance. The latter is due to its association with Lt. Col. (later General) Gordon who was an important philanthropic figure in Gravesend as well as a famous military commander. It's location in relation to Gravesend Blockhouse and Tilbury Fort and views across the river and to and from Tilbury Fort are aspects of its setting that contribute to its significance. Its group value is outlined further on. As well as its inherent significance, New Tavern Fort also contributes to the special interest of the Gravesend Riverside conservation area.
- 11.1.6 Shornemead Fort is a non-designated heritage asset considered to be of national importance and significance. Its lack of statutory designation suggests it does not meet the necessary criteria, for example Shornemead Fort survives as a partially demolished derelict ruin and survival/condition is a particularly important consideration in determining whether a heritage asset meets the selection criteria for scheduling. The significance of Shornemead Fort is defined by its evidential and historic value and to a lesser degree aesthetic value. This can also be expressed as archaeological, architectural and historic interest. It is associated with national defence from in the latter half of the 19th and 20th centuries. The present fort is an example of a Royal Commission fortification, constructed as part of a major construction programme of military defences in the 1860s-1880s. Its group value is outlined further on. The isolated landscape, its location in relation to other Royal Commission Forts Cliffe and Coalhouse and views across the river and to and from these forts are aspects of setting that contribute positively to its significance.
- 11.1.7 Cliffe Fort is a nationally important designated heritage asset. Like the present Shornemead and Coalhouse Forts it is a Royal Commission fortification, the product of a major construction programme of military defences in the 1860s-1880s. Despite some immediate alterations to the basement and subsequent accretions to the roof, the fort is a relatively good example of a Royal Commission fortification. The presence of the rare (and one of the best surviving examples of) Brennan torpedo installation, the world's first guided missile, adds greatly and is very important to the significance of Cliffe Fort. Unfortunately, the current poor condition of the fort (which is flooded) and its setting surrounded by an aggregate works detract from and reduce the ability to appreciate the fort's heritage significance. Its group value is outlined further on.

- 11.1.8 Tilbury Fort is 'England's most spectacular' surviving example of a late 17th century coastal fort (list entry no. 1021092). It is a rare survival of a 'bastion' system fortification, with even rarer surviving outworks. The fort still retains many of its original internal features with most of the main buildings surviving as standing structures and provide historic architectural, artistic interest (or described another way evidential, illustrative historical and aesthetic value). The Grade II* Listed officers' barracks, gunpowder magazines, moated outworks and the Water Gate façade are notable in this respect. Despite modern development around the fort, it continues to hold outstanding aesthetic value in part because of its geometric design. Its group value is outlined further on. Views to and from the fort across the surrounding landscape are important to its significance, particularly those looking across the river to and from the Gravesend defensive sites (Blockhouse and New Tavern Fort). Similarly, aerial views provide an opportunity to appreciate the polygonal plan form of the fort in a way not possible from the ground.
- 11.1.9 Coalhouse Fort is a remarkably well preserved late 19th century Royal Commission Fort described as one of the finest examples of an armoured casemate fort in England. The present fort is part of a succession of defensive installations at Coalhouse Point from the early 15th century onwards and the Scheduled Monument area encompasses the location and surviving remains of some of these elements. This includes the East Tilbury Blockhouse constructed for Henry VIII, the late 19th century QF Wing Battery, which is the only surviving purpose-built battery of its type in the Thames basin, and a virtually intact Second World War radar installation of a type that is known at only two other places in England. The condition, level of survival and rarity of the various defensive components adds greatly to their heritage value and significance. Like the other assessed sites, Coalhouse Fort is associated with national defence and the defence of the River Thames and London over several hundred years, of which the Royal Commission Fort is the most legible and arguably the most significance phase of the site's history. The site holds evidential, historic, communal and aesthetic value. Its evidential value is considered to be exceptional i.e. '*can be demonstrated to have international or national significance, specific relevance to British and local history or culture, and/or are of extraordinary archaeological or architectural merit*' (FAS Heritage 2017a, 7). Also, the setting of the site makes a major contribution to its significance, both in terms of its topographic location, and also in terms of its relationship to other heritage assets. Its group value is outlined below.
- 11.1.10 The significance of East Tilbury Battery is primarily derived from its evidential and historical value. It is a very rare coastal example of the 'Twydall Profile' form of defensive installation. It represents a complete change in defensive tactics in the late 19th century from massive and prominent fortifications (such as Coalhouse Fort) to disguised defences. The battery is very well preserved and includes original features such as the ammunition lift machinery virtually intact. The location of the battery, its relationship and inter-visibility with the river and other defensive sites are aspects of its setting that contribute positively to its significance. Its group value is outlined below.
- 11.1.11 All of the assessed sites are associated with national defence and specifically with the defence of the River Thames as an approach to London. Some of the assessed sites comprise a palimpsest of fortifications that represent changing and dynamic military responses to external threats involving periodic alteration and upgrades to defences and armaments. At different periods the sites acted together to create patterns of crossfire and lines of defence against attackers approaching London via the Thames. The inter-relationships between the different sites as part of the Thames defences and sometimes wider national defence networks provide group value that adds to their significance. The main groupings relevant to the assessed sites are listed below:

- Gravesend Blockhouse and the blockhouse components of the Tilbury Fort and Coalhouse Fort sites are part a network of defences built for Henry VIII and are three of the five blockhouses built along the River Thames (the others are Milton and Higham). The Gravesend, Milton and Tilbury Blockhouses formed a pattern of crossfire.
- Gravesend Blockhouse, New Tavern Fort and Tilbury Fort protect the important crossing between Gravesend and Tilbury. They often act together to create a pattern of crossfire and line of defence (either first or second depending on the period)
- Successive defensive installations at Shornemead, Cliffe and Coalhouse sites strategically located to create a pattern of crossfire at a narrow point in the river. This includes:
 - Late 18th century batteries at Shornemead and Coalhouse
 - 1840s-1850s forts at Shornemead and Coalhouse
 - 1860s-1870s Royal Commission forts at Shornemead, Coalhouse and Cliffe
- All of the sites were impacted as a result of the 1860 Royal Commission recommendations and form part of the major construction programme of military defences that occurred in the 1860s-1880s. New forts constructed at Shornemead, Coalhouse and Cliffe formed the River Thames first line of defence, while New Tavern Fort and Tilbury Fort were upgraded to form a second line of defence.
- Evolving defensive tactics and military technology in the 1890s are represented at Coalhouse Fort (QF wing battery), the new East Tilbury Battery and the Brennan Torpedo installation at Cliffe Fort
- All the assessed sites illustrate the evolution of military strategy, tactics and technology. This is best demonstrated through comparison of the fortifications built in different periods and the successive rebuilding/upgrading that occurred in the 19th century. It is also clearly illustrated at New Tavern Fort which has a complete sequence of mounted guns representing each stage in its development.
- All of the sites had some role to play in the First and Second World Wars, whether as defensive positions or performing auxiliary functions, such as bases/accommodation for personnel or as storage/supply facilities. The Second World War components in particular form part of a larger network of national defence.

11.2 Conclusions

- 11.2.1 All of the assessed sites comprise or include heritage assets of national importance and significance, and all except Shornemead Fort include designated heritage assets.
- 11.2.2 Designated heritage assets benefit from enhanced protection in the planning system through the processes of Scheduled Monument Consent (SMC), Listed Building Consent (LBC) and planning permission.
- 11.2.3 The National Policy Statement for National Networks (NPSNN) indicates that in determining applications, the Secretary of State should seek to identify and assess the particular significance of **any** heritage asset that may be affected by the proposed development and consider the impact of said development. This encompasses both designated and non-



designated heritage assets. This requirement for identification, assessment and consideration of impact on heritage assets is consistent with the section 16 of National Planning Policy Framework (NPPF) and regional and local planning policies and supplementary planning documents that must conform with the national framework.

- 11.2.4 At time of writing, details of the works proposed for the Lower Thames Crossing scheme have not been finalised. It is likely that the Scheme will affect the setting of all of the assessed site heritage assets, but nature, extent and permanence of any changes to setting, and more importantly the potential impact this will have on the significance of the assessed sites and their heritage assets, cannot be determined at this stage.
- 11.2.5 The Scheme intersects the Scheduled Monument of Tilbury Fort and this localised physical impact may have a resultant impact on the significance of the asset. Also, it is possible that the Scheme will physically impact remains associated with East Tilbury Battery and Coalhouse Fort due to the very close proximity of the Scheme area to the designated heritage assets at these sites. However, the nature and extent of any impacts to significance cannot be determined at this stage.
- 11.2.6 The potential impact of the project on the significance of the assessed sites and their heritage assets will be assessed in the relevant Environmental Statement (ES) chapter.

