

London Gateway

**Settlement, farming and industry
from prehistory to the present
in the Thames Estuary**

**Archaeological investigations at DP World London
Gateway Port and Logistics Park, Essex,
and on the Hoo Peninsula, Kent**

London Gateway

Settlement, farming and industry from prehistory to the present in the Thames Estuary

Archaeological investigations at DP World London Gateway Port and Logistics Park, Essex, and on the Hoo Peninsula, Kent

Edward Biddulph, Stuart Foreman, Christopher Hayden, Cynthia Poole,
Kirsty Smith and Elizabeth Stafford

with contributions to this volume and the digital specialist reports by

Matt Brudenell, Sharon Cook, John Cotter, Michael Donnelly, Kath Hunter Dowse,
David Dungworth, Mark Gibson, Damian M Goodburn, Lauren McIntyre, Julia Meen,
Rebecca Nicholson, Patrick Sean Quinn, Ian R Scott, Ruth Shaffrey and Lena Strid

Illustration and design by

Lucy Gane, Charles Rousseaux and Magdalena Wachnik

Oxford Archaeology Monograph No. 31

2021

The publication of this volume has been generously funded by DP World London Gateway

Published by Oxford Archaeology as part of the Oxford Archaeology Monograph series

Designed by Oxford Archaeology Graphics Office

Edited by Andrew Simmonds

© 2021 Oxford Archaeology Ltd

Figures 1.1, 1.2, 2.1, 2.2, 2.6, 2.8, 2.9, 2.12, 2.18, 3.1, 3.2, 3.9, 4.6, 5.6 and 5.16 reproduced from the Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright. 1996 All rights reserved. Licence No. AL 100005569

1996/11A-DMC. Figures 1.3, 1.4, 2.6, 2.8, 2.9, 2.12, 2.18, 3.2, 3.3, 3.6, 3.7, 3.9, 3.10, 3.22, 4.6, 5.6 and 5.16 are derived from digital data at 1:50,000 scale, provided under licence by the British Geological Survey. © NERC

Figures 1.3 and 1.4 are based on data provided through www.VisionofBritain.org.uk and use historical material which is copyright of the Great Britain Historical GIS Project and the University of Portsmouth

Front cover: Detail of 1617 map of Old Garlands and Feake's Hithe (ERO D/DU 112/1).

Reproduced by courtesy of the Essex Record Office.

Back cover: Aerial view of DP World London Gateway Port and Logistics Park © DP World

