1901

NEW 400KV GIS SUBSTATION

TILBURY POWER STATION

TILBURY

ESSEX

ARCHAEOLOGICAL EVALUATION AND MONITORING

INTERIM REPORT

Essex County Council
Field Archaeology Unit
June 2008

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INTERIM REPORT

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	Essex Historic Environment Record

As part of our desire to provide a quality service, we would welcome any comments you may have on the content or the presentation of this report.
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SUMMARY

Client: South-East Electricity Substation Alliance (SEESA)
Planning application: THU/1130/07TTGFUL
FAU Project No.: 1901
NGR: TQ 654 762
Site Code: THSS08
OASIS ID: essexcou1-43106
Date of Fieldwork: 21-22 May 2008

An archaeological evaluation was undertaken at Tilbury Power Station, Tilbury by the Essex CC Field Archaeology Unit on behalf of the South-East Electricity Substation Alliance (SEESA), as a condition on planning consent to build a 400kV Gas Insulated Switchgear (GIS) substation. The work was carried out to investigate any archaeological remains related to the post-medieval Wick House to the south-east and any other deposits related to the exploitation of the marsh, especially Roman salt extraction.

Two evaluation trenches were excavated by machine within the footprint of the proposed substation down to the top of the waterlogged alluvial marsh deposits at a depth of 0.7-0.8m. Both trenches revealed a clean orange/brown and grey alluvium, 0.1-0.2m thick, at the top of the marsh deposit, sealed by a brown silt-clay subsoil and modern topsoil. All these horizons were naturally formed and suggest a gradual drying out of the surface of the marsh, although the modern water table is still very high. No archaeological remains were present in either trench, apart from two concrete anchor blocks of modern date at the northern end of Trench 1.

Ground reduction for construction of the sub-station, to a depth of 0.7m, is extremely unlikely to have an impact on any archaeological deposits.

1.0 INTRODUCTION

An archaeological evaluation by trial trenching was carried out at Tilbury Power Station as a condition on planning consent to build a new 400kV Gas Insulated Switchgear (GIS) substation. The evaluation was carried out by the Essex County Council Field Archaeology Unit (ECC FAU) on behalf of the applicant, the South-East Electricity Substation Alliance (SEESA), in response to a brief prepared by the Essex County Council Historic Environment Management team (ECC HEM 2008) and the Written Scheme of Investigation written by the ECC HEM (2008).

The trial trenching evaluation will be supplemented by archaeological monitoring of groundworks for a generator station and a drainage swale, and a final report will be issued when this work has been completed..

Interim copies of this report have been supplied to SEESA, including copies for Thurrock District Council Planning Department, Essex CC HEM, and the Essex Historic Environment Record. A digital copy of this report has been uploaded onto the Online Access to Index of Archaeological Investigations (OASIS) (http://ads.ahds.ac.uk/project/oasis). The archive is to be held at Thurrock Museum, Grays.

2.0 BACKGROUND

2.1 Location and topography (Fig 1)

The new 400kV Gas Insulated Switchgear (GIS) substation is to be built to the immediate east of existing substations to the north of the Tilbury Power Station complex, located to the east of Tilbury (TQ 654 762; Fig. 1). The power station is situated on the West Tilbury Marshes in an alluvial flood-plain on the north bank of the Thames estuary. A recent ground investigation survey has recorded made ground and a clay subsoil to a depth of c. 0.7m, overlying alluvial marsh deposits.

2.2 Geology

Thames alluvial gravels, overlying Chalk, have been recorded at depth beneath the marsh deposits. Groundwater was encountered at c. 0.7-1.0m depth.

2.3 History and archaeology

This historical and archaeological background is based on information held in the Essex Historic Environment Record (EHER) at County Hall, Chelmsford.

Tilbury Power Station comprises two power stations: Tilbury A was completed in 1958; and the larger and improved Tilbury B was added to its east in 1969, forming the prototype for a new generation of 2000MW power stations. Both were originally coal-fired, supplied via a jetty on the Thames, but have since been converted to oil-firing. The power station has been identified in the National Monuments Protection Programme as an industrial site of "potential national importance" (EHER 15093). The proposed works will, however, have only a very limited impact on the overall power station complex.

