



making sense of heritage

Esso Waterside Jetty, Harbour Road, Oulton Broad, Lowestoft, Suffolk

Historic Building Record



Suffolk Historic Environment Monument Ref: LWT 338

Suffolk Historic Environment Event Ref: ESF23213

Ref: 110380.2

August 2015



**Esso Waterside Jetty,
Harbour Road, Oulton Broad,
Lowestoft, Suffolk**

Historic Building Record

Prepared for:

Esso Petroleum Company Ltd
ExxonMobil House
Ermyrn Way
Leatherhead
Surrey
KT22 8UX

Prepared by:

Wessex Archaeology
1 Friary
Temple Quay
Bristol
BS1 6EA

www.wessexarch.co.uk

August 2015

Report Ref: 110380.2

Suffolk Historic Environment Monument Ref: LWT 338


Suffolk Historic Environment Event Ref: ESF23213



Quality Assurance

Project Code	110380	SHER Ref.	LWT 338	Client Ref.	-
Marine Management Organisation Marine Licence Ref.	L/2014/00157/2	Ordnance Survey (OS) national grid reference (NGR)	652709 29003		

Version Status* Prepared by Checked and Approved By Approver's Signature Date

v01	E	<i>Cai Mason</i>	<i>Matt Rous</i>		20/08/2015
File:	X:\PROJECTS\110380\Reports\110380_Oulton_Broad_Jetty_CM_201508118.docx				
v02					
File:					
File:					
File:					
File:					

* I= Internal Draft; E= External Draft; F= Final

DISCLAIMER

THE MATERIAL CONTAINED IN THIS REPORT WAS DESIGNED AS AN INTEGRAL PART OF A REPORT TO AN INDIVIDUAL CLIENT AND WAS PREPARED SOLELY FOR THE BENEFIT OF THAT CLIENT. THE MATERIAL CONTAINED IN THIS REPORT DOES NOT NECESSARILY STAND ON ITS OWN AND IS NOT INTENDED TO NOR SHOULD IT BE RELIED UPON BY ANY THIRD PARTY. TO THE FULLEST EXTENT PERMITTED BY LAW WESSEX ARCHAEOLOGY WILL NOT BE LIABLE BY REASON OF BREACH OF CONTRACT NEGLIGENCE OR OTHERWISE FOR ANY LOSS OR DAMAGE (WHETHER DIRECT INDIRECT OR CONSEQUENTIAL) OCCASIONED TO ANY PERSON ACTING OR OMITTING TO ACT OR REFRAINING FROM ACTING IN RELIANCE UPON THE MATERIAL CONTAINED IN THIS REPORT ARISING FROM OR CONNECTED WITH ANY ERROR OR OMISSION IN THE MATERIAL CONTAINED IN THE REPORT. LOSS OR DAMAGE AS REFERRED TO ABOVE SHALL BE DEEMED TO INCLUDE, BUT IS NOT LIMITED TO, ANY LOSS OF PROFITS OR ANTICIPATED PROFITS DAMAGE TO REPUTATION OR GOODWILL LOSS OF BUSINESS OR ANTICIPATED BUSINESS DAMAGES COSTS EXPENSES INCURRED OR PAYABLE TO ANY THIRD PARTY (IN ALL CASES WHETHER DIRECT INDIRECT OR CONSEQUENTIAL) OR ANY OTHER DIRECT INDIRECT OR CONSEQUENTIAL LOSS OR DAMAGE.



Esso Waterside Jetty, Harbour Road, Oulton Broad, Lowestoft, Suffolk

Historic Building Record

Contents

Summary	iii
Acknowledgements.....	iv
1 INTRODUCTION.....	1
1.1 Project background	1
1.2 The Site.....	1
2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND.....	1
2.2 Prehistoric and Romano-British	1
2.3 Saxon and Medieval.....	2
2.4 Post-medieval	2
2.5 19th century	2
2.6 20th century	3
3 METHODOLOGY.....	4
3.1 Aims and objectives	4
3.2 Recording Methodology	5
4 HISTORIC BUILDING RECORD.....	5
4.1 Construction	5
4.2 Alterations/phases.....	6
5 DISCUSSION AND CONCLUSIONS	6
6 STORAGE AND CURATION	7
6.1 Museum	7
6.2 Archive	7
6.3 OASIS.....	7
6.4 Copyright.....	7
6.5 Security Copy.....	7
7 REFERENCES.....	8
7.1 Bibliography	8



Figures

- Figure 1: Site location plan.
Figure 2: Historic Maps
Figure 3: Plan and elevations of jetty

Plates

- Cover: c 1901 photograph of the AAOC jetty, looking south-west, reproduced courtesy of Suffolk Records Office (SRO 715/A3/2/15).
- Plate 1: c 1901 photograph showing AAOC depot and jetty, looking south-west, reproduced courtesy of Suffolk Records Office (SRO 715/A3/2/15).
- Plate 2: Detail of c 1901 photograph showing AAOC jetty, looking south-west, reproduced courtesy of Suffolk Records Office (SRO 715/A3/2/15).
- Plate 3: Detail of c 1901 photograph of the AAOC jetty, looking south-west, reproduced courtesy of Suffolk Records Office (SRO 715/A3/2/15).
- Plate 4: Detail of c 1901 photograph AAOC depot, looking south-west, showing stack of wooden petroleum barrels, fuel storage tank and traction engine, reproduced courtesy of Suffolk Records Office (SRO 715/A3/2/15).
- Plate 5: General view of the Site and Lake Lothing, looking west
- Plate 6: General view of the jetty and former Esso depot, looking west
- Plate 7: General view of the jetty, looking south
- Plate 8: General view of the jetty, looking north-east
- Plate 9: North-east elevation of the jetty, looking south-west
- Plate 10: North-east elevation of the jetty, looking south
- Plate 11: Detail of south-eastern end of the jetty (north-east side), looking south
- Plate 12: Detail of south-eastern end of the jetty (north-east side), looking south-east
- Plate 13: South-west elevation of the jetty showing recent replacement piles, looking north-east
- Plate 14: South-east elevation of the jetty, looking east
- Plate 15: Detail of south-eastern end of the jetty (south-west side), looking south-east
- Plate 16: Detail of north-eastern mooring dolphin, looking north-east
- Plate 17: Deck of jetty, looking south-east
- Plate 18: Deck of jetty, looking north-west
- Plate 19: Deck of jetty, south-east end, looking north-east
- Plate 20: Deck of jetty, south-east end, showing south-west mooring dolphin and steel walkway, looking south-west
- Plate 21: Detail of swing-jib crane on the south-east end of the jetty, looking south



Esso Waterside Jetty, Harbour Road, Oulton Broad, Lowestoft, Suffolk

Historic Building Record

Summary

Wessex Archaeology was commissioned by Esso Petroleum Company Ltd to create an English Heritage/ Historic England Level 2 Historic Building Record (HBR) of a waterside jetty adjacent to a decommissioned Esso petroleum depot on Harbour Road, Oulton Broad, Lowestoft, Suffolk, centred on Ordnance Survey National Grid Reference (NGR) 652709 29003. The HBR work, which comprised a photographic survey and documentary research, was undertaken on the 10th and 11th August 2015, in order to comply with a condition of a Marine Management Organisation Marine Licence (ref. L/2014/00157/2) for the demolition of the jetty.