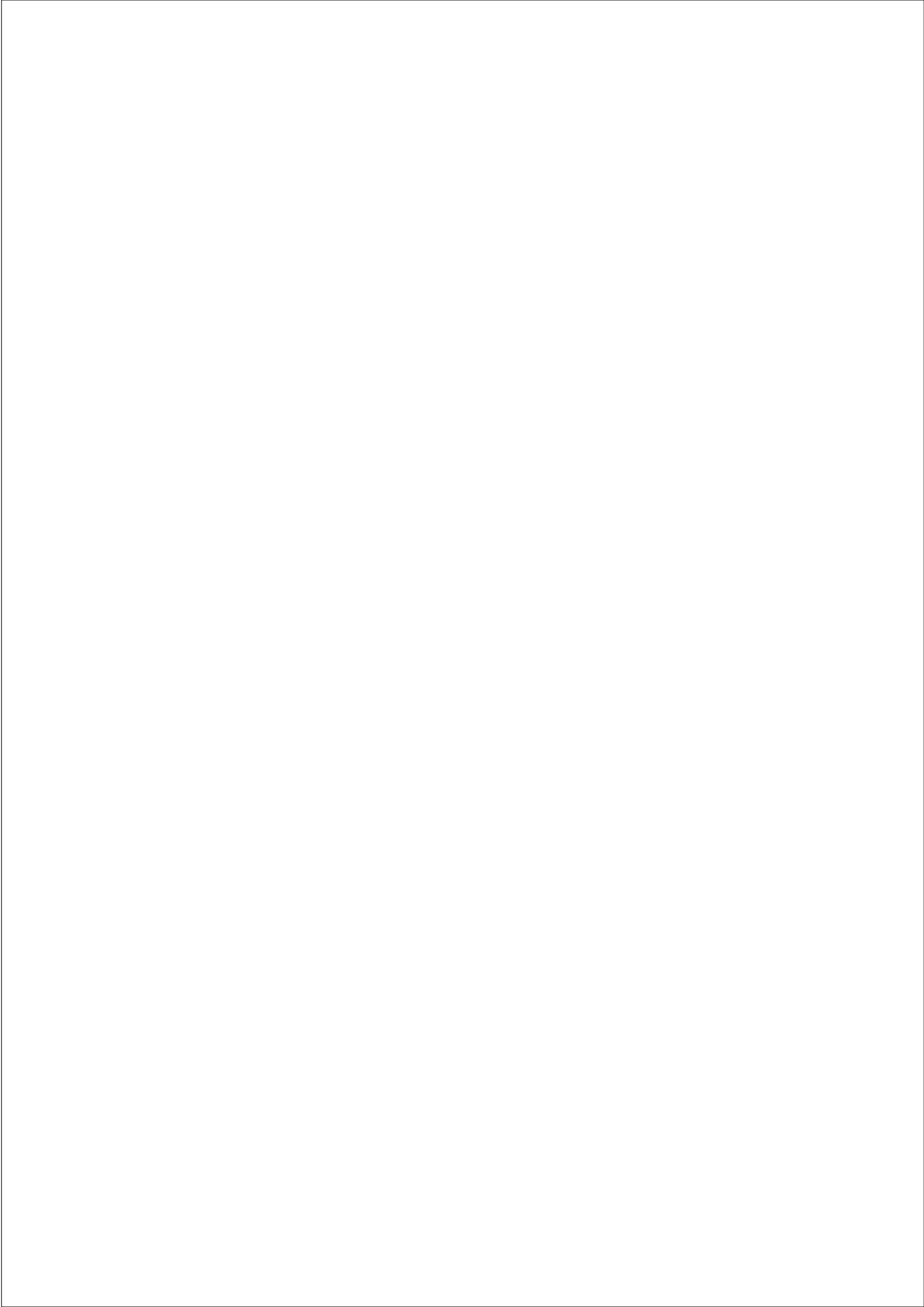
ISBN 978-0-904220-81-0

Typeset by Production Line, Oxford

Printed in Great Britain by Short Run Press, Exeter, England

The day was ending in a serenity of still and exquisite brilliance. The water shone pacifically; the sky, without a speck, was a benign immensity of unstained light; the very mist on the Essex marsh was like a gauzy and radiant fabric, hung from the wooded rises inland, and draping the low shores in diaphanous folds. Only the gloom to the west, brooding over the upper reaches, became more sombre every minute, as if angered by the approach of the sun.

Joseph Conrad, *Heart of Darkness* (1899)



Contents

List of figures	ix
List of tables	xiii
Contents of digital volume	xv
Summary	xvii
Foreword	xix
Acknowledgements	xxi
Chapter 1: Introduction	1
BACKGROUND TO THE INVESTIGATIONS	1
PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS	5
GEOLOGY AND TOPOGRAPHY	6
STRUCTURE OF THE VOLUME	8
THE ARCHIVE	9