The substation site is located 1.5km north-east of Tilbury Fort, a scheduled monument (SM 26309; EHER 1678). The original fort was built in the 1540s as a simple blockhouse, but after the Dutch raid up the Thames and Medway in 1667 it was completely rebuilt between 1670 and 1685 as a star fort with an improved artillery battery, bastions and a double moat. It was added to and refurbished in the 18th, 19th and 20th centuries.

The fort was situated in an area of largely uninhabited coastal salt marsh, as shown on Chapman and Andre's map of 1777. A length of the medieval sea wall is thought to survive 400m to the south of the site (EHER 1827), and documentary evidence refers to Wick House only 100m to the south-east (EHER 1826; Fig. 1). This presumably dates to before 1777, as it does not appear on Chapman and Andre's map or on later Ordnance Survey maps.

There is also evidence for Roman settlement and salt-working on the coastal marshland in the general area of the site. In 1920 the waterlogged remains of four wattle "hut circles" were found on the Thames foreshore at low tide (EHER 1694), together with large quantities of Roman pottery, including samian ware, dated to the 1st-2nd centuries AD (EHER 1734-5 and 1828). A salt extraction site is also suspected 1km east of the site, as waste briquetage and Roman pottery have been found in this area (EHER 1829). These sites are generally known as 'red hills' from the colour of the briquetage debris found on them.

Buried peat beds in the Tilbury marshes are well-known sources of palaeo-environmental material that provides evidence for changes in climate, sea level and plant cover in the Mesolithic and Neolithic (Middle and New Stone Ages).

3.0 AIMS AND OBJECTIVES

The general aim of the archaeological evaluation and monitoring is "to assess the initial groundwork phase of the development . . . with appropriate time allowance to undertake excavation of archaeological deposits identified" (ECC HEM 2008, section 5).

The research objectives for the project will be in line with those laid out in *Research and Archaeology: a Framework for the Eastern Counties, 2. research agenda and strategy* (Brown and Glazebrook 2000). However, sampling and analysis of the palaeo-environment of the Tilbury marshes, including the buried peat beds, lies outside the scope of this investigation.

The specific objectives of the investigation will be to locate record and excavate:

- Any archaeological deposits related to Wick House to the south-east
- Any other archaeological deposits related to exploitation of the marsh, especially evidence of any further Roman salt-extraction (red hill) sites.

4.0 METHOD

Two evaluation trenches were excavated, representing a 5% sample of the substation footprint. Modern overburden, topsoil and underlying silt deposits were removed by machine down to the top of the uppermost coastal marsh deposit. The surface of the marsh deposit was then investigated for archaeological features and recorded using standard ECC FAU procedures, with stratigraphic contexts described on proforma site recording sheets, and plans being drawn at 1:50 and sections at 1:10. A photographic record, consisting of digital images, was maintained, including both detailed and more general trench shots. Levels were taken from the present ground surface and the position of each trench was located to existing structures mapped on Ordnance Survey.

IFA standards and by-laws and *ALGAO's* Standards for Field Archaeology in the East of England (Gurney, 2003) were adhered to during the fieldwork, which was monitored by Mr R Havis of ECC HEM on behalf of Thurrock District Council.

5.0 FIELDWORK RESULTS

5.1 Trenches 1 and 2

The evaluation consisted of two machine-dug trenches (Fig. 1, Trenches 1 and 2) located within the footprint of the substation, laid out in a T formation.

Trench 1 (Fig. 1; Plate 1) was aligned north-south, 25m long and 1.80m wide. It was excavated to a depth of 0.80m, down to the top of the alluvial marsh deposits. The uppermost marsh deposit consisted of waterlogged light grey alluvial silt (Fig 2; Plate 2) capped by a 0.08m thick mottled grey and orangey brown alluvial silt. This was overlain by a mid brown silty clay subsoil 0.26m thick, above which was a dark brown loam topsoil, 0.30m thick.

The northern 10m length of the trench was truncated by the remains of modern concrete pylon anchor blocks (Fig. 1, Plates 5 and 6).

Trench 2 (Figs 1; Plate 3) was aligned east-west, 15m long and 1.80m wide. It was also excavated to a depth of 0.80m, down to the top of the alluvial marsh. The same sequence of deposits was recorded in this trench (Fig.2; Plate 4), but with a slight difference in that the mottled grey/brown alluvial silt at the top of the marsh deposit was 0.10m thicker. Nevertheless, the uppermost alluvial silt deposit was at the same level as in Trench 1, at a depth of 0.60m.