The jetty and associated fuel storage depot was constructed c. 1901 for Esso's predecessor, the Anglo-American Oil Company Ltd. The timber jetty, which was built to facilitate the unloading of wooden petroleum barrels, was originally fitted with a wooden sheerleg lifting device. By 1904 the sheerleg had been replaced with a steel swing-jig crane mounted on the south-eastern end of the jetty. There was an extant crane in this position, but it had been re-mounted at some point and it is unclear if it was an original feature or a later replacement.

Although the jetty retained its basic form, decay caused by the harsh intertidal environment had necessitated extensive rebuilding, which included the complete replacement of the south-eastern end of the structure and the addition of new piles along its entire length. At least two major phases of rebuilding are evident; it is unclear when the first rebuild occurred, but the second is likely to be contemporary with the construction of mooring dolphins and associated steel walkways in the 1970s or 80s.



Esso Waterside Jetty, Harbour Road, Oulton Broad, Lowestoft, Suffolk

Historic Building Record

Acknowledgements

Wessex Archaeology would like to thank Esso Petroleum Company Ltd for commissioning and funding the work, and Phil Holt (Project Manager, ExxonMobil Environmental Services Group) and Richard Hoggett (Senior Archaeological Officer, Suffolk County Council) for their assistance throughout the project. We would also like to thank the staff at the Suffolk Records Office, and Ivan Bunn in particular for his assistance with the historic research.

The Historic Building Record was created and compiled by Cai Mason. The illustrations were produced by Karen Nichols. The project was managed by Andy King.



Esso Waterside Jetty, Harbour Road, Oulton Broad, Lowestoft, Suffolk

Historic Building Record

1 INTRODUCTION

1.1 Project background

1.1.1 Wessex Archaeology was commissioned by Esso Petroleum Company Ltd (hereafter the 'Client') to create a Historic England Level 2 Historic Building Record (HBR) of a wooden jetty adjacent to a decommissioned Esso petroleum depot on Harbour Road, Oulton Broad, Lowestoft, Suffolk, centred on Ordnance Survey National Grid Reference (NGR) 652709 29003 (hereafter 'the Site'; **Figure 1**).

1.1.2 The HBR work was undertaken in order to comply with a condition of a Marine Management Organisation Marine Licence (ref. L/2014/00157/2) for demolition of the jetty. A photographic survey of the jetty was undertaken on the 10th August 2015 in accordance with a Written Scheme of Investigation (WSI) (Wessex Archaeology 2015). The WSI was submitted for approval by the Senior Archaeological Officer for Suffolk County Council.

1.2 The Site

1.2.1 The Site comprises the former Esso Oulton Broad Bulk Plant, on Harbour Road, in the Oulton Broad district of Lowestoft, Suffolk, which is bounded by Harbour Road to the north-west, an unsurfaced track and open land to the north-east, Lake Lothing to the south-east and a boatyard to the south-west (**Figure 1**).

1.2.2 Lake Lothing is an artificial channel that lies within a natural depression linking the River Waveney to the North Sea. Lake Lothing, together with the River Waveney and the North Sea, form a continuous circuit of water that define an island of higher ground known as Lothingland (Moss 2001, 91).

1.2.3 The geology of the Site comprises Pliocene and Pleistocene sand and gravel of the Crag Group, which is overlain by superficial deposits of clay and silt within Lake Lothing (BGS 2015). Ground levels within the Site range from approximately 5 m below Ordnance Datum within Lake Lothing to 7.65 m above Ordnance Datum adjacent to Harbour Road.

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

2.1.1 The archaeological and historical background to the Site is drawn from the Suffolk Historic Environment Record (SHER), primary held by Suffolk Records Office (SRO) and secondary sources such as the *Lowestoft URC Area, Suffolk, Cultural Heritage Assessment* (Scott Wilson Ltd 2006). SHER entries are prefixed by the letters LWT.

2.2 Prehistoric and Romano-British

2.2.1 There is widespread evidence of human activity from the Palaeolithic to Romano-British periods in the surrounding area, but none in the immediate vicinity of the Site.



2.3 Saxon and Medieval

- 2.3.1 The name Lowestoft is derived from the Viking personal name *Hlothver* and *toft*, meaning homestead (Mills 1996, 227). At the time of the Domesday Survey (AD 1086), the Site lay within the Royal manor of Lothingland. There were three small settlements within what is now the Lowestoft conurbation, all of which were Crown properties. Prior to the Norman Conquest, the largest village, *Lothuwistoft*, was held by the Saxon Earl Gyrth; whilst the smaller settlements of Aketorp (*Akethorpe*) and Kirkley (*Kirkelea*) had formerly been held by 'Aelmer the priest' and 'Wilfsi and twelve free men' respectively (Open Domesday 2015).
- 2.3.2 During the medieval period Lake Lothing linked the River Waveney to the sea and provided a sheltered harbour for the port of Kirkley. However, in the 14th century the encroachment of a sand bar blocked the entrance to the sea (Scott Wilson Ltd 2006, 22-3). The loss of Kirkley's port spurred the growth of Lowestoft, which by the later medieval period had become an important fishing town.
- 2.3.3 It has been suggested that parts of Oulton Broad and Lake Lothing (LWT 153 and 154) were artificially deepened by medieval turbarry (peat digging), but the evidence for this remains unclear.

2.4 Post-medieval

- 2.4.1 There has been a crossing over Oulton Broad and Lake Lothing at Mutford Bridge (LWT 037) since at least 1575, but the present bridge is modern.
- 2.4.2 During the mid-18th century the fashion for sea bathing led to the development of Lowestoft as a health resort, but herring fishing remained the most important industry in the town throughout the 18th and 19th centuries (Scott Wilson Ltd 2006, 42-3).

2.5 19th century

- 2.5.1 In 1831 a new navigable watercourse was created through Oulton Broad and Lake Lothing that re-established the link between the River Waveney and the North Sea (Ellis 1965, 257). Lake Lothing was subsequently developed as a harbour.
- 2.5.2 By 1830, a small settlement had grown up around Mutford Bridge; this subsequently expanded to become the village of Oulton Broad.
- 2.5.3 The earliest detailed cartographic depiction of the Site is the Lowestoft Tithe Map of 1842, which shows the Site as a large arable field known as 'Home Piece'. The field extended from the junction between Gorleston Road, Normanston Drive and Bridge Road down to the shore of Lake Lothing. Home Piece and most of the surrounding fields and gravel pits were owned by Lincoln John Salter.
- 2.5.4 Lowestoft's 19th-century expansion was heavily influenced by the railway tycoon Sir Samuel Morton Peto (1809-1889), who purchased the harbour in 1844 and was responsible for construction of the Great Eastern Railway (GER) Reedham and Lowestoft Branch, which opened in 1847. A separate branch line to Beccles opened in 1854 (Scott Wilson 2006, 26). The advent of rail transport spurred the growth of the town as a beach resort, whilst Peto's investment in the harbour supported the growth of the local fishing and shipbuilding industries.
- 2.5.5 The 1:2500 First Edition Ordnance Survey (OS) plan of 1885 (surveyed 1881), shows the village of Oulton Broad, with the rail lines to Norwich and Beccles a short distance to the

north of the Site. The 1885 plan also shows an unenclosed and unnamed track along the line of Harbour Road and a small building immediately to the east of the Site. The word 'Jetty' is also marked on the shore of Lake Lothing, but there are no structures depicted. The Site itself remained undeveloped at this date.