Chapter 2: Investigative framework and methodologies	11
THE ARCHAEOLOGICAL MITIGATION FRAMEWORK	11
BUILDING KNOWLEDGE TO INFORM INVESTIGATIVE STRATEGIES	13
METHODS OF INVESTIGATION FOR PRINCIPAL MITIGATION	17
Chapter 3: The Mesolithic period to the Iron Age	29
INTRODUCTION	29
LANDSCAPE EVOLUTION DURING THE PREHISTORIC PERIOD	29
THE WIDER CONTEXT OF THE DP WORLD LONDON GATEWAY SITES	30
THE DP WORLD LONDON GATEWAY SITES	34
FINDS AND ENVIRONMENTAL EVIDENCE	51
MIDDLE AND LATE BRONZE AGE DISCUSSION	57
Chapter 4: The Roman period	69
SETTING THE SCENE	69
THE DP WORLD LONDON GATEWAY SITES	75
FINDS AND ENVIRONMENTAL EVIDENCE	83
DISCUSSION	85
Chapter 5: The medieval and post-medieval periods	89
SETTING THE SCENE	89
THE DP WORLD LONDON GATEWAY SITES	97
FINDS AND ENVIRONMENTAL EVIDENCE	112
DISCUSSION	116
The art of making common salt	118

A legal dispute between Robert Garlond and John Draypole	125
Sir John Hawkins and Old Garlands	126
Chapter 6: Making connections	137
Bibliography	143
Index	151