No archaeological remains were present in either trench. All the horizons were naturally formed, containing no artefacts.

6.0 CONCLUSIONS

The evaluation trenches in the area of the substation identified the top of the waterlogged marsh deposits at a depth of 0.7-0.8m, with a mottled layer at its surface, at a depth of 0.6m. This and the overlying silt-clay subsoil suggests there has been some drying out of the surface of the marshland as a result of construction of a sea wall to the south of the site, probably in the medieval period, and subsequent drainage.

There is no evidence for concentrated human activity in the investigation area although trackways accessing the marsh which appear on the Chapman and Andre map 1777 suggest that the area was used as pasture.

ACKNOWLEDGEMENTS

This project was commissioned by the South-East Electricity Substation Alliance (SEESA) and special thanks are due for their assistance, especially Nicola Davies and Chris Hoare. The monitoring officer was Mr R Havis of ECC HEM on behalf of Essex County Council. P Allen managed the project and the author carried out the excavation with the assistance of J Hewitt. The illustrations were prepared by the author and A Lewsey.

BIBLIOGRAPHY

Brown N & Glazebrook J	2000	*Research and Archaeology: a Framework for the Eastern Counties, 2. research agenda and strategy*, East Anglian Archaeol. Occ. Paper 8
ECC HEM	2008	*Archaeological Monitoring at Tilbury Power Station, Fort Road, Tilbury* Essex CC Historic Environment Management team design brief
ECC HEM	2008	*Written Scheme of Investigation for Archaeological Evaluation and Monitoring. New 400kV GIS Substation, Tilbury Power Station, Tilbury, Essex.* Essex CC Field Archaeology Unit
Gurney D	2003	*Standards for Field Archaeology in the East of England*, East Anglian Archaeol. Occ. Paper 14

APPENDIX 1: TRENCH DATA

Trench No	Co-ordinates	Orientation
1	TQ 66391 76181 SW Corner	north-south
2	TQ 66382 76169 SW Corner	east-west

APPENDIX 2: ARCHIVE INDEX

SITE NAME: Tilbury Power Station (THSS08)

Index to the Archive

File containing:

1. Introduction

1.1 Brief for Evaluation
1.2 Written Scheme of Investigation for Evaluation

2. Research Archive

2.1 Client Report

3. Site Archive

3.1 1 Plans Register
3.2 1 Sections Register
3.3 1 Levels Register
3.4 1 Photographic Register
3.5 1 Permatrace Section/Plan sheet
3.6 2 Trench Sheets

APPENDIX 3: EHER SUMMARY SHEET

Site Name/Address: Tilbury Power Station	
Parish: East Tilbury	***District:*** Thurrock
NGR: TQ 654 762	***Site Code:*** THSS08
Type of Work: Evaluation	***Site Director/Group:*** Tony Blowers, ECC FAU
Date of Work: 21st to 22nd May 2008	***Size of Area Investigated:*** 72 sq m
Location of Finds/Curating Museum: Thurrock Museum	***Funding Source:*** South-East Electricity Alliance (SEESA)
Further Work Anticipated? Yes	***Related EHER Nos:*** EHER 1826 15093 1827
Final Report: *EAH Summary*	***OASIS ID:*** essexcou1-43106
Periods Represented: Modern	
SUMMARY OF FIELDWORK RESULTS: *An archaeological evaluation was undertaken at Tilbury Power Station, Tilbury by the Essex CC Field Archaeology Unit on behalf of the South-East Electricity Substation Alliance (SEESA), as a condition on planning consent to build a 400kV Gas Insulated Switchgear (GIS) substation. The work was carried out to investigate any archaeological remains related to the post-medieval Wick House to the south-east and any other deposits related to the exploitation of the marsh, especially Roman salt extraction.* *Two evaluation trenches were excavated by machine within the footprint of the proposed substation down to the top of the waterlogged alluvial marsh deposits at a depth of 0.7-0.8m. Both trenches revealed a clean orange/brown and grey alluvium, 0.1-0.2m thick, at the top of the marsh deposit, sealed by a brown silt-clay subsoil and modern topsoil. All these horizons were naturally formed and suggest a gradual drying out of the surface of the marsh, although the modern water table is still very high. No archaeological remains were present in either trench, apart from two modern concrete anchor blocks at the northern end of Trench 1.* *Ground reduction for construction of the sub-station, to a depth of 0.7m, is extremely unlikely to have an impact on any archaeological deposits.*	
Previous Summaries/Reports:	
Author of Summary: Tony Blowers	***Date of Summary:*** May 2008