REFERENCES

Bibliography

- Anderton M J 2000 *Twentieth century military recording project: World War Two Coastal Batteries*
- Ancient Monuments and Archaeological Areas Act 1979*. Available at: <http://www.legislation.gov.uk/ukpga/1979/46>.
- Brown, M and Pattison, P 2003 *Wing Battery, Coalhouse Fort East Tilbury, Essex: Survey Report* Archaeological Investigation Series 6/2003 English Heritage
- Chartered Institute for Archaeologists 2014 (revised 2017). *Standards and guidance for historic environment desk-based assessment*. Available at: [REDACTED]
- Department for Culture, Media and Sport (DCMS) October 2013. *Scheduled Monuments & nationally important but non-scheduled monuments*. Available at: <https://www.gov.uk/government/publications/scheduled-monuments-policy-statement>
- Department for Digital, Culture, Media and Sport (DDCMS) 2018. *Principles of Selection for Listing Buildings*. Available at: <https://www.gov.uk/government/publications/principles-of-selection-for-listing-buildings>
- Department for Transport 2014. *National Policy Statement for National Networks*. Available at: <https://www.gov.uk/government/publications/national-policy-statement-for-national-networks>
- English Heritage 2008. *Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment*. Available at: [REDACTED]
- FAS Heritage 2017a *Conservation Management Plan: Coalhouse Fort, East Tilbury, Thurrock. Final Draft Volume 1 Understanding the Heritage v.1.0*. Site code: CHF16. Report code: FAS2016 671 CHF628.
- FAS Heritage 2017b *Conservation Management Plan: Coalhouse Fort, East Tilbury, Thurrock. Final Draft Volume 2 Gazetteer v.1.0*. Site code: CHF16. Report code: FAS2016 671 CHF628.
- FAS Heritage 2017c *Conservation Management Plan: Coalhouse Fort, East Tilbury, Thurrock. Final Draft Volume 3 Risks, Opportunities, Vision and Policies v.1.0*. Site code: CHF16. Report code: FAS2016 671 CHF628.
- Highways England 2018. *Lower Thames Crossing: Specification for the Assessment of Military Remains*. Document Number: HE540039-CJV-GEN-GEN-SPE-GEO-00024
- Historic England 2015. *Managing Significance in Decision-Taking in the Historic Environment. Historic Environment Good Practice Advice in Planning: 2*. Available at: [REDACTED]

Historic England 2017a. *The Setting of Heritage Assets. Historic Environment Good Practice Advice in Planning Note 3 (Second Edition)* Available at:
[REDACTED]

Historic England 2017b. *Military Structures: Listing Selection Guide*. Available at:
[REDACTED]

Historic England 2018a. *Military Sites Post-1500: Scheduled Selection Guide*. Available at:
[REDACTED]

Historic England 2018b. *Introduction to Heritage Assets: Artillery Defences*. Available at:
[REDACTED]

Hogg, I V 1974 *Coast defences of England and Wales, 1856-1956*

Ministry of Housing, Communities and Local Government (MHCLG) 2019. *National Planning Policy Framework*. Available at: <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

Kent County Council 2004. *Kent Historic Town Survey: Gravesend Archaeological Assessment Document*. Available at: [REDACTED]

Place Services 2019. *Assessment of Settings: Thurrock Scheduled Ancient Monuments*

Planning Act 2008. Available at: <http://www.legislation.gov.uk/ukpga/2008/29/contents>

Planning (Listed Buildings and Conservation Areas) Act 1990. Available at: <http://www.legislation.gov.uk/ukpga/1990/9/contents>

Protection of Wrecks Act 1973. Available at: <http://www.legislation.gov.uk/ukpga/1973/33>

Smith, VTC no date. *Cross Fire!* Thames Defence Heritage leaflet

Smith, V no date. 'The Defence of Kent' on Kent County Council: Exploring Kent's Past website available at <https://webapps.kent.gov.uk/KCC.ExploringKentsPast.Web.Sites.Public/SingleResult.aspx?uid=Tke1060>

Smith, VTC 1974 'THE ARTILLERY DEFENCES AT GRAVESEND' in *Archaeologica Cantiana* Volume 89, 141-168

Smith, V 2007. *Shornemead Fort Shorne Marshes, near Gravesend, Kent: An archaeological desk study. Defending London's River*.