List of figures

CHAPTER 1

1.1	Site location	2
1.2	Principal investigations at DP World London Gateway	4
1.3	Solid geology of the Lower Thames	6
1.4	Superficial geology of the Lower Thames on a background of the 1805 Ordnance Survey map	7
1.5	Aerial view of the DP World London Gateway Port and Logistics Park © DP World London Gateway.....	8

CHAPTER 2

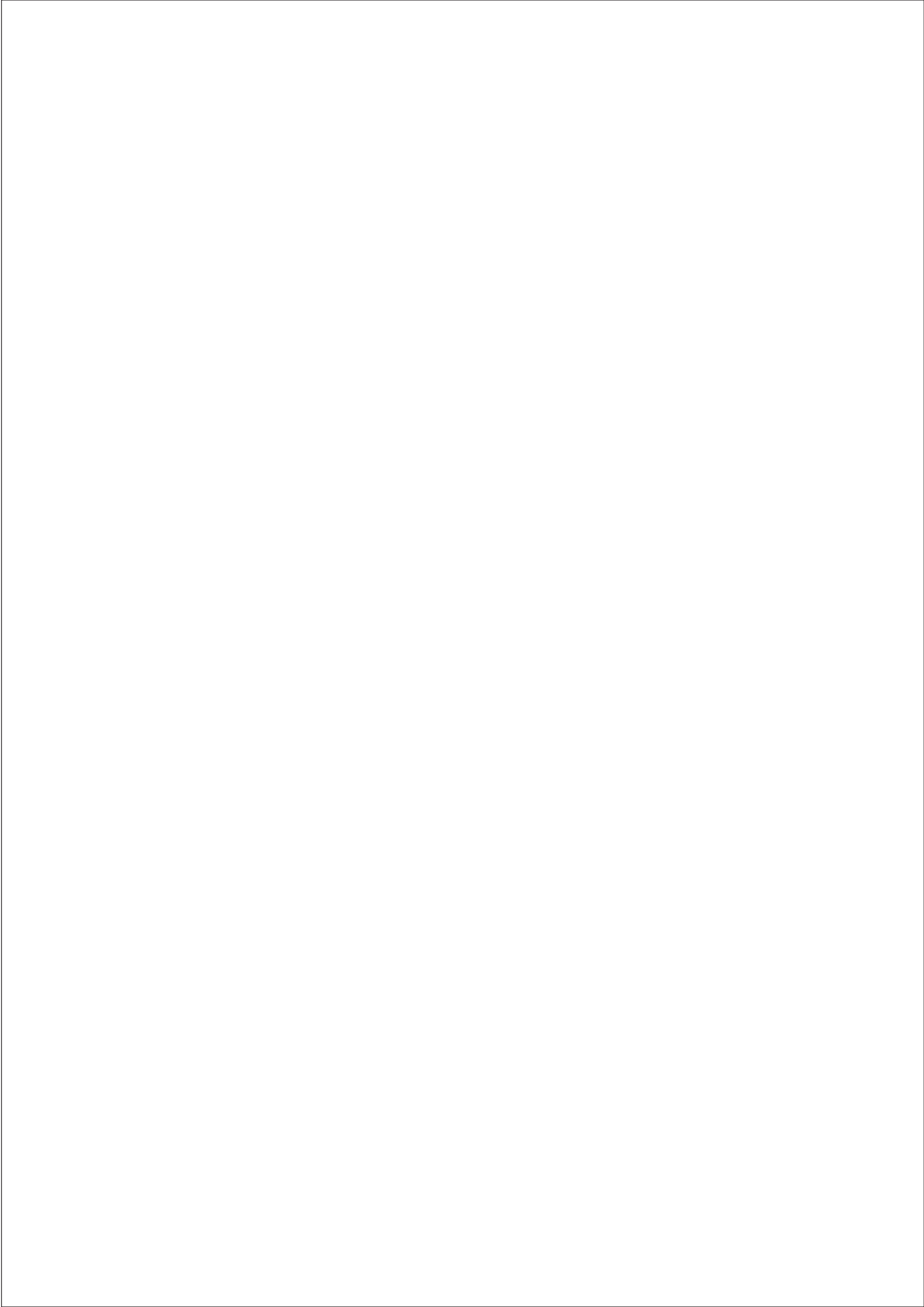
2.1	Overview of archaeological potential and likely levels of mitigation	12
2.2	Mapping the location of cultural heritage within the DP World London Gateway development area in 2003	14
2.3	Mapping the location of cultural heritage within Salt Fleet Flats on the Cooling Marshes.....	15
2.4	The shell-and-auger drill rig in operation.....	16
2.5	Deposit model: plot showing apparent pseudo-section and boreholes illustrating depth to base of Holocene alluvium	16
2.6	Trench location plan, Northern Triangle East	18
2.7	The modern sea wall constructed at Carter's Creek in the 20th century, adorned with graffiti.....	19
2.8	Areas of investigation, Rail Corridor	20
2.9	Areas of investigation, Access Road, Carter's Lagoon, A13/A1014 Junction Improvements, Logistics Park: Proposed Development at Great Garlands Farm and Pipeline Diversion, Logistics Park: Proposed Tongue Land HGV Lorry Park and Admin Building.....	21
2.10	Removing the topsoil across Area A on the Access Road	22
2.11	Separator pit under excavation, Welfare and Workshop Building drainage	23
2.12	Area of archaeological monitoring, Port Gate Complex	23
2.13	Monitoring deep drainage excavations at DP World London Gateway Port Gate Complex.....	24
2.14	Deep drainage excavations in progress at DP World London Gateway Port Gate Complex.....	25
2.15	An evaluation trench exposing alluvial deposits at Salt Fleet Flats, Cooling Marshes	25
2.16	Trench location plan, Salt Fleet Flats, Cooling Marshes	26
2.17	A trench exposing thick alluvial deposits during the evaluation at the Logistics Park Infrastructure site	27
2.18	Trench location plan, Logistics Park Infrastructure	27

