



**Nogdam End  
Compartment 22  
Broadland Flood Alleviation Project**

**Monitoring of Works under Archaeological  
Supervision and Control**

**ENF 136420**

**Heather Wallis  
November 2017**

**HW Report No. 206**



<b>Project name</b>	<b>Nogdam End, Compartment 22</b>
<b>Parishes</b>	<b>Norton Subcourse</b>
<b>Event No.</b>	<b>ENF 136420</b>
<b>Grid Refs</b>	<b>TG 4013 0105</b>
<b>Date of Work</b>	<b>10th August 2012</b>

## **Summary**

*During dyke widening works, undertaken as part of the Broadland Flood Defence Project, some waterlogged wood remains were revealed near to Nogdam End on the River Chet. Recorded over a 5m length these remains have been interpreted as hurdles which formed part of a fish trap. One sample of wood was radiocarbon dated, returning a Middle Saxon date. This is one of three similar fish traps which have been recorded in this area in recent years.*

## **Introduction**

Planning permission was granted to Halcrow Group Ltd, for flood alleviation work along the right bank of the River Chet at Nogdam End (Fig. 1). This development formed part of the Broadland Flood Alleviation Project, a major project which has renewed and strengthen banks and dykes along the rivers Bure, Ant, Thurne, Yare, Chet and Waveney. A condition of the permission required that an archaeological watching brief was carried out during the construction works. Initial archaeological monitoring was undertaken by NPS Archaeology in 2004/5. In 2012 further small scale works were undertaken. These additional works were monitored by Heather Wallis and are the subject of this report.

## **The Works**

The 2004/5 works, monitored by NPS Archaeology, took the form of the excavation of a new soke dyke up to 14m wide and 2m deep, and the creation of a new floodbank. In 2012 it was determined that the new flood bank should be further strengthened. In order to obtain material to carry this out the soke dyke created in 2004/5 was widened by c.2m on the riverside, and the risings used to enhance the bank.

## **Geology**

The bedrock geology of eastern Norfolk consists of Crag Group sand and gravel. This sedimentary material is made up of shallow water marine and

estuarine sands, gravels, silts and clays deposited up to 5 million years ago. The superficial geology is Breydon Formation peat, silts and clays. The peat can be of freshwater or brackish origin and forms inconsistent layers interspersed with silts and clays and is the dominant element along the Chet valley. (<http://mapapps.bgs.ac.uk/geologyofbritain/home.html>)

## Summary Archaeological Background

The works lay in Norton Subcourse parish, the River Chet forming the parish boundary between Norton Subcourse and Heckingham.

The parish of Heckingham was extensively fieldwalked between 1980 and 1985 (Davison 1990) so the number of recorded sites and artefacts in this area is notably higher than in the parish of Norton Subcourse. It is likely that a similar pattern of activity would have existed in Norton Subcourse. Within the surveyed area finds of Neolithic flints were few. There were no sites dating to the Bronze Age or Iron Age and only one possible Romano-British settlement was identified. During the Early and Middle Saxon periods the evidence for settlement increased with some areas of concentrated activity, although this was limited to the high ground away from the rivers and the flanking marshland. This pattern continued into the Late Saxon and medieval periods when activity became more widespread, particularly during medieval times.

Fewer sites were recorded for the later medieval and post-medieval periods as settlement became focused in villages and hamlets, most of which survive today. It was also during the post-medieval period that reclamation of the marshes was undertaken with the construction of windpumps along the river systems within the Broadland area.

## Watching Brief Methods

A single monitoring visit was made to the site soon after works had commenced, as site workers had noted pieces of wood in the base of the excavation. All monitoring was undertaken from the top edge of the dyke as Health and Safety concerns prohibited access into the newly excavated area.

Work was carried out in full accordance with national and regional guidelines for the treatment of archaeological remains, and in particular the guidance set out in *Standards for Field Archaeology in the East of England* (Gurney 2003) and the Institute of Field Archaeologists *Standard and Guidance for an Archaeological Watching Brief* (2010).

## Results of the Monitoring Works

One small area of wet wood was noted during the widening of the dyke (Grid Ref. TG 4013 0105 Chainage 5630) (Plate 1).



Plate 1. Waterlogged wood in base of excavation with Norton Marsh Drainage Mill in background.

Several upright sails c.0.05m diameter, a length of woven rods and three larger poles were seen in the base of the new dyke (Plate 2). The woven rods were observed for a c.2m length of (Plate 3) and to the east of this ten sails were noted over a c.3m length. Together the rods and sails would have formed a woven hurdle/s which was recorded over a total length of 5m. The three poles were each c.0.10m in diameter and probably formed a supporting frame for the hurdle.