Smith, J 2008. *East Tilbury Thurrock, Essex: Historic Area Appraisal*. revised August 2008. English Heritage Research Department Report Series 21/2007

Thompson, DG 1976 'The Tudor Blockhouse at the Clarendon Royal Hotel, Gravesend.' In *Kent Archaeological Review*. Issue 45

Wessex Archaeology 2016. *New Tavern Fort, Gravesend, Kent: Conservation Management Plan*. Ref 112360.01



Wessex Archaeology 2020. *Lower Thames Crossing: Archaeological Desk-Based Assessment of 20th century Military Archaeology* Ref 218561.01

Historic Environment Records

Kent Historic Environment Record

Essex Historic Environment Record

Archive resources

Kent Archive and Local History Centre

- 1801 'An Entirely New & Accurate Survey Of The County Of Kent, With Part Of The County Of Essex', by William Mudge. Available at [REDACTED]
- Ordnance Survey maps

Assessed site/area	Kent Sheet	Essex Sheet	Scale	Publication Date
Cliffe Fort	XI.1	Parts of LXXXIV.5 & LXXXIX.3	25 inch:1 mile	1897
Cliffe Fort	IV.13		25 inch:1 mile	1897
Cliffe Fort	IV.13		25 inch:1 mile	1908
Cliffe Fort	XI.1		25 inch:1 mile	1939
Gravesend	X.7		25 inch:1 mile	1897
Gravesend	X.7		25 inch:1 mile	1909
Gravesend	X.7		25 inch:1 mile	1936
Gravesend	X NE	Parts of LXXXIV & LXXXIX	6 inch:1 mile	1899
Shornemead Fort	X.8		25 inch:1 mile	1897
Shornemead Fort	X.8		25 inch:1 mile	1908
Shornemead Fort	X.8		25 inch:1 mile	1897
Shornemead Fort	X.8		25 inch:1 mile	1932
Shornemead Fort	X.8		25 inch:1 mile	1939

Essex Record Office

- Ordnance Survey maps

Assessed site/area	Essex Sheet	National Grid sheet	Scale	Publication Date
Coalhouse Fort	LXXXIV.15		25 inch:1 mile	1884
Coalhouse Fort and East Tilbury Battery	LXXXIV.15		25 inch:1 mile	1897
East Tilbury Battery	(New series) XCVI.5		25 inch:1 mile	1922
East Tilbury Battery	(New series) XCVI.5		25 inch:1 mile	1939
Coalhouse Fort and East Tilbury Battery		TQ5168SE		1960
Tilbury Fort		TQ 67 NW	1:10000	1967



- 1861 - 'Coalhouse Fort, Thames', in East Tilbury. Schedule and plan ('declaration') of lands to be requisitioned for purposes of the Defence Act, 1860. ERO refs. Q/RUm 2/139A, Q/RUm 2/139B and Q/RUm 2/139C
- 1588-1778 Plans of Tilbury Fort. ERO refs. T/M 300/1-24
- Panoramic view of Tilbury Fort. ERO ref. T/M 300/25
- 1777 'A Map of the County of Essex...' by John Chapman & Peter André. Plate XXII

Online resources

Beyond the Point [REDACTED]

Cliffe History: Cliffe Fort [REDACTED]

Derelict Places [REDACTED]

The National Heritage List for England [REDACTED]

Pastscape [REDACTED]

Victorian Forts [REDACTED]

APPENDICES

Appendix 1: Terminology

Glossary

The terminology used in this assessment are consistent with NPSNN and follows definitions contained within Annex 2 of NPPF (updated 2019):

Archaeological interest	There will be archaeological interest in a heritage asset if it holds, or potentially holds, evidence of past human activity worthy of expert investigation at some point.
Conservation (for heritage policy)	The process of maintaining and managing change to a heritage asset in a way that sustains and, where appropriate, enhances its significance.
Designated heritage asset	A World Heritage Site, Scheduled Monument, Listed Building, Protected Wreck Site, Registered Park and Garden, Registered Battlefield or Conservation Area designated under the relevant legislation.
Heritage asset	A building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. It includes designated heritage assets and assets identified by the local planning authority (including local listing).
Historic environment	All aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, and landscaped and planted or managed flora.
Historic environment record	Information services that seek to provide access to comprehensive and dynamic resources relating to the historic environment of a defined geographic area for public benefit and use.
Setting of a heritage asset	The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral.
Significance (for heritage policy)	The value of a heritage asset to this and future generations because of its heritage interest. The interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting. For World Heritage Sites, the cultural value described within each site's Statement of Outstanding Universal Value forms part of its significance.