CHAPTER 3

3.1	Location of prehistoric sites near to DP World London Gateway discussed in the text	31
3.2	Distribution of worked flint.....	35
3.3	Distribution of sites with middle and late Bronze Age activity	37
3.4	Plan of middle Bronze Age and undated features, Rail Corridor	39
3.5	Sections of selected middle Bronze Age features, Rail Corridor	40
3.6	Plan of middle and late Bronze Age features, Access Road and Pipeline Diversion, with nearby cropmarks	42
3.7	Plan of middle and late Bronze Age features, Access Road Areas G and H and Trench 31, Pipeline Diversion	43
3.8	Plan of middle and late Bronze Age features, Pipeline Diversion Site B	44
3.9	Plan of middle and late Bronze Age features, Access Road Areas B to G	45
3.10	Plan of middle and late Bronze Age features, Access Road Area A.....	46
3.11	Sections of selected middle and late Bronze Age field system ditches, Pipeline Diversion	47

3.12	Middle Bronze Age fired clay pedestal pit 1004, Access Road Area A	48
3.13	Plan of late Bronze Age Pit Group 3, Access Road Area A	49
3.14	Selected middle Bronze Age pottery. 1: middle Bronze Age rim with fingertip impressions from pit 141, Rail Corridor; 2: middle Bronze Age rim with fingertip impressions and 3: middle Bronze Age decorated jar, both from pit 1004, Access Road	51
3.15	Middle Bronze Age cylindrical (1 and 2) and conical (3) fired clay pedestals from pit 1004, Access Road.....	52
3.16	Late Bronze Age fired clay cup pedestals with splayed bases. 1–7 from ditch 2701; 8 from ditch 2710, Pipeline Diversion.....	53
3.17	Late Bronze Age fired clay cup pedestals with tapered bases (9–12) and with a spatulate end (13). 9–10 from pit 3221; 11–13 from pit 3201, Pipeline Diversion.....	54
3.18	Late Bronze Age briquetage vessels (15–17) and luting (14). 14 from ditch 3206, 15 from pit 3217 and 16 from ditch 2701, Pipeline Diversion, 17 from pit 1033, Access Road.....	55
3.19	Late Bronze Age perforated fired clay plates. 18 and 20 from pit 3201; 19 from ditch 3206, Pipeline Diversion	56
3.20	Late Bronze Age fired clay pedestal which probably formed part of an oven (21) and probably from a briquetage vessel (22). 21 from pit 1012; 22 from pit 10032	56
3.21	Summary of mean sherd weight and mean weight of fragments of fired clay and briquetage from middle and late Bronze Age features.....	61
3.22	Distribution of briquetage, fired clay and the charred flax seed deposit, Access Road and Pipeline Diversion	63
 CHAPTER 4		
4.1	Reconstruction of the early Roman saltworks and boathouse at Stanford Wharf Nature Reserve as viewed from the Thames estuary	69
4.2	Phase plan of activity at Stanford Wharf Nature Reserve	70
4.3	Location of Roman finds and sites, as recorded in baseline data, across the DP World London Gateway development.....	71
4.4	Plan of Roman Mucking (after Lucy and Evans 2016, fig. 1.7)	72
4.5	Selected Roman sites in the vicinity of DP World London Gateway	73
4.6	Roman features, Pipeline Diversion.....	74
4.7	Plan of Trench 25, Pipeline Diversion.....	76
4.8	Plan of Roman features at Site A, Trench 26, Pipeline Diversion.....	77
4.9	North–east–facing section through pits 2649 and 2651 and ditch 2667, Pipeline Diversion	77
4.10	Sections through salt–processing hearth, Trench 26, Pipeline Diversion	78
4.11	South–west edge of structure 2630/2631, with imprints of robbed tiles visible in the underlying bedding layer, Trench 26, Pipeline Diversion	78
4.12	Tiles set along the edge of structure 2630/2631 to form a kerb, Trench 26, Pipeline Diversion	79
4.13	Charcoal–rich layer 2639 within a hollow in pit 2640, Trench 26, Pipeline Diversion.....	80
4.14	Cluster of putative Roman cremation burials, Site A, Pipeline Diversion	81
4.15	Plan of Roman feature in Site B, Trench 32, Pipeline Diversion.....	82
4.16	Roman pottery from DP World London Gateway.....	83
4.17	Roman ceramic building material from Site A, Pipeline Diversion	84
4.18	Tile–built hearth within saltern 6090 (looking west, scale 1m), Stanford Wharf Nature Reserve	85
4.19	Route of possible Roman road from Little Burstead to DP World London Gateway, as identified by Rippon <i>et al.</i> (2015, 154). Inset: detail showing Rainbow Lane and High Road, Stanford-le-Hope (mapping reproduced courtesy of Groundsure)	87
 CHAPTER 5		
5.1	Fragment from a Beauvais sgraffito ware dish, Stanford Wharf Nature Reserve	92
5.2	Cabborns Manor, as sketched by Donald Maxwell in 1925	92
5.3	Archaeological features at Great Garlands Farm (after Peachey and Dale 2005, fig. 4).....	93
5.4	Tithe map of 1839 showing Great Garlands Farm and Pease (reproduced courtesy of Essex Record Office)	94
5.5	Map of the Old Garlands estate and Feake’s Hithe, 1617 (reproduced courtesy of Essex Record Office)	95
5.6	Access Road showing locations of medieval and post–medieval archaeological features and contemporaneous features in Trench 29, Pipeline Diversion	96
5.7	Plan of medieval and post–medieval features, Access Road Area A	97