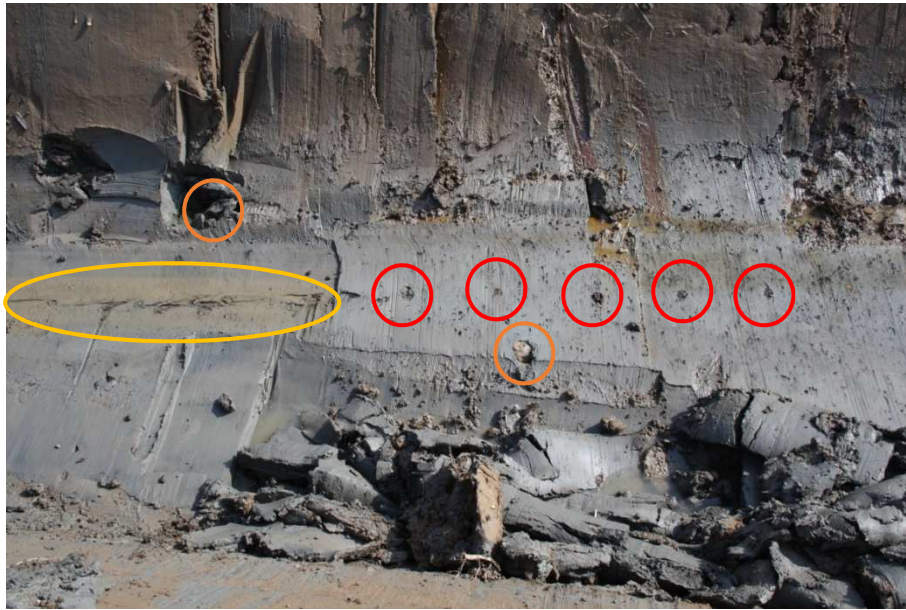


Plate 2. Showing detail of some of the woven rods (yellow), sails (red) and poles (orange).



Plate 3. Showing woven rods.

As access into the new excavation was prohibited due to Health and Safety concerns, fragments of the waterlogged wood were retrieved from the soils excavated by the machine under archaeological supervision. Samples of seven pieces of wood were submitted to Steve Allen at York Archaeological Trust for

species identification and comment (Allen 2017), a further sample was sent to Beta Analytic for radiocarbon dating (Appendix 1).

The date returned for the wood was

Cal AD 650 to 715 and Cal AD 745 to 765 (95% probability)

All of the seven samples were identifiable to species; three were hazel, three willow and one ash (Appendix 2). Of those with a full ring count the pieces were cut following, between three and seven years growth. Six of the seven pieces were early spring felled with the remaining piece being winter felled.

Altogether these waterlogged wooden remains have been interpreted as part of a fish trap. The revealed hurdle would have formed one side of a V-shaped fish trap, the other side of which was either destroyed during the excavation of the initial dyke in 2004/5 or could lay to the south of the works, in which case it remains within the marsh silts, undisturbed and *in situ*.

## Conclusion

This is one of three fish traps found in this area during the Broadland Flood Alleviation Project, all have been radiocarbon dated to the Middle Saxon period. The others lay c.500m south-west (Compartment 22 ENF 131593, Wallis in prep. a) and c.1km north-east on the opposite side of the River Yare (Compartment 12 HER 52921, Wallis in prep. b).

The distribution of known Middle Saxon sites in this area, as recorded on the Historic Environment Record, was limited to the higher ground away from the rivers. The discovery of sites such as this in a more marginal location, illustrate and confirm that many natural resources were exploited during this period. This included the woodland resource for construction materials as well as the fish stocks within the river as a food source.

The presence of three similar sites in reasonably close proximity to each other illustrate how the tidal reaches of the rivers were exploited during the Middle Saxon period. It can be predicted that many more such sites probably lay concealed within the riverine silts.

## Bibliography

- Allen, S.J., 2017 *Species Identifications of Wood Samples from Compartment 22 Nogdam*. York Archaeological Trust Conservation Laboratory Report No. 2017/44.
- Davison, A., 1990 *The Evolution of Settlement in Three Parishes in South-East Norfolk*, East Anglian Archaeology 49.
- Halcrow Group Ltd, 2013, *Broadland Flood Alleviation Project Compartment 22, Pyes Mill to Nogdam End. Environmental Statement*.
- Wallis, H., in prep. a, *Pye's Mill, Loddon to Nogdam End, Compartment 22 Broadland Flood Alleviation Project. Monitoring of Works under Archaeological Supervision and Control*. HW Report No. 219.
- Wallis, H., in prep. b, *Limpenhoe Marshes, Compartment 12 Broadland Flood Alleviation Project. Monitoring of Works under Archaeological Supervision and Control*. HW Report No. 220.