2.6 20th century

- 2.6.1 By the time of the 1905 published edition 1:2500 OS plan (surveyed 1903-4; **Figure 2**), the area around Harbour Road, which was unnamed at this date, had been developed as an industrial suburb that contained a small area of terraced houses, a large shipbuilding yard, two timber yards, an iron foundry and a petroleum depot. The latter establishment, which is identified on the plan as the 'Anglo American Oil Works' encompassed the whole of the present Site. The plan shows three rectangular buildings and two circular fuel tanks within the depot, and a jetty that provided access for ships moored in Lake Lothing. There was a crane on its south-eastern end of the jetty, which was flanked by two navigation beacons.
- 2.6.2 The Anglo-American Oil Company (AAOC) was established in 1888 by John D. Rockefeller (1839-1937) as a distributing subsidiary for petroleum products (mainly petrol and lamp oil) produced by the Standard Oil Company (Grace's Guide 2013; *The Stock Exchange Year Book* 1908); the company's first depot was located in Purfleet, Essex. The rapid growth in the market for petroleum products during the 1890s, led to the establishment of a number of depots in East Anglia, which are listed in contemporary trade directories in Great Yarmouth by 1892, King's Lynn by 1896, Sudbury and Bury St Edmunds by 1900 and Lowestoft by 1902 (Kelly's 1892, 1896, 1900, 1902,). The Lowestoft depot's address is listed as either 'Oulton Broad' or 'North Side, Harbour' (Kelly's 1902, 1904, 1912, 1914); the name Harbour Road doesn't appear until 1925 (Kelly's 1925). The AAOC's early products included Pratt's Motor Spirit (petrol) and Royal Daylight lamp oil (Grace's Guide 2013).
- 2.6.3 The SRO holds an early undated glass negative (SRO 715/A3/2/15), which depicts the AAOC depot and jetty viewed from the north-east (**Cover and Plates 1-4**). The photograph shows a group of men and a shearleg lifting device on the jetty, a large circular fuel storage tank and a tall, timber-clad and corrugated-iron-roofed industrial building with roof lights, set within a large yard defined by corrugated iron wall. The yard contains a huge pile of wooden barrels and there is a traction engine fitted with a towing yoke (for a horse) parked in front of the entrance. The photograph shows only one fuel tank within the depot, as opposed to the two shown on the 1905 OS plan, and no crane on the end of the jetty (also depicted on the OS plan; see **Figure 2**). The absence of these features, suggests that the photograph was taken soon after the depot was constructed, probably c 1901.
- 2.6.4 The presence of wooden barrels within the depot is unsurprising given that the 42-gallon wooden petroleum barrel was the standard vessel for transporting oil and petroleum products at the turn of the century (AOGHS 2015a). The disadvantages of using wooden petroleum barrels, which were expensive to make and prone to leaking, was highlighted by the explosion of the wooden schooner 'Flown' of the coast of Lowestoft in 1902 (Board of Trade 1902, 64). Explosions caused by leaking petroleum vapours were not uncommon and there was considerable interest in providing a safer and cheaper alternative. Although the Standard Oil Company introduced a steel barrel in 1902, these were still prone to leaking, and the problem wasn't solved until the Iron Clad company invented the modern steel oil drum in 1905 (AOGHS 2015b).

- 2.6.5 In 1911 the United States Supreme Court ruled that the Standard Oil Company was operating an illegal monopoly, as a result the company was split into 34 separate entities, one of which, Standard Oil of New Jersey, eventually became Exxon. AAOC continued to operate as a British subsidiary of Standard Oil of New Jersey.
- 2.6.6 The 1927 edition 1:2500 OS plan (revised 1926) shows essentially the same layout within the Site as the 1905 plan, but by this date, a further five circular fuel tanks had been constructed within the depot. Two of the buildings shown on the earlier plan had also been demolished and a number of small ancillary structures or extension had been constructed around the edges of the depot. The present entrance from Harbour Road existed by this date. The plan also shows further development in the surrounding area, including a major extensions to ship and boat building yards and an extension of AAOC's depot into a yard on the north of Harbour Road; the later property contained a railway siding, crane and storage tank.
- 2.6.7 In 1935 AAOC replaced its Pratt's brand with the American brand Esso, which was a phonetic allusion to the parent company's initials (SO = ESSO) (Graces Guide 2013; *The Times*, 5 April 1935).
- 2.6.8 The Site is depicted in a 1939 oblique aerial photograph (Historic England 2015a), which shows that the smaller diameter fuel tanks were all as high as the main tank.
- 2.6.9 A 1946 vertical aerial photograph (Google Earth) shows the same layout as the 1927 plan, but by this date a further five rectangular structures had been built adjacent to the circular tanks; these features were probably also storage tanks.
- 2.6.10 The 1950 edition 1:1250 OS plan (surveyed 1949; **Figure 2**) shows the same layout as the 1946 photograph. The depot and the yard to the north are labelled 'Petroleum Storage Depot'. The 1958 1:1250 and 1966 1:2500 OS plans shows the same layout as the 1950 plan, but without the circular tanks; these features are shown on later plans in exactly the same locations, so their absence from the 1958 and 1966 plans appears to be a deliberate omission.
- 2.6.11 In 1951 AAOC was renamed as the Esso Petroleum Company Ltd.
- 2.6.12 The 1971 edition 1:1250 OS plan shows the same layout as the 1950 plan, but with one circular tank and two rectangular tanks removed; by this date the main depot building had also been demolished.
- 2.6.13 The 1989 edition 1:1250 OS plan shows the same layout as the 1971 plan, but with the addition of two mooring dolphins linked by narrow walkways either side of the jetty.
- 2.6.14 Historic satellite images (Google Earth) show that the Site retained its 1971 layout until at least 1999, but by 2006 the whole depot had been cleared of buildings. There have been shipping containers on the jetty since at least 1999. The walkway to the north-eastern dolphin remained intact in 2007, but it has subsequently collapsed or been removed.

3 METHODOLOGY

3.1 Aims and objectives

- 3.1.1 The principal aim of the recording project was to create an English Heritage/ Historic England Level 2 (descriptive) record of the jetty prior to its demolition so that it could be 'preserved by record'.



3.2 Recording Methodology

- 3.2.1 The historic building record was created on the 12th August 2015 by an experienced WA buildings archaeologist.
- 3.2.2 The historic building record involved photography and use of existing survey drawings. A digital photographic record of the jetty was captured using a Canon 5D EOS Mark II Full Frame digital camera with 21 megapixel capability. The photographic survey was undertaken with due regard to the document *Understanding Historic Buildings: A guide to good recording practice* (English Heritage 2006) and Historic England's *Digital Image Capture and File Storage: Guidelines to Best Practice* (Historic England 2015b). The Client provided detailed architectural plans of the structure, which were annotated on site to show the locations of the photographs and structural features of note.
- 3.2.3 A selection of the formal photographic archive has been used for illustration purposes in this report (**Plates 6-21**). Existing drawings supplied by the client (**Figure 3**) have been annotated and show the location and direction of the plates used in this report.