5.8	Plan of medieval and post-medieval features, Access Road Area H	98
5.9	Salt Fleet Flats, Site 1, overlaid on 1961 aerial photograph (reproduced courtesy of Kent County Council)	99
5.10	Reddish silty clay deposits in Trench 30, Salt Fleet Flats, Site 1	100
5.11	Calf burial, pit 8018, Access Road, Area H	100
5.12	Timber wharf and association woodwork, Trench 4, Proposed Development at Great Garlands Farm	101
5.13	Timber structures 406, 412 and 414, Trench 4, Proposed Development at Great Garlands Farm, looking west	102
5.14	Section through timber wharf 412, Trench 4, Proposed Development at Great Garlands Farm	102
5.15	Topographic survey of sea walls within the Access Road	103
5.16	The Northern Triangle East site, showing 'stetch' cultivation	104
5.17	View of 'stetch' cultivation, Northern Triangle East, looking east	105
5.18	Salt Fleet Flats, Site 2, overlaid on 1961 aerial photograph (reproduced courtesy of Kent County Council)	106
5.19	Salt Fleet Flats, Site 3, overlaid on 1961 aerial photograph (reproduced courtesy of Kent County Council)	107
5.20	Brick rubble surface 1809, Salt Fleet Flats.....	108
5.21	Eighteenth-century sheep-dip 1611 cut by 19th-century brick and concrete sheepfold 1602, Salt Fleet Flats	109
5.22	Salt Fleet Flats, Trench 22 across pond and overlaid on 1961 aerial photograph (reproduced courtesy of Kent County Council)	110
5.23	Salt Fleet Flats, Site 4, overlaid on 1961 aerial photograph (reproduced courtesy of Kent County Council)	111
5.24	Recording the remains of a timber structure preserved in the foreshore, looking south	112
5.25	A selection of medieval and post-medieval pottery from DP World London Gateway	113
5.26	Reconstruction of Feake's Hithe wharf, Proposed Development at Great Garlands Farm	115
5.27	Chapman and Andre's map of Essex, dated 1771 showing Corringham and the surrounding area (Fox Hive, formerly Feake's Hithe, highlighted)	120
5.28	Detail of the 1617 map of Feake's Hithe with archaeological features superimposed (reproduced courtesy of Essex Record Office)	121
5.29	Map of the Old Garlands estate, mid-17th century (reproduced courtesy of Essex Record Office)	123
5.30	The remains of a 17th-century sea wall, looking north	128
5.31	Timbers from a sea barrier of post-medieval date from Stanford Wharf Nature Reserve	128
5.32	Salt Fleet Flats: Mudge's map of the Cooling Marshes, 1801 (reproduced courtesy of Kent History and Library Centre)	129
5.33	The area of Great Garlands/Feake's Hithe, as shown on the 1617 estate map and 1863 Ordnance Survey map and modern aerial photograph, showing continuity of field patterns (1617 map reproduced courtesy of Essex Record Office)	131
5.34	A scene from <i>Quatermass 2</i> (dir. Val Guest, 1957), showing Professor Quatermass (Brian Donlevy) hiding among the tanks and pipes of Shell Haven oil refinery © Hammer Films	134
	Portrait of <i>Sir John Hawkins</i> (1532–1595) (BHC2755 © National Maritime Museum, Greenwich, UK)	126
 CHAPTER 6		
6.1	An archaeological evaluation trench, with the oil refinery in the background	137
6.2	Sheep have been grazing on the Cooling Marshes at least since the medieval period	141
6.3	View of Mucking Creek, looking south towards the River Thames	142



List of tables

CHAPTER 1

- 1.1 List of sites within the DP World London Gateway development and type of mitigation applied..... 3
- 1.2 Principal sites investigated at DP World London Gateway 5

CHAPTER 3

- 3.1 Summary of fired clay and briquetage from later Bronze Age contexts on the Access Road and Pipeline Diversion 54-5

CHAPTER 5

- 5.1 Saxon manors in the vicinity of DP World London Gateway as noted in Domesday Book (Powell-Smith, nd) 90-91
- 5.2 Radiocarbon determinations 103

Contents of digital volume

Address: <https://eprints.oxfordarchaeology.com/5778/>

Specialist reports:

1. Prehistoric pottery *by Matt Brudenell*
2. Roman pottery *by Edward Biddulph*
3. Medieval and later pottery *by John Cotter, with a contribution by Patrick Sean Quinn*
4. Ceramic building material *by Cynthia Poole*
5. Fired clay *by Cynthia Poole*
6. Flint *by Michael Donnelly*
7. Worked stone *by Ruth Shaffrey*
8. Glass *by Ian R Scott*
9. Metal objects *by Ian R Scott*
10. Metalworking debris *by David Dungworth*
11. Woodwork *by Damian M Goodburn*
12. Human remains *by Lauren McIntyre*
13. Burnt bone *by Mark Gibson*
14. Animal bones *by Lena Strid*
15. Marine shell and fish remains *by Rebecca Nicholson*
16. Charred plant remains and charcoal *by Julia Meen, Sharon Cook and Kath Hunter Dowse*

Client reports:

A13/A1014 Junction Improvements (CSJUNC13)
Access Road (COARM12/COARD12)
Carter's Lagoon (COOR12)
CECL Pipeline Diversion (COLP15)
Deposit Model (Bates *et al.* 2012)
Geotechnical Investigation (CORSH08)
Great Garlands Lorry Park (COLP15)
Intertidal Survey (COMUD09)
Logistics Park Infrastructure (COOR12/COOR14)
Northern Triangle (CONTE08)
Port Gate Complex (COOR12)
Rail Corridor: Broadhope (COMWR12)
Rail Corridor: Mucking Creek (COMWR12)
Shellhaven Creek Crossing (COOR12)
Site X, Cooling Marshes (CSCOX13)
Tongue Land Lorry Park (CSTONG16)
Welfare and Workshop Building (COOR12)