## Acknowledgements

My thanks go to all those involved with the project at Halcrow and BamNuttall who were helpful and vigilant throughout the works. The waterlogged wood was reported on by Steve Allen (York Archaeological Trust) and radiocarbon dating was carried out by Beta Analytic (Miami, USA).

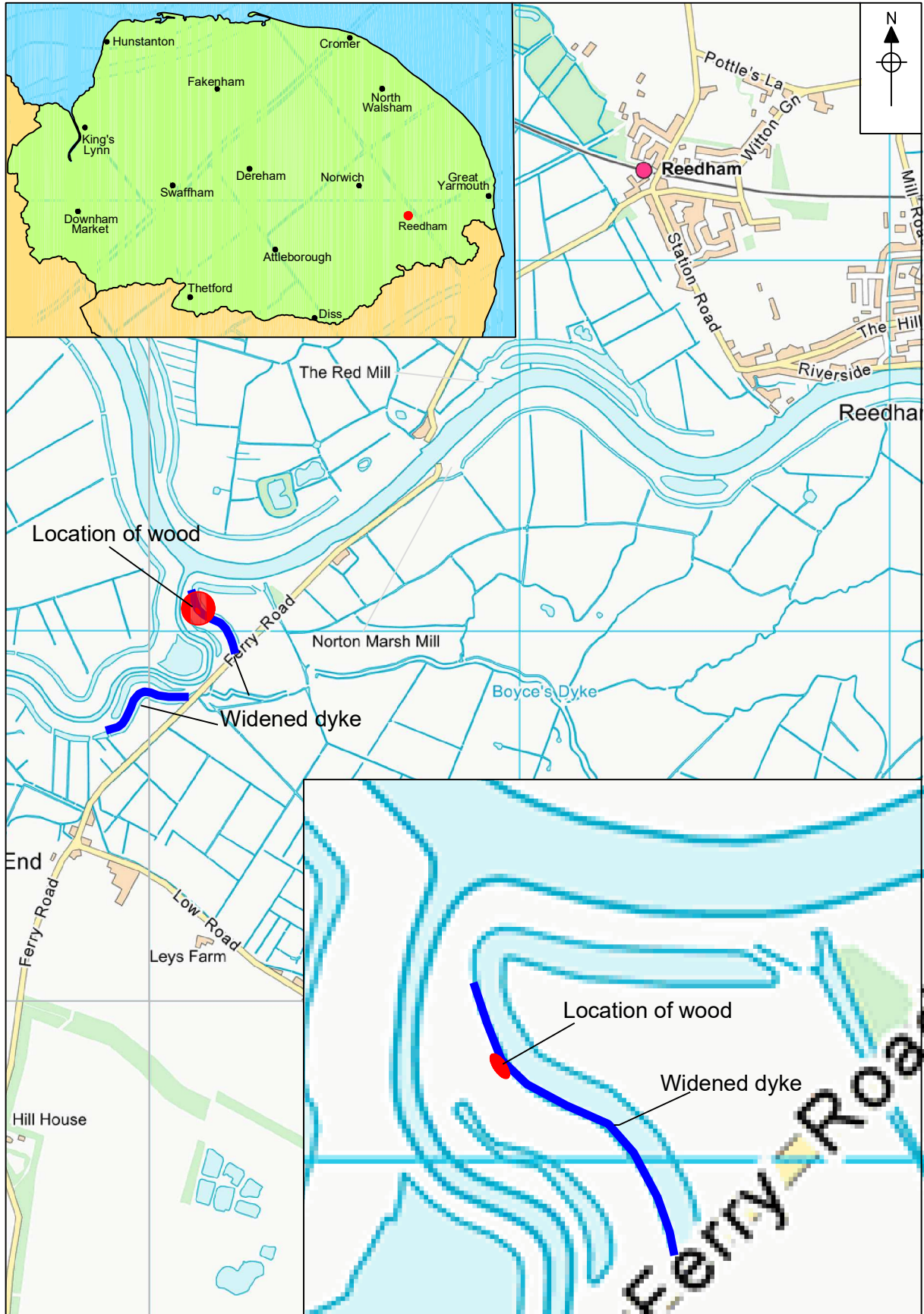


Figure 1. Site Location.