4 HISTORIC BUILDING RECORD

4.1 Construction

- 4.1.1 The jetty was aligned north-west to south-east and measured 28 m long by 3.6 m wide, with a 7.2 m by 9.2 m wide section on the south-eastern end. The structure was supported by series of 260 mm square timber piles. Above ground, the piles ranged from 0.8m high on the landward side to up to 8 m within Lake Lothing (ABB Ltd 2012, Appendix A). The piles supported 250 mm x 120 mm thick lateral beams, which in turn supported 230mm x 75mm joists for 150 mm x 75 mm thick timber decking boards. Lateral bracing was provided by 230 mm x 75 mm thick diagonal timbers. All of the timber joints were bolted (ABB 2012, Appendix B).
- 4.1.2 The south-eastern end of the jetty was supported by a further four 400 mm square piles on its corners, which were fixed to the main structure with a welded and bolted channel-section steel tie.
- 4.1.3 There were a further two vertical timbers at the south-eastern end of the jetty, which supported a swing-jib crane. The crane comprised a vertical steel tube, bolted to the deck, with a box-section steel jib painted with the letters 'SWL 1 TONNE'. The crane was fitted with two hand-operated chain loops that controlled its horizontal movement and hoist. The manufacturer's plate was obscured by paint.
- 4.1.4 A single iron or steel pipe was noted beneath the centre of jetty. This part of the jetty was inaccessible at the time of the survey and the function of the pipe remains unclear. However, it is possible that it was used to pump fuel to/from moored vessels; alternately it may simply have been a drain.
- 4.1.5 The south-eastern end of the jetty was protected from vessel impact by two concrete-filled hollow steel tubes covered with vehicle tyres, which acted as fenders.
- 4.1.6 There were also two concrete mooring dolphins to the north-east and south-west of the jetty, each of which was supported on four steel piles. Each dolphin had a further steel pile with a compressible fender attached to their south-eastern sides. The dolphins were originally linked to the main jetty via a steel walkway; the south-western walkway was extant, but the north-eastern one had been removed.

4.1.7 Three steel shipping containers had been placed on the deck of the jetty, which was enclosed within a modern steel-mesh fence. The underside of the jetty, which was inaccessible, was largely obscured by a line of Heras fence panels, which were partially covered with seaweed and other debris.

4.2 Alterations/phases

4.2.1 Although the wooden jetty retained its basic form throughout the 20th century, the building survey demonstrated that the majority of the timbers have been replaced. This is particularly evident at the south-eastern end of the jetty, where a comparison between the extant structure (**see Plate 9-11**) and a c 1901 photograph (**Plates 2-3**), shows that the whole of the south-eastern end of the jetty has been rebuilt since the photograph was taken. The rebuilt structure was subsequently reinforced with four additional piles on the corners, which were bound to the main structure with a bolted and welded steel channel-section tie.

4.2.2 The c. 1901 photograph shows that the jetty was originally fitted with a sheerleg lifting device, but by 1904 it had been replaced with a crane mounted on the south-eastern end of the jetty. There was an extant crane in this position at the time of the survey, but the fact that its vertical timber supports are recent replacements, suggest that it has been re-erected or replaced at some point.

4.2.3 The concrete mooring dolphins and their associated walkways were constructed in the 1970s or 80s. Given that the construction of these structures represent a significant investment in the jetty, it seems likely that many of the repairs to the timber jetty were undertaken at this date.

4.2.4 The mesh fence around the jetty was probably erected when the steel shipping containers placed on the deck; this occurred before 1999. The late 20th-century use of the jetty as a store suggest that by this date it had largely gone out of use as a mooring for unloading vessels.

5 DISCUSSION AND CONCLUSIONS

5.1.1 The Esso jetty was constructed c. 1901 as part of a purpose-built petroleum storage depot for Esso's predecessor, the Anglo-American Oil Company.

5.1.2 The jetty was originally fitted with a sheerleg lifting device, which was probably used to lift 42-gallon wooden petrol barrels off ships moored in the harbour. It is unclear how the fuel was transferred from the barrels into the storage tanks within the depot, but it seems likely that there was some sort of pump within the depot. By 1904 the sheerlegs had been replaced with a swing-jib crane.

5.1.3 A comparison between a c. 1901 photograph and the present structure indicates that the whole of the south-eastern end of the jetty has been completely re-built at some point, and that the rebuild was subsequently strengthened by the addition of four corner piles. Further piles, cross braces and other supports have been added to the jetty, with the result that very little of the original structure survived at the time of the survey.

5.1.4 By the mid-1920s, the AAOC's depot had been linked to the rail network via a siding on the north side of Harbour Road, and it is probable that by this date some of the fuel was being transported by rail tanker.



- 5.1.5 During the 1970s or 80s two concrete mooring dolphins with associated steel walkways were added to the jetty to facilitate the docking of large ships. The construction of the dolphins may be contemporary with some of the more recent modifications to the timber jetty.
- 5.1.6 By the early 21st century, the small size of the depot was clearly limiting its usefulness and by 2006 the depot had been closed and cleared of buildings. A 2012 structural survey (ABB 2012) revealed that the jetty was in a very poor state of repair and that the piles had decayed to such a degree that the structure was considered in danger of collapse.
- 5.1.7 The HBR has created a permanent record of the surviving elements of this early petroleum-depot jetty, associated with a period of modern history when the oil industry, which was beginning to supplant coal as the primary fuel of industry and transportation, was moving away from traditional technologies of transportation, i.e. wooden barrels and merchant ships, towards purpose built oil tankers, which became the standard means of transportation in the 20th century.

6 STORAGE AND CURATION

6.1 Museum

- 6.1.1 With the full agreement of the landowner the project archive will be deposited for long-term storage with Suffolk County Council Archaeological Service Conservation Team under reference number LWT 338. Prior to deposition the archive will be temporarily stored at Wessex Archaeology's offices in Salisbury under Site Code 110380.

6.2 Archive

- 6.2.1 The complete site archive, which will include paper records, photographic records, graphics and digital data, will be prepared following the standard conditions for the acceptance of the designated repository and in general following nationally recommended guidelines (SMA 1995; ClfA 2014b; Brown 2011; ADS 2013; Historic England 2015b).

6.3 OASIS

- 6.3.1 An OASIS online record <http://ads.ahds.ac.uk/projects/oasis/> has been initiated for the work and key fields in regard of the evaluation has been entered under OASIS ID wessexar1-220120. All appropriate parts of the OASIS online form will be completed for submission to the Suffolk Environment Record. This will include an uploaded .pdf version of the entire report (a paper copy will also be included with the archive).

6.4 Copyright

- 6.4.1 The full copyright of the written/illustrative archive relating to the Site will be retained by Wessex Archaeology Ltd under the *Copyright, Designs and Patents Act 1988* with all rights reserved. The Museum, however, will be granted an exclusive licence for the use of the archive for educational purposes, including academic research, providing that such use shall be non-profit making, and conforms to the *Copyright and Related Rights regulations 2003*.

6.5 Security Copy

- 6.5.1 In line with current best practice (Brown 2011), on completion of the project a security copy of the written records will be prepared, in the form of a digital PDF/A file. PDF/A is an ISO-standardised version of the Portable Document Format (PDF) designed for the digital



preservation of electronic documents through omission of features ill-suited to long-term archiving.