and from Planning Practice Guidance:

Architectural and artistic interest	These are interests in the design and general aesthetics of a place. They can arise from conscious design or fortuitously from the way the heritage asset has evolved. More specifically, architectural interest is an interest in the art or science of the design, construction, craftsmanship and decoration of buildings and structures of all types. Artistic interest is an interest in other human creative skill, like sculpture. Paragraph: 006 Reference ID: 18a-006-20190723; Revision date: 23 07 2019
Historic interest	An interest in past lives and events (including pre-historic). Heritage assets can illustrate or be associated with them. Heritage assets with historic interest not only provide a material record of our nation's history, but can also provide meaning for communities derived from their collective experience of a place and can symbolise wider values such as faith and cultural identity. Paragraph: 006 Reference ID: 18a-006-20190723; Revision date: 23 07 2019
Non-Designated heritage asset	Non-designated heritage assets are buildings, monuments, sites, places, areas or landscapes identified by plan-making bodies as having a degree of heritage significance meriting consideration in planning decisions but which do not meet the criteria for designated heritage assets. A substantial majority of buildings have little or no heritage significance and thus do not constitute heritage assets. Only a minority have enough heritage significance to merit identification as non-designated heritage assets. Paragraph: 039 Reference ID: 18a-039-20190723; Revision date: 23 07 2019



Chronology

Where referred to in the text, the main archaeological periods are broadly defined by the following date ranges:

Prehistoric	Palaeolithic	970,000–9500 BC
	Early Post-glacial	9500–8500 BC
	Mesolithic	8500–4000 BC
	Neolithic	4000–2400 BC
	Bronze Age	2400–700 BC
	Iron Age	700 BC–AD 43
Historic	Romano-British	AD 43–410
	Saxon	AD 410–1066
	Medieval	AD 1066–1500
	Post-medieval	AD 1500–1800
	19th century	AD 1800–1899
	Modern	1900–present day

Designated Heritage Assets

Designation	Associated Legislation	Overview
World Heritage Sites	-	The United Nations Educational, Scientific and Cultural Organisation (UNESCO) World Heritage Committee inscribes World Heritage Sites for their Outstanding Universal Value (OUV) – <i>cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity</i> . England protects its World Heritage Sites and their settings, including any buffer zones or equivalent, through the statutory designation process and through the planning system. The National Planning Policy Framework sets out detailed policies for the conservation and enhancement of the historic environment, including World Heritage Sites, through both plan-making and decision-taking.
Scheduled Monuments and Areas of Archaeological Importance	<i>Ancient Monuments and Archaeological Areas Act 1979</i>	Under the <i>Ancient Monuments and Archaeological Areas Act 1979</i> , the Secretary of State (DCMS) can schedule any site which appears to be of national importance because of its historic, architectural, traditional, artistic or archaeological interest. The historic town centres of Canterbury, Chester, Exeter, Hereford and York have been designated as Archaeological Areas of Importance under Part II of the <i>Ancient Monuments and Archaeological Areas Act 1979</i> . Additional controls are placed upon works affecting Scheduled Monuments and Areas of Archaeological Importance under the Act. The consent of the Secretary of State (DCMS), as advised by Historic England, is required for certain works affecting Scheduled Monuments.
Listed Buildings	<i>Planning (Listed Buildings and Conservation Areas) Act 1990</i>	In England, under Section 1 of the <i>Planning (Listed Buildings and Conservation Areas) Act 1990</i> , the Secretary of State is required to compile lists of buildings of special architectural or historic interest, on advice from English Heritage/Historic England. Works affecting Listed Buildings are subject to additional planning controls administered by Local Planning Authorities. Historic England is a statutory consultee in certain works affecting Listed Buildings. Under certain circumstances, Listed Building Consent is required for works affecting Listed Buildings.
Conservation Areas	<i>Planning (Listed Buildings and Conservation Areas) Act 1990</i>	A Conservation Area is an area which has been designated because of its special architectural or historic interest, the character or appearance of which it is desirable to preserve or enhance. In most cases, Conservation Areas are designated by Local Planning Authorities. Section 72 (1) of the <i>Planning (Listed Buildings and Conservation Areas) Act 1990</i> requires authorities to have regard to the fact that there is a Conservation Area when exercising any of their functions under the Planning Acts and to pay special attention to the desirability of preserving or enhancing the character or appearance of Conservation Areas. Although a locally administered designation, Conservation Areas may nevertheless be of national importance and significant developments within a Conservation Area are referred to Historic England.
Registered Parks and Gardens and Registered Battlefields	<i>National Heritage Act 1983</i>	The Register of Parks and Gardens was established under the <i>National Heritage Act 1983</i> . The Battlefields Register was established in 1995. Both Registers are administered by Historic England. These designations are non-statutory but are, nevertheless, material considerations in the planning process. Historic England and The Garden's Trust (formerly known as The Garden History Society) are statutory consultees in works affecting Registered Parks and Gardens
Protected Wreck Sites	<i>Protection of Wrecks Act 1973</i>	The <i>Protection of Wrecks Act 1973</i> allows the Secretary of State to designate a restricted area around a wreck to prevent uncontrolled interference. These statutorily protected areas are likely to contain the remains of a vessel, or its contents, which are of historical, artistic or archaeological importance.