## Appendix 1

### Radiocarbon Dating



**Beta Analytic Inc.**  
DR. M.A. TAMERS and MR. D.G. HOOD

4985 S.W. 74 COURT  
MIAMI, FLORIDA, USA 33155  
PH: 305-667-5167 FAX: 305-663-0964  
beta@radiocarbon.com

#### REPORT OF RADIOCARBON DATING ANALYSES

Ms. Heather Wallis

Report Date: 12/14/2016

Material Received: 11/28/2016

Sample Data	Measured Radiocarbon Age	Isotopes Results o/oo	Conventional Radiocarbon Age
Beta - 451567 SAMPLE: 136420/8 ANALYSIS: AMS-Standard delivery MATERIAL/PRETREATMENT: (wood): acid/alkali/acid 2 SIGMA CALIBRATION : Cal AD 650 to 715 (Cal BP 1300 to 1235) and Cal AD 745 to 765 (Cal BP 1205 to 1185) Cal AD 745 to 765 (Cal BP 1205 to 1185)	1370 +/- 30 BP	d13C= -27.4	1330 +/- 30 BP

Results are ISO/IEC-17025:2005 accredited. No sub-contracting or student labor was used in the analyses. All work was done at Beta in 4 in-house NEC accelerator mass spectrometers and 4 Thermo IRMSs. The "Conventional Radiocarbon Age" is corrected for isotopic fraction and was used for calendar calibration where applicable. The Age was calculated using the Libby half-life (5568 years), is rounded to the nearest 10 years and is reported as radiocarbon years before present (BP), "present" = AD 1950. Results greater than the modern reference are reported as percent modern carbon (pMC). The modern reference standard was 95% the 14C signature of NIST SRM-4990C (oxalic acid). Quoted error is 1 sigma of counting error on the combined measurements of sample, background and modern reference. Calculated sigmas less than 30 years are conservatively rounded up to 30. d13C values are on the material itself (not the AMS d13C) and are reported in per mil relative to VPDB-1. Applicable calendar calibrated results were calculated using INTCAL13, MARINE13 or SHCAL13 as appropriate (see calibration graph report for references). Applicable d15N values are relative to VPDB-1 and applicable d18O and dD values are relative to VSMOW. Applicable water results are reported without correction for isotopic fractionation.

## CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -27.4 ‰ : lab. mult = 1)

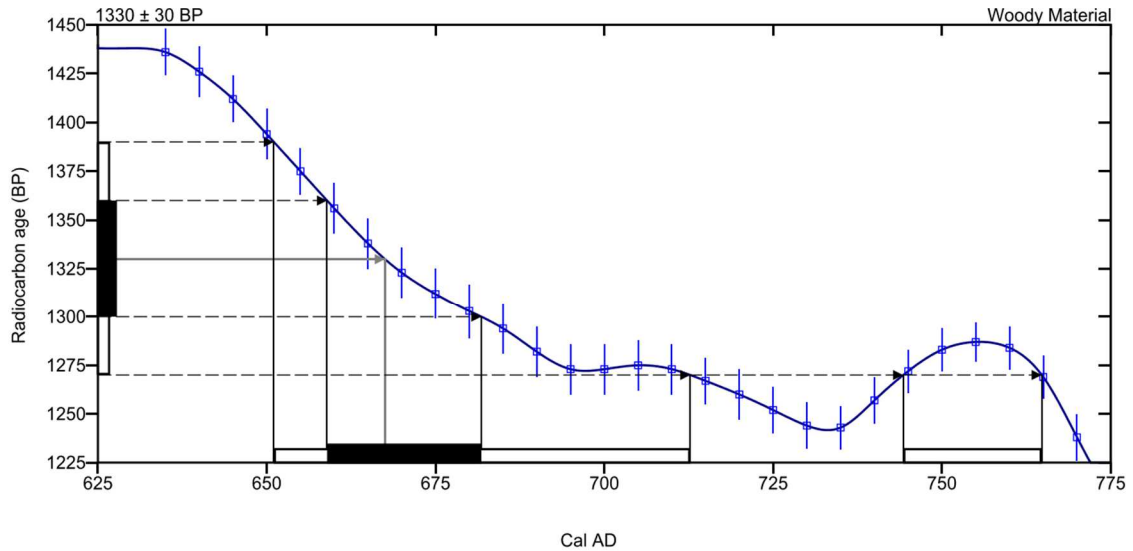
Laboratory number    Beta-451567 : 136420/8