7 REFERENCES

7.1 Bibliography

- ABB, 2012, *Structural Survey of the Jetty at Oulton Broad, Suffolk for ExxonMobil*, unpubl rep 300040883, ABB Ltd, Billingham
- American Oil and Gas Historical Society [AOGHS], 2015a. *History of the 42-Gallon Oil Barrel* <http://aoghs.org/transportation/history-of-the-42-gallon-oil-barrel/> Accessed 13 August 2015
- 2015b. *Nellie Bly Oil Drum* <http://aoghs.org/transportation/nellie-bly-oil-drum/> Accessed 13 August 2015
- Archaeology Data Service [ADS], 2013. *Caring for Digital Data in Archaeology: a guide to good practice*, Archaeology Data Service & Digital Antiquity Guides to Good Practice
- Board of Trade, 1902. *Flown*, wreck report No. 120.
http://www.plimsoll.org/images/72064_tcm4-307236.pdf Accessed: 18 August 2015
- British Geological Society [BGS], 2015. *Geology of Britain Viewer*
<http://mapapps.bgs.ac.uk/geologyofbritain/home.html> Accessed: 12 August 2015
- Brown, D.H., 2011. *Archaeological archives; a guide to best practice in creation, compilation, transfer and curation*, Archaeological Archives Forum (revised edition)
- Chartered Institute for Archaeologists [CIfA], 2014. *Standard and Guidance for the creation, compilation, transfer and deposition of archaeological archives*, Institute for Archaeologists
- Ellis, E.A., 1965. *The Broads*. Collins, London.
- English Heritage [EH], 2006. *Understanding Historic Buildings: a guide to good recording practice*.
- Grace's Guide, 2013. *Anglo-American Oil Co.* http://www.gracesguide.co.uk/Anglo-American_Oil_Co Accessed: 13 August 2015
- Grace's Guide, 2014. *Esso.* <http://www.gracesguide.co.uk/Esso> Accessed: 13 August 2015
- Historic England, 2015a. *The Eastern Coach Works Ltd Coachbuilding Factory and environs, Lowestoft, 1939.* <http://www.britainfromabove.org.uk/image/epw060804> Accessed: 13 August 2015
- 2015b. *Digital Image Capture and File Storage Guidelines for Best Practice.* <https://content.historicengland.org.uk/images-books/publications/digital-image-capture-and-file-storage/heaq059-digital-images.pdf/> Accessed: 18 August 2015
- Kelly's, 1892, *Kelly's Directory of Cambs, Norfolk & Suffolk*
- 1896, *Kelly's Directory of Norfolk*
- 1900, *Kelly's Directory of Suffolk*
- 1902, *Kelly's Directory of Lowestoft*
- 1912, *Kelly's Directory of Lowestoft*



-- 1925, *Kelly's Directory of Lowestoft*

Mills, A.D., 1998. *A Dictionary of English Place-names*. Second Edition. Oxford University Press, Oxford

Moss, B., 2001. *The Broads*. Harper Collins, London

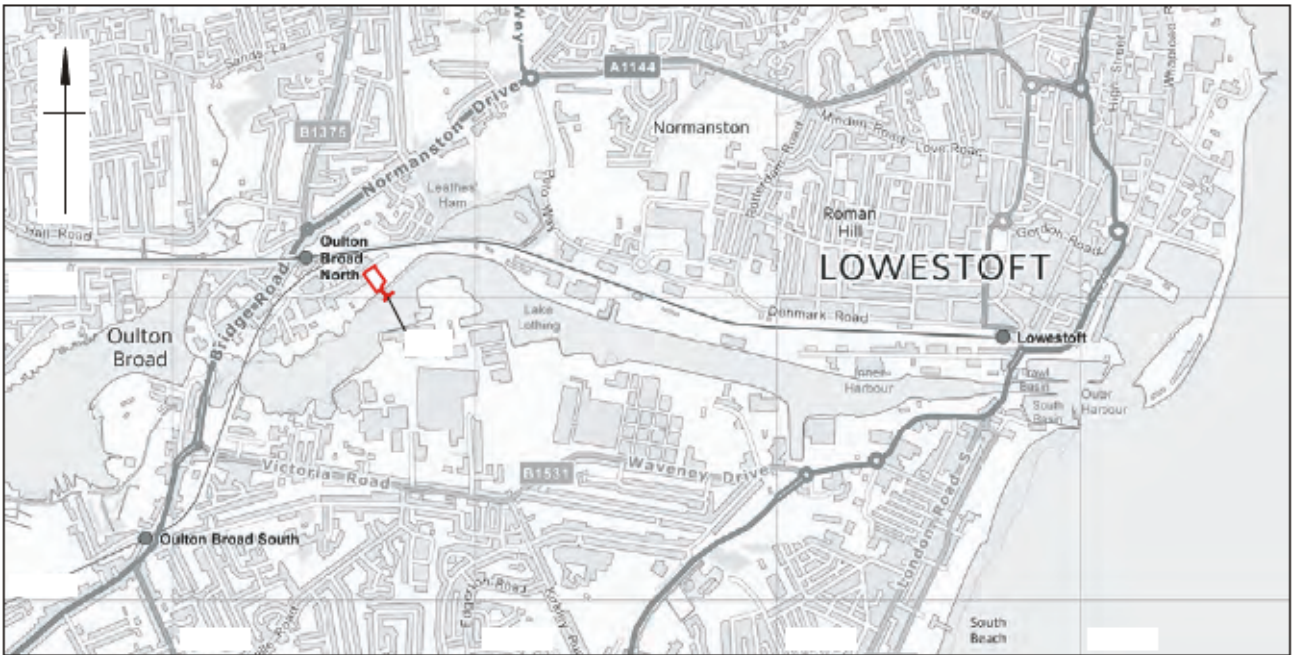
Open Domesday, 2015. <http://opendomesday.org/place/TM5291/kirkley/> Accessed: 12 August 2015

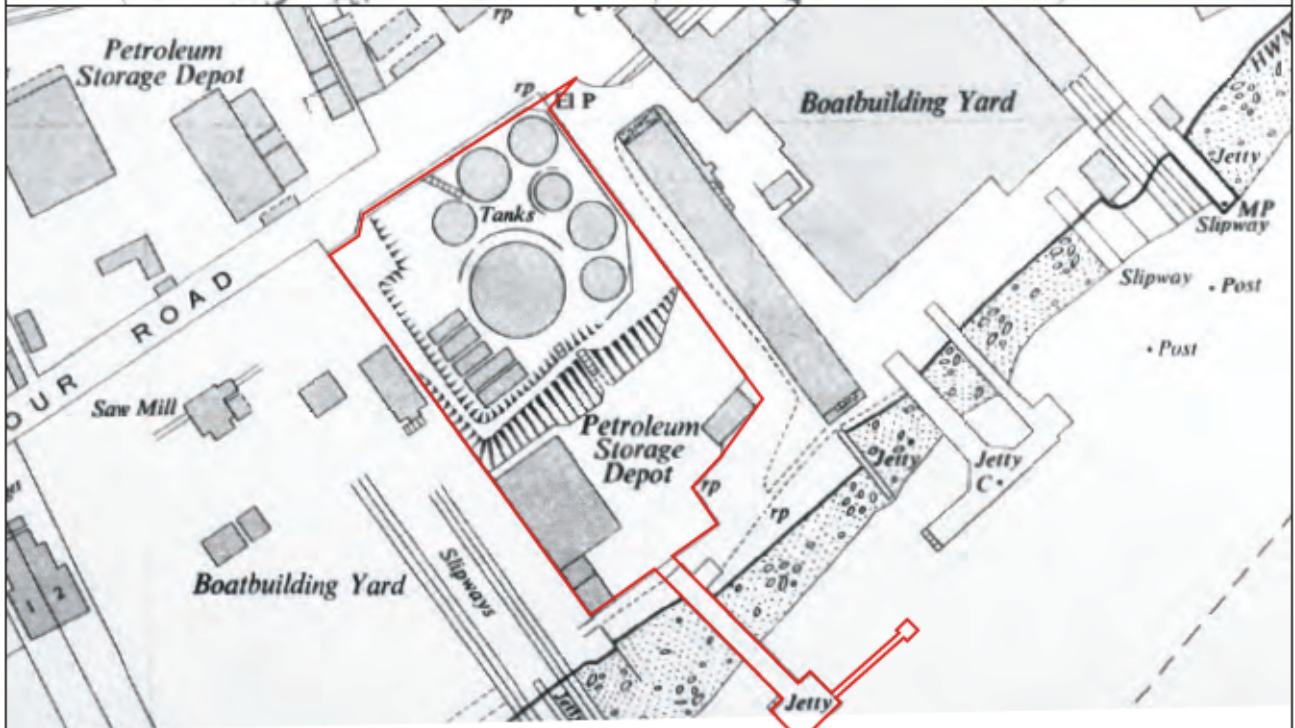
Scott Wilson Ltd, 2006. *Lowestoft URC Area, Suffolk, Cultural Heritage Assessment*, unpublished Client report for the East of England Development Agency

Society of Museum Archaeologists [SMA], 1993. *Selection, Retention and Dispersal of Archaeological Collections*, Society of Museum Archaeologists

-- 1995, *Towards an Accessible Archaeological Archive*, Society of Museum Archaeologists.