Appendix 2: Extract from 1860 Royal Commissioners report

REPORT OF THE COMMISSIONERS APPOINTED TO CONSIDER THE DEFENCES OF THE UNITED KINGDOM; TOGETHER WITH THE MINUTES OF EVIDENCE AND APPENDIX; ALSO CORRESPONDENCE RELATIVE TO A SITE FOR AN INTERNAL ARSENAL. 1860

THAMES, MEDWAY, AND CHATHAM.

Thames.

Importance of - *The defence of the Thames involves interests of vast magnitude; it includes the security of the great powder magazine establishment at Purfleet; the important arsenal at Woolwich and the adjoining dockyard; the Government victualing stores and ship-building yard at Deptford; the large amount of valuable property extending for many miles on either bank of the river; the fleet of merchant shipping moored in the port of London; and, lastly, the metropolis itself. Great injury might be inflicted upon any or all of these by the ships of an enemy during the temporary absence of our own fleet from our shores; little argument, therefore, is needed to show that the efficient defence of the Thames is an object of most vital importance.*

The navigation of the channels at the entrance offers considerable difficulty to those who are unacquainted with the locality; but we cannot anticipate that an enemy would be unable to obtain experienced pilots to conduct his ships, when we look to the large number of foreign trading vessel and fishermen who have unlimited opportunities of becoming acquainted with the coast, addicted, as they would be, by our charts, beacons, and leading marks. We submit that it would be most unwise to trust such a means of defence, as would be afforded by the removal of the buoys and beacons, now placed to indicate the channels and dangers; the obstruction that would be offered to our own trade would be felt by the commercial world as almost as serious an evil as the attack itself; while, on the other hand, an enemy's fleet, in command of the North Sea, would have no difficulty in buoying the channel in two or three days for the passage of his own ships.

Entrance to – *No. practical project could be devised for protecting the entrance of the Thames by means of permanent fortifications; but, in order to prevent an enemy from obtaining unopposed possession of those waters, we are of opinion that moveable floating batteries, of the description mentioned in the preliminary part of the Report, should be stationed at Sheerness; these vessels, navigating among dangerous shoals, with which our officers would be thoroughly acquainted, would effectually protect the entrance of the Thames against any attempt on the part of a small squadron of the enemy; and would oppose a formidable check to the advance of even a superior force, by retarding them in the operation of buoying the channels, and attacking them when among the shoals, which are so numerous in that locality.*

Existing works – *The works at present existing for the defence of the Thames are as follow:- On the left bank at Coalhouse Point there is an open battery mounting 17 guns; on the opposite shore at Shornemead, about a mile higher up the river, there is a battery of 13 guns raking the approach; and at a distance of two miles from this latter work, still higher up the stream, are Tilbury Fort and the Gravesend Battery, the one affording fire of 32 heavy guns down and across the channel, and other having 15 guns bearing down the river.*

We are of opinion that although the positions are well selected; the works are insufficient to meet the description of attack that would probably be brought against them. The extent of injury that could be inflicted by an enemy, who had succeeded in forcing his way up the Thames, renders it probable that a very powerful naval force would be employed in such a service.