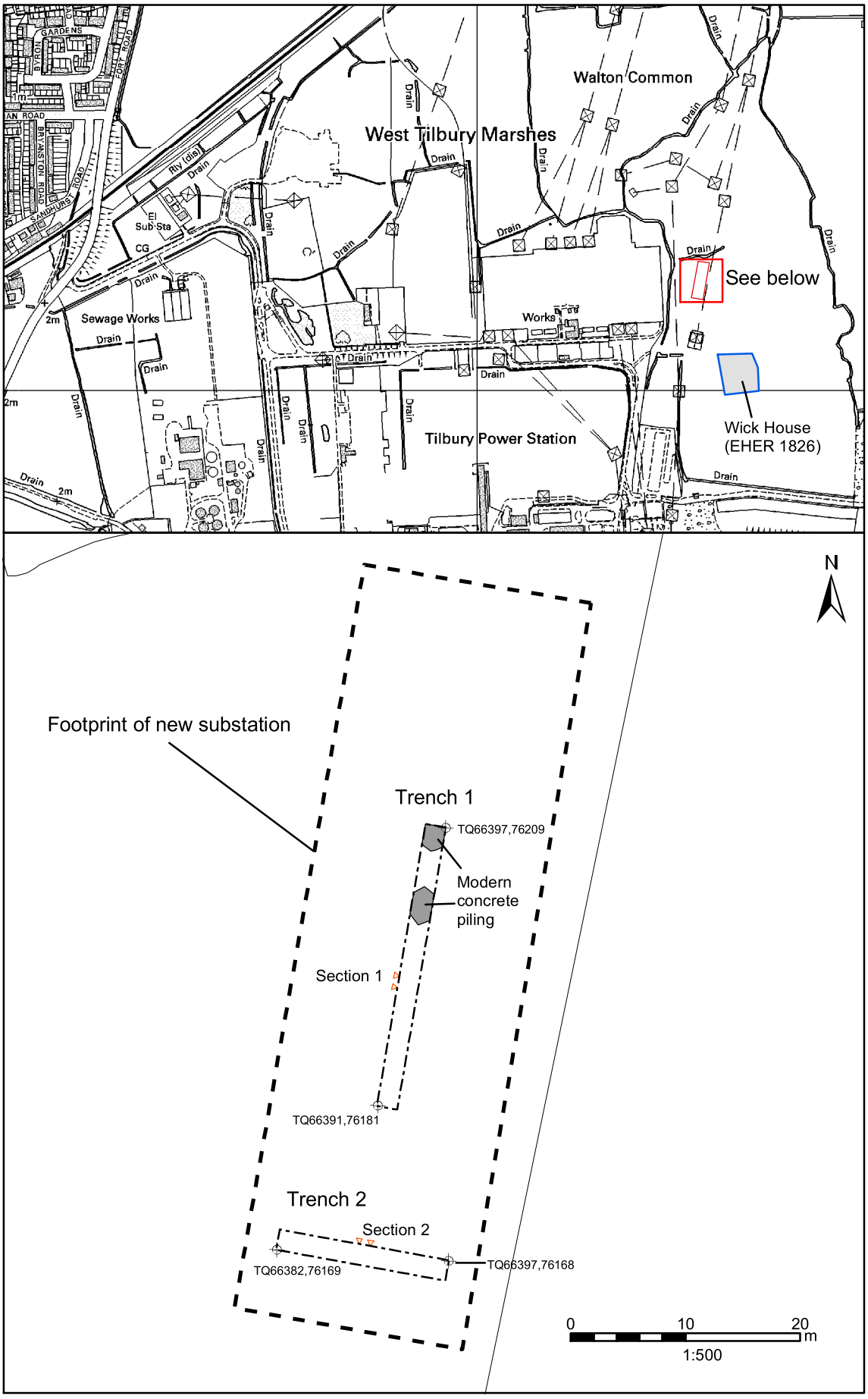

Fig.1. Location of evaluation trenches

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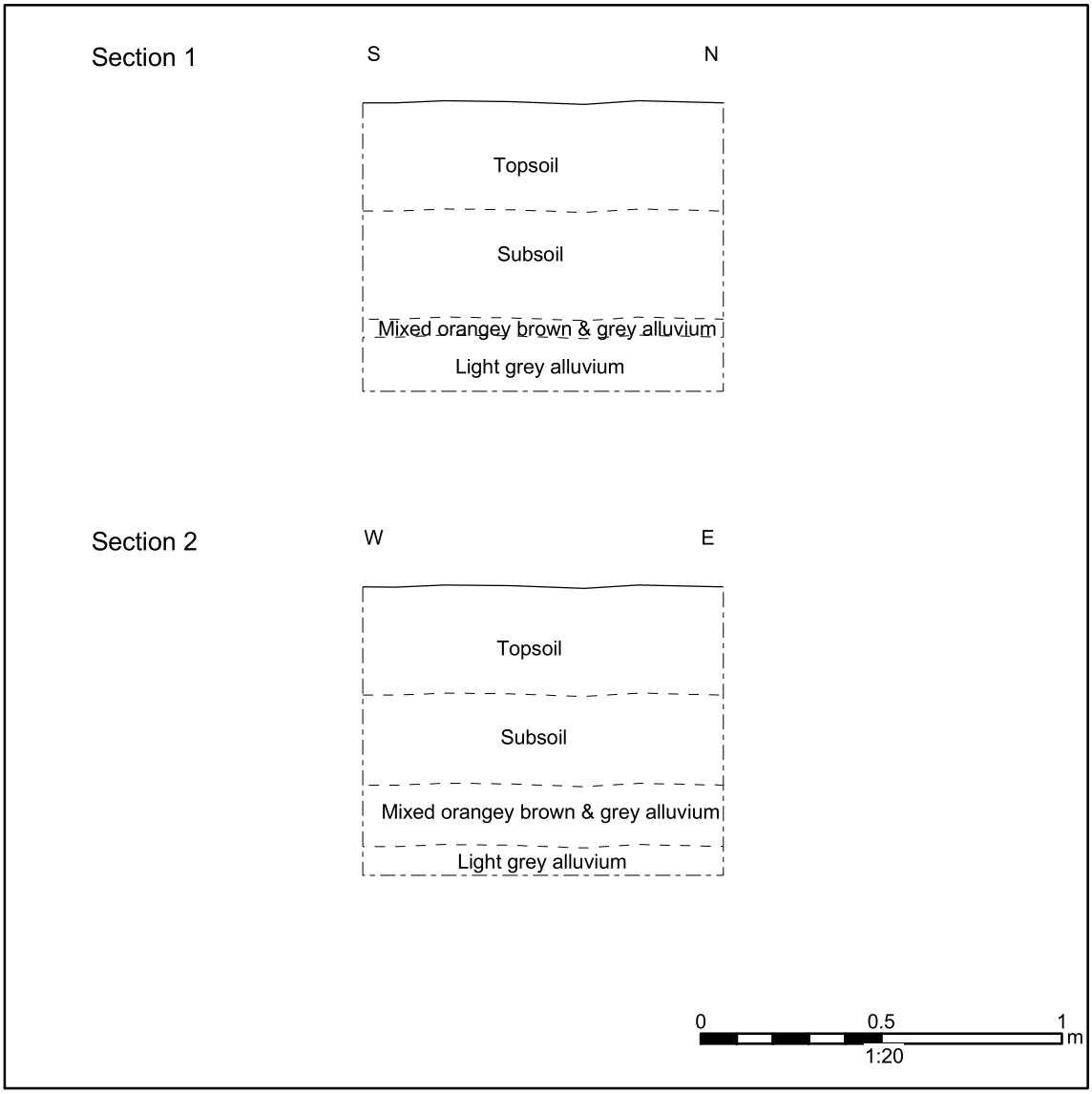

Fig.2. Sections

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Plate 1. Trench 1, general view looking north

Plate 2. Trench 2, detail of stratigraphic sequence

Plate 3. Trench 2, general view looking west

Plate 4. Trench 2, stratigraphic sequence

Plate 5. Trench 1, cleaning

Plate 6. Concrete anchor block