Wessex Archaeology [WA], 2015, *Esso Waterside Jetty, Harbour Road, Oulton Broad, Lowestoft, Written Scheme of Investigation for Level II Historic Building Recording*, ref. 110380.01, Unpublished Client report.





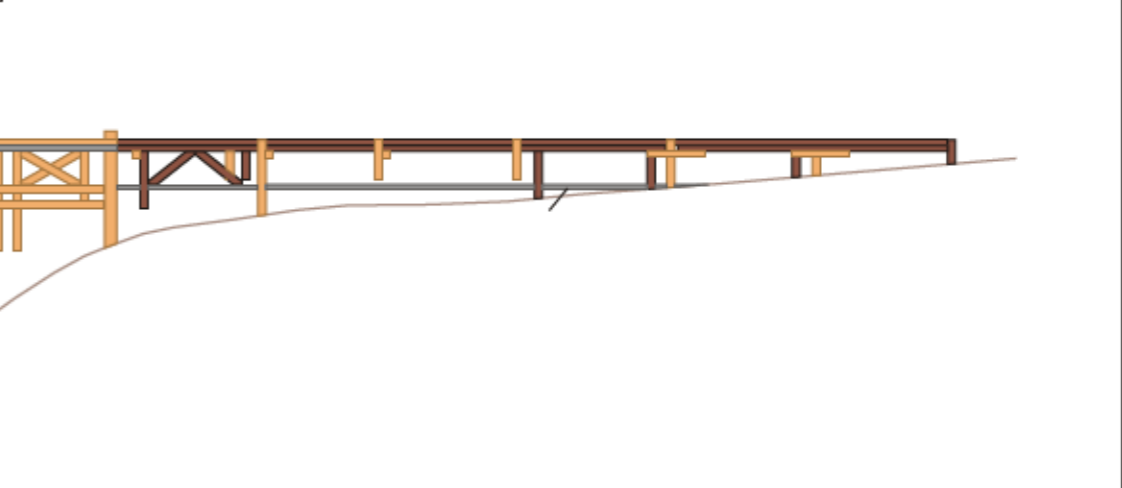
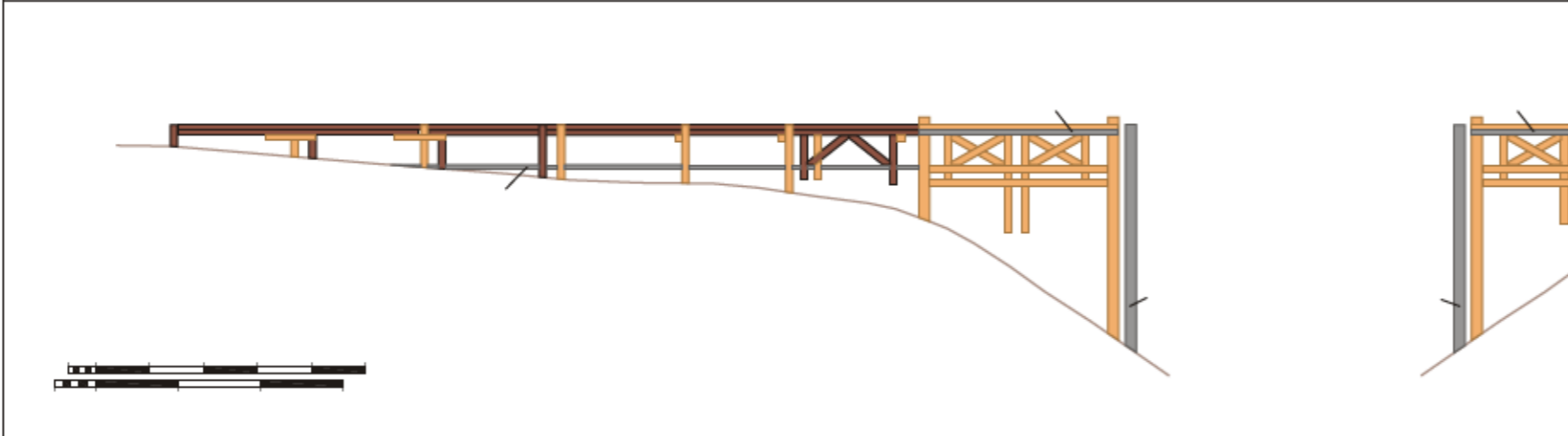
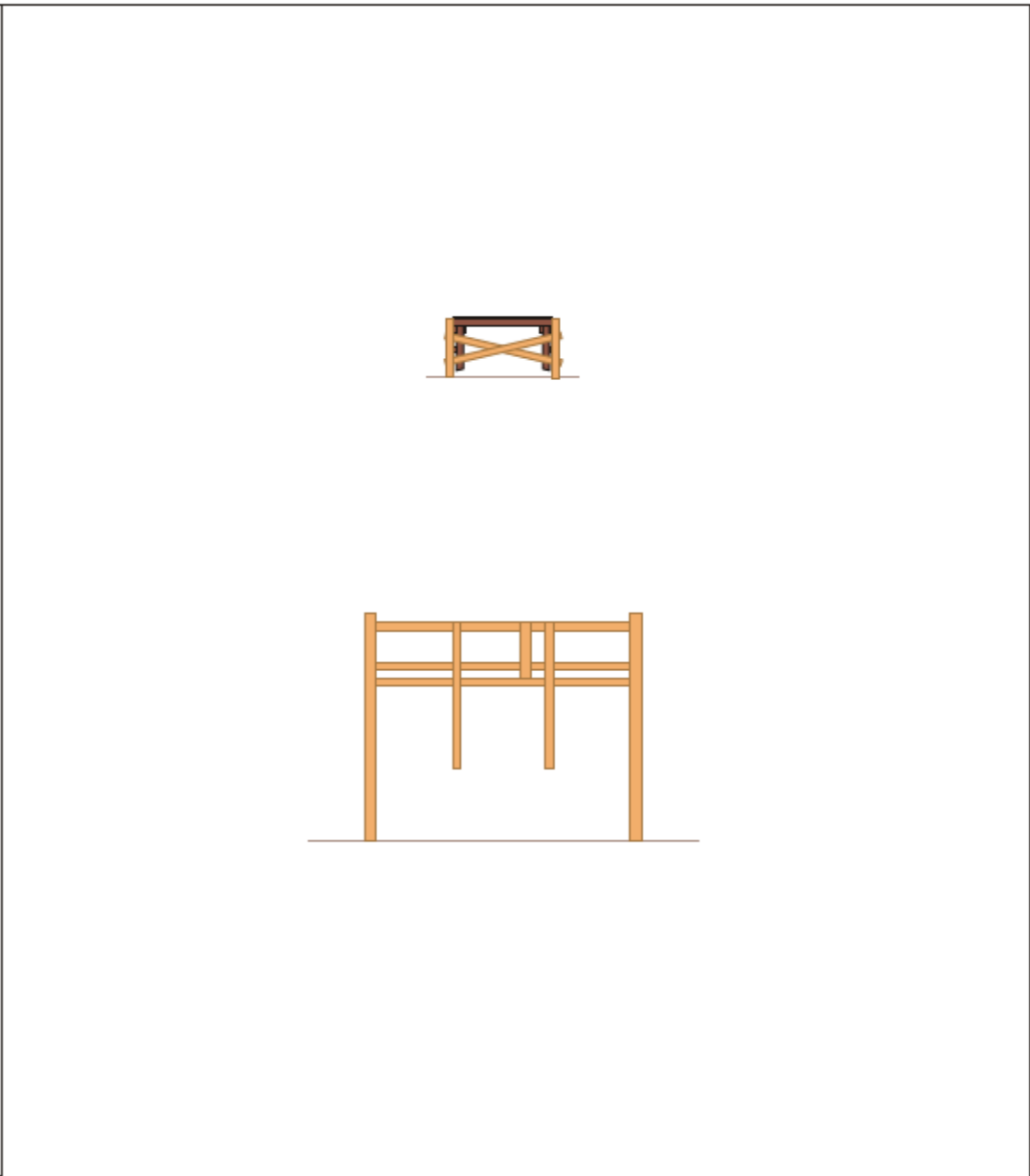
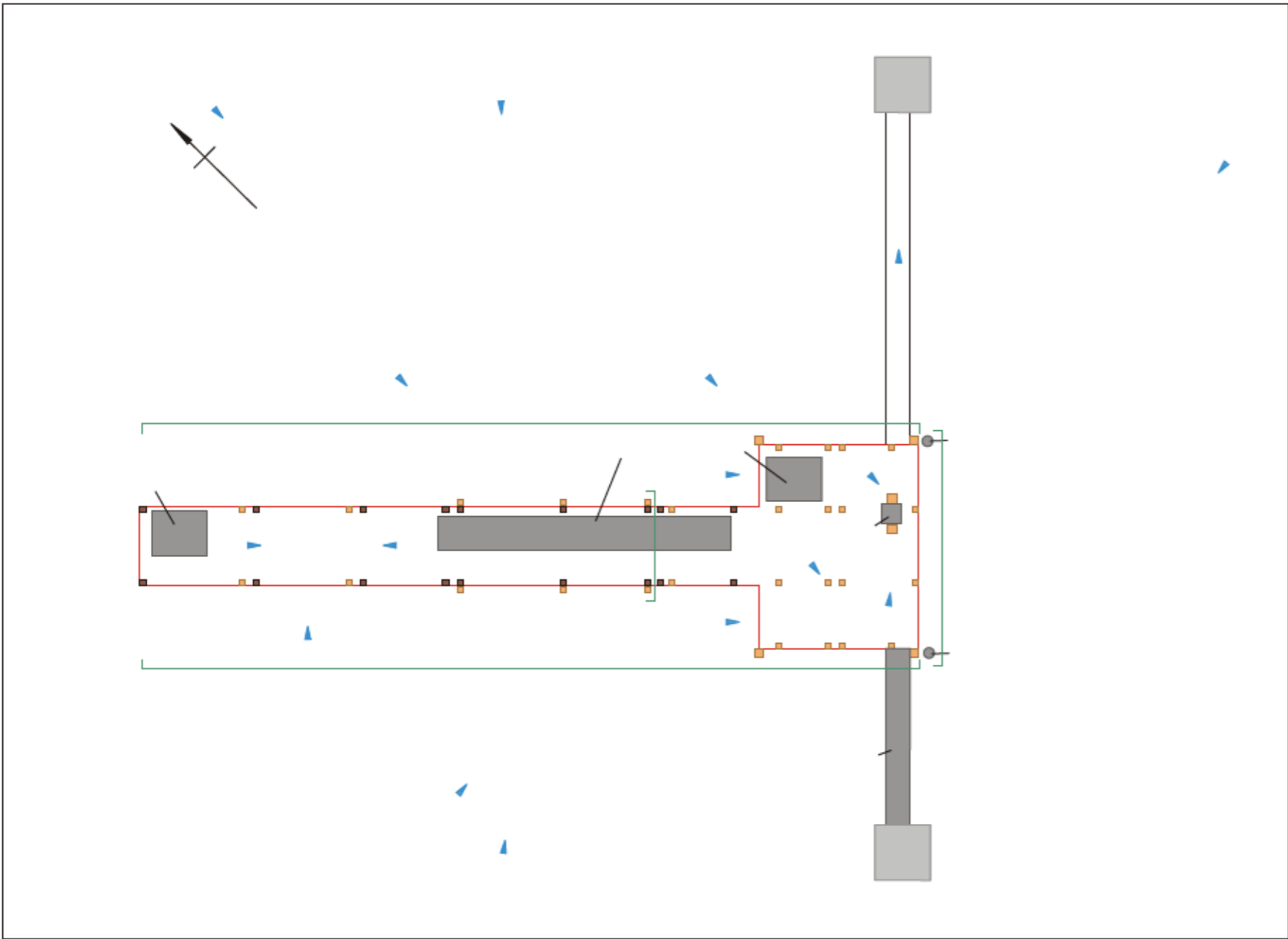