Proposed works – *We consider that the part of the river between Coalhouse Point and the opposite bank, where is it about 1,000 yards broad, is that best adapted for preventing, by means of permanent works, the further advance of a hostile fleet; and it has the advantage of being in immediate connexion with the line which we propose for the land defence of Chatham on its western side, the right flank of which rests on the Thames at that spot. We recommend that the Shornemead Battery, which is admirably situated, should be enlarged, and, as its importance is considerably increased by its connexion with the proposed defences of Chatham, it should be converted into a strong work on the land side. At Coalhouse Point, on the left bank, a powerful battery should be placed in addition to or in extension of the existing one, bringing the principal part of its fire to bear down the river and across the channel, but having some guns also bearing up the river in the direction*



of Gravesend. In addition to these, a work should be constructed on the right bank, opposite Coalhouse Point, at the southern point of the entrance to Cliffe Creak; and a floating barrier should be moored in time of war across the river, under the protection of these batteries, leaving a passage for our own vessels, for closing which every possible precaution should be taken at a time of expected attack.

In the event of the enemy's ships succeeding in forcing this first line of defence, in effecting which it is probable that he would receive considerable damage, he would then come under the fire of the batteries at Tilbury Fort and Gravesend; and we consider this second line so important that we recommend that these works should be put into the most thoroughly efficient state in every respect; their guns would cross their fire, at a distance of 2,000 yards, with those on Coalhouse Point and Shornemead; and a similar obstruction or floating barrier to that above recommended should be prepared, to be moored between Gravesend and Tilbury Fort.

Appendix 3: Extracts from Assessment of Settings: Thurrock Scheduled Ancient Monuments (Place Services, July 2019)

Coalhouse Fort Battery and Artillery Defences (SM1013943)

3.4.7 Future developments and other impacts within the setting of the heritage asset

Lower Thames Crossing: The proposed route of the Lower Thames Crossing will run to the west of the heritage asset although the actual road will lie within a tunnel at this point. The extraction of material from the tunnel is due to be stored on the Essex side of the Thames and will potentially impact the setting of the asset. The possibility of land raising has the potential of impacting the visual link with the Thames to the east and south.

3.4.8 Recommendations

There is a need to mitigate the impacts of the Lower Thames Crossing, liaison is required between Historic England and the Highways Agency consultants to develop an appropriate mitigate strategy which protects the setting of the heritage asset.

For any development schemes the setting of the monument needs to be taken into account, and where the setting cannot be preserved or the impacts appropriately mitigated the allocation should not be approved. Opportunities should be sought to preserve and enhance the setting of the heritage asset, particularly in restoring the former intervisibility between Tilbury Fort and Coalhouse Fort.

East Tilbury Battery (SM1013880)

3.9.7 Future developments and impacts within the setting of the heritage asset

Lower Thames Crossing: The monument is located within the Lower Thames Crossing corridor land take and its immediate setting is likely to be directly impacted on. Mitigation measures are proposed in the area to the east of the heritage asset which will need to consider the setting of the monument.

3.9.8 Recommendations

Mitigation measures for the Lower Thames Crossing will need to be put in place following liaison between Historic England and the Highways Agency consultants in order to develop an appropriate strategy to ensure the preservation of the monument and its setting. The Battery would benefit from a Conservation Management Plan to inform any discussions...

The Battery is now very overgrown and there has been some anti-social behavior on the site. It would benefit from a programme of shrub management. Opportunities should be sought to enhance the experience of the heritage asset, through opening for educational and general visits, information boards and other appropriate forms of promotion and interpretation. Opportunities for developer contributions to this work should be considered.

Tilbury Fort (SM1021092)

3.16.7 Future developments and impacts within the setting of the heritage asset

Lower Thames Crossing: The heritage asset is located approximately 500m to the west of the proposed Lower Thames Crossing corridor and its wider setting will be directly impacted. The scheme will have an impact on the intervisibility with the other fortifications on the Thames.

3.16.8 Recommendations

The Lower Thames Crossing promoters will need to ensure mitigation measures are put in place following liaison between Historic England and the Highways Agency consultants in order to preserve this intervisibility.

Opportunities should be sought to preserve and enhance the setting of the heritage asset, particularly in restoring the former intervisibility between Tilbury Fort and Coalhouse Fort and in managing further impacts of modern development as a consequence of the expansion of the redevelopment of the Tilbury Power Station site and other associated commercial developments.



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Registered office Bridge House, 1 Walnut Tree Close, Guildford GU1 4LZ

National Highways Company Limited registered in England and Wales number 09346363