Conventional radiocarbon age    1330 ± 30 BP

Calibrated Result (95% Probability)    Cal AD 650 to 715 (Cal BP 1300 to 1235)  
Cal AD 745 to 765 (Cal BP 1205 to 1185)

Intercept of radiocarbon age with calibration curve    Cal AD 670 (Cal BP 1280)

Calibrated Result (68% Probability)    Cal AD 660 to 680 (Cal BP 1290 to 1270)



Database used  
INTCAL13

### References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. Radiocarbon 55(4):1869–1887., 2013.

### Beta Analytic Radiocarbon Dating Laboratory

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com

## Appendix 2

### Species Identifications of wood

Steve Allen

Sample No.	Description	Species Id.
(01)	Section of roundwood, bark present. 7 annual rings, early spring felled.	<i>Corylus avellana L.</i>
(02)	Section of roundwood, bark present. 3 annual rings, early spring felled.	<i>Salix spp.</i>
(03)	Section of roundwood, bark present. 5 annual rings, early spring felled.	<i>Salix spp.</i>
(04)	Section of halved roundwood, no bark present. Incomplete ring sequence, spring felled.	<i>Fraxinus excelsior L.</i>
(05)	Section of roundwood, bark present. 5 annual rings, early spring felled.	<i>Corylus avellana L.</i>
(06)	Section of roundwood, bark present. 5 annual rings, early spring felled.	<i>Corylus avellana L.</i>
(07)	Section of roundwood, bark present. 4 annual rings, winter felled.	<i>Salix spp.</i>

Botanical identification	Common English name
<i>Corylus avellana L.</i>	Hazel
<i>Fraxinus excelsior L.</i>	Ash
<i>Salix spp.</i>	Willows, exact species not determinable

# OASIS DATA COLLECTION FORM: England

[List of Projects](#) | [Manage Projects](#) | [Search Projects](#) | [New project](#) | [Change your details](#) | [HER coverage](#) | [Change country](#) | [Log out](#)

## Printable version

**OASIS ID: heatherw1-271873**

### Project details

Project name	Compartment 22 Nodgam End
Short description of the project	During dyke widening works, undertaken as part of the Broadland Flood Defence Project, some waterlogged wood remains were revealed near to Nogdam End on the River Chet. Recorded over a 5m length these remains have been interpreted as hurdles which formed part of a fish trap. One sample of wood was radiocarbon dated, returning a Middle Saxon date. This is one of three similar fish traps which have been recorded in this area in recent years.
Project dates	Start: 15-08-2016 End: 15-08-2016
Previous/future work	Yes / No
Any associated project reference codes	ENF 136520 - HER event no.
Type of project	Recording project
Monument type	FISHTRAP Early Medieval
Significant Finds	NONE None
Investigation type	""Watching Brief""
Prompt	Planning condition

### Project location

Country	England
Site location	NORFOLK SOUTH NORFOLK NORTON SUBCOURSE C22 Nogdam End
Study area	0.1 Kilometres
Site coordinates	TG 4013 0105 52.553664716525 1.542667668855 52 33 13 N 001 32 33 E Point

### Project creators

Name of Organisation	Heather Wallis
Project brief originator	Local Authority Archaeologist and/or Planning Authority/advisory body
Project design originator	Heather Wallis
Project director/manager	Heather Wallis
Project supervisor	None

## Project archives

Physical Archive Exists?	No
Digital Archive recipient	Norfolk Museums Service
Digital Contents	"Stratigraphic"
Digital Media available	"Images raster / digital photography", "Text"
Paper Archive recipient	Norfolk Museums Service
Paper Contents	"Stratigraphic"
Paper Media available	"Notebook - Excavation', ' Research', ' General Notes', 'Report"

## Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Nogdam End. Compartment 22 Broadland Flood Alleviation Project. Monitoring of Works under Archaeological Supervision and Control.
Author(s)/Editor(s)	Wallis, H.
Other bibliographic details	HW Report No. 206
Date	2017
Issuer or publisher	H Wallis
Place of issue or publication	Norwich
Entered by	Heather Wallis (archaeology@hwallis.co.uk)
Entered on	8 November 2017

# OASIS:

Please e-mail [Historic England](#) for OASIS help and advice

© ADS 1996-2012 Created by [Jo Gilham](#) and [Jen Mitcham](#), email Last modified Wednesday 9 May 2012

Cite only: <http://www.oasis.ac.uk/form/print.cfm> for this page