Plate 1: c 1901 photograph showing AAOC depot and jetty, looking south-west, reproduced courtesy of Suffolk Records Office (SRO 715/A3/2/15)



Plate 2: Detail of c 1901 photograph showing AAOC jetty, looking south-west, reproduced courtesy of Suffolk Records Office (SRO 715/A3/2/15)


	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.			
	Date:	19/08/2015	Revision Number:	0
	Scale:	N/A	Illustrator:	KMN
	Path:	X:\PROJECTS\110380\Graphics_Office\Rep figs\BuildRep\2015_08_12		



Plate 3: Detail of c 1901 photograph of the AAOC jetty, looking south-west, reproduced courtesy of Suffolk Records Office (SRO 715/A3/2/15)



Plate 4: Detail of c 1901 photograph AAOC depot, looking south-west, showing stack of wooden petroleum barrels, fuel storage tank and traction engine, reproduced courtesy of Suffolk Records Office (SRO 715/A3/2/15)


	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.			
	Date:	19/08/2015	Revision Number:	0
	Scale:	N/A	Illustrator:	KMN
	Path:	X:\PROJECTS\110380\Graphics_Office\Rep figs\BuildRep\2015_08_12		



Plate 5: General view of the Site and Lake Lothing, looking west



Plate 6: General view of the jetty and former Esso depot, looking west


	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.			
	Date:	19/08/2015	Revision Number:	0
	Scale:	N/A	Illustrator:	KMN
	Path:	X:\PROJECTS\110380\Graphics_Office\Rep figs\BuildRep\2015_08_12		



Plate 7: General view of the jetty, looking south



Plate 8: General view of the jetty, looking north-east


	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.			
	Date:	19/08/2015	Revision Number:	0
	Scale:	N/A	Illustrator:	KMN
	Path:	X:\PROJECTS\110380\Graphics_Office\Rep figs\BuildRep\2015_08_12		



Plate 9: North-east elevation of the jetty, looking south-west

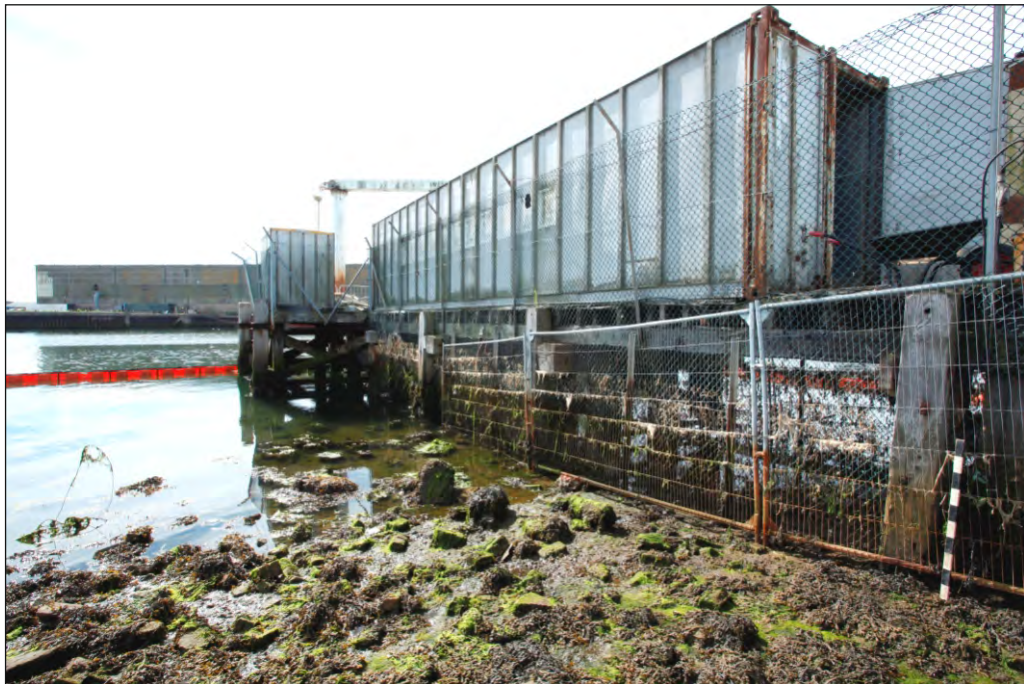


Plate 10: North-east elevation of the jetty, looking south


	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.			
	Date:	19/08/2015	Revision Number:	0
	Scale:	N/A	Illustrator:	KMN
	Path:	X:\PROJECTS\110380\Graphics_Office\Rep figs\BuildRep\2015_08_12		



Plate 11: Detail of south-eastern end of the jetty (north-east side), looking south



Plate 12: Detail of south-eastern end of the jetty (north-east side), looking south-east



	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.			
	Date:	19/08/2015	Revision Number:	0
	Scale:	N/A	Illustrator:	KMN
	Path:	X:\PROJECTS\110380\Graphics_Office\Rep figs\BuildRep\2015_08_12		



Plate 13: South-west elevation of the jetty showing recent replacement piles, looking north-east



Plate 14: South-east elevation of the jetty, looking east

	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.			
	Date:	19/08/2015	Revision Number:	0
	Scale:	N/A	Illustrator:	KMN
	Path:	X:\PROJECTS\110380\Graphics_Office\Rep figs\BuildRep\2015_08_12		

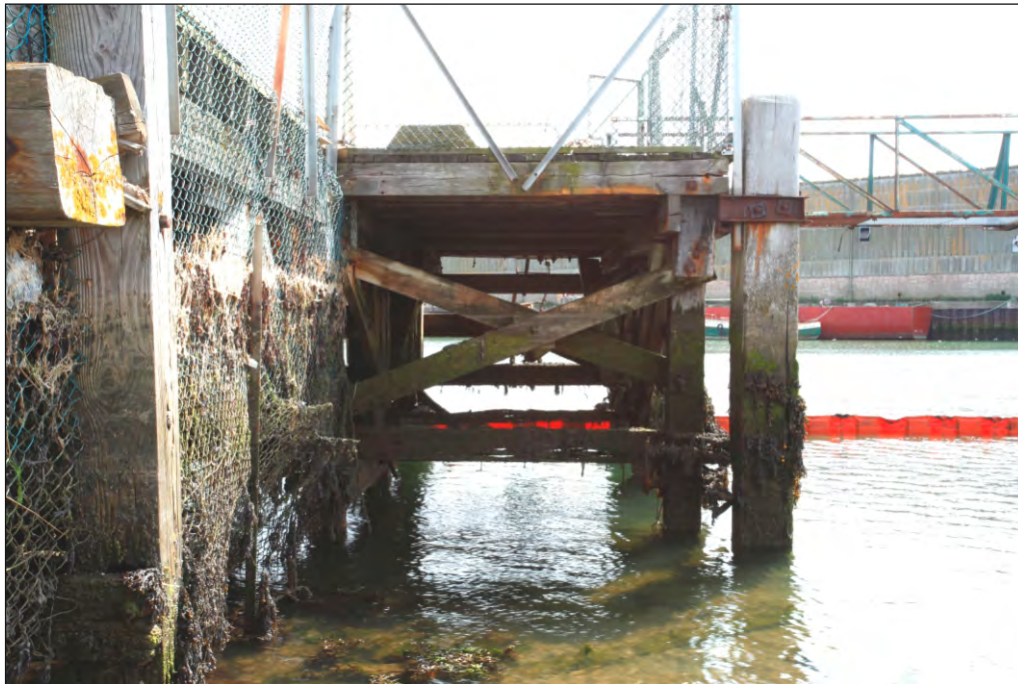


Plate 15: Detail of south-eastern end of the jetty (south-west side), looking south-east



Plate 16: Detail of north-eastern mooring dolphin, looking north-east


	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.			
	Date:	19/08/2015	Revision Number:	0
	Scale:	N/A	Illustrator:	KMN
	Path:	X:\PROJECTS\110380\Graphics_Office\Rep figs\BuildRep\2015_08_12		



Plate 17: Deck of jetty, looking south-east



Plate 18: Deck of jetty, looking north-west


	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.			
	Date:	19/08/2015	Revision Number:	0
	Scale:	N/A	Illustrator:	KMN
	Path:	X:\PROJECTS\110380\Graphics_Office\Rep figs\BuildRep\2015_08_12		



Plate 19: Deck of jetty, south-east end, looking north-east



Plate 20: Deck of jetty, south-east end, showing south-west mooring dolphin and steel walkway, looking south-west



	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.			
	Date:	19/08/2015	Revision Number:	0
	Scale:	N/A	Illustrator:	KMN
	Path:	X:\PROJECTS\110380\Graphics_Office\Rep figs\BuildRep\2015_08_12		



Plate 21: Detail of swing-jib crane on the south-east end of the jetty, looking south

	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.			
	Date:	19/08/2015	Revision Number:	0
	Scale:	N/A	Illustrator:	KMN
	Path:	X:\PROJECTS\110380\Graphics_Office\Rep figs\BuildRep\2015_08_12		



Wessex Archaeology Ltd registered office Portway House, Old Sarum Park, Salisbury, Wiltshire SP4 6EB
Tel: 01722 326867 Fax: 01722 337562 info@wessexarch.co.uk www.wessexarch.co.uk



Wessex Archaeology Ltd is a company limited by guarantee registered in England, company number 1712772. It is also a Charity registered in England and Wales, number 287786; and in Scotland, Scottish Charity number SC042630. Our registered office is at Portway House, Old Sarum Park, Salisbury, Wiltshire SP4 6EB.