GREAT WILBRAHAM CAUSEWAYED ENCLOSURE

Aerial Photographic Transcription and Analysis

January 1997

CONTENTS

INDUSTRY AND ENCLOSURE IN THE NEOLITHIC.

GREAT WILBRAHAM CAUSEWAYED ENCLOSURE

SUMMARY

This report concerns the aerial photographic survey of archaeological remains of the causewayed enclosure at Great Wilbraham, South Cambridgeshire.
(TL 5395 5780)

All readily available photographs held by The Royal Commission on the Historical Monuments of England (RCHME) Swindon were examined in detail and a photogrammetric plan prepared at 1:2500 scale of all the archaeological features visible. The photographic collection held by the Cambridge Committee for Aerial Photography (CUCAP) was also consulted and all relevant photographs borrowed.

1. INTRODUCTION

The photographic transcription of this site was undertaken between 27th and 28th January 1997 by the Aerial Survey staff, RCHME, Swindon as part of the Industry and Enclosure in the Neolithic Project.

The archaeological interpretation, photographic transcription and report were carried out by Fiona Small.

2. THE 1:2500 AERIAL PHOTOGRAPHIC TRANSCRIPTION

2.1. Objectives

The aim of this survey was to interpret and transcribe at 1:2500 scale, all archaeological features showing on the available photographs within the survey area. The survey area encompassed a single large modern field situated 0.5km to the south to the village of Little Wilbraham and around 1km west of the village of Great Wilbraham, Cambridgeshire.

The final objective was to produce an accurate photogrammetric plan of all the archaeological features within the survey area, in the form of an overlay to the OS 1:2500 maps. Target accuracy was $\pm$ 2 m.

2.2. Definitions

For the purposes of the present survey, cropmark features are defined as those which have been recorded by aerial photography as differentially coloured or textured marks in bare plough-soil, arable crops, grass or any other form of vegetation.

2.3. Photographic Sources Consulted

During the course of this survey, all the specialist oblique and vertical aerial photographs held by the RCHME were consulted. The CUCAP card index to their oblique collection was consulted and all relevant photographs loaned for this project.

It was not possible to carry out an exhaustive search for further photography which may be held by commercial air survey companies or private individuals. Although it is possible that some such coverage exists, it is unlikely to contain significant amounts of archaeological information not already recorded on the aerial photographs which were available for consultation.

2.3.1 Quality and Reliability of the Photography

There were no oblique photographs of the site held by the RCHME, but there were a number of oblique photographs of the site taken by St Joseph in 1972 and 1976 for

CUCAP. The site was visible on most of these photographs, but the cropmarks were only clear enough to map from on the photographs taken in 1972. There are 35 vertical photographs covering the site, 32 of which are held by the RCHME, and three from the CUCAP collection. The causewayed enclosure was only visible on one run of photographs taken in 1969. The northern part of the enclosure was not visible in any of the photographs.

Appendix 1 consists of a listing of the aerial photographs consulted, giving accession number, date flown and repository information.

2.4. Survey Methods and Techniques

Due to the need for accuracy, the plots of the various archaeological features were produced through the use of the AERIAL 4.20 computer-aided rectification software published by the University of Bradford. This uses plane transformation techniques offering metrical precision in the region of $\pm$0-2 m at 1:2500 scale.

Field control was derived from current edition O.S 1:2500 plans (TL 5257 5357 and TL 5457-5557)

The residual errors recorded during the rectification of the archaeological features were not greater than $\pm$ 3.8m and generally below $\pm$2.0m. Where archaeological features were plotted from more than one photograph, correlation was good, indicating that features were located within 2m of their true ground position.

During the course of the survey, two separate photogrammetric plots were prepared, both of which were incorporated into the final drawing.

Appendix 2 consists of a listing of the digital files created during the course of the survey, giving file name, maximum residual error and digitised photograph reference number.

2.5. Cartographic Representation

At the time of plotting, the format of the published plans had not been decided. No topographical detail, including field boundaries, has therefore been included in the pencil drawings.

Solid lines:	Ditches or negative features.
Irregular stipple:	Ill-defined features

3. PHYSICAL LANDSCAPE

3.1. Location and Topography

The enclosure lies in a single large, arable field to the 0.5km south of the village of Little Wilbraham and 1km to the west of Great Wilbraham, Cambridgeshire. The site is situated on a slight gravel knoll at around 15m OD. Immediately to the north of the enclosure runs the original course and the New Cut of the Little Wilbraham River, and 500m to the west runs the course of the Great Wilbraham River, both of which are tributaries of the River Cam.

3.2. Geology and Soils

The prevailing geology of the area consists of Cretaceous chalk, which in the immediate area of the site is overlain by gravels. The soils are calcareous and silty in nature (type 342d [WANTAGE 2]). (Information from the 1:250,000 Soil Map of England and Wales, published by the Soil Survey of England and Wales, 1983).

4. PREVIOUS WORK

4.1. Aerial Photographs

4.1.1. Vertical Coverage

The earliest available vertical aerial photographs of the area were taken in March 1943, with subsequent sorties taken in 1944, 1946, 1956, 1968, 1969 and 1975. The causewayed enclosure was only visible on one run of photographs, MAL/69070, taken on 22th July 1969.

4.1.2. Oblique Coverage

The site was first identified and photographed in 1972 by J.K.St Joseph, with subsequent photographs taken in June, July, September and October of 1976. There were no oblique photographs of the site held by the RCHME.

4.2. Fieldwork and Excavation

The site was subjected to field walking, yielding a number of struck flint flakes of Neolithic date, and was excavated in 1975 and 1976, the enclosure ditches were sampled in three places. Large amounts of Neolithic pottery, animal and vegetable remains were recovered. The interior of the enclosure and the mere surrounding the gravel knoll on which the enclosure is located were also sampled, yielding large amounts of pottery, organic material, flint and stone objects. The excavation was able to confirm the existence of an enclosure consisting of two concentric circuits of broken ditches and a palisade, dating to the Neolithic period.

5. THE ARCHAEOLOGICAL SITES

The enclosure recorded in this survey has been plough-levelled and was only detected as a cropmark.

The survey identified the incomplete cropmark remains of a Neolithic causewayed enclosure, confirmed through field walking and excavation.

The enclosure is generally subcircular in shape and appears to have been constructed in a series of straight sections. The enclosure is defined by two concentric circuits of ditches and causeways. The inner circuit has a diameter of between 142m and 152m, and the outer circuit between 172m and 187m. The inner circuit lies between 14m and 20m within the outer circuit. When excavated, the enclosure was estimated to have a maximum area of 1.57ha.

The ditches vary in length from 9m to 30m, but due to the lack of clarity of the cropmarks, the causeways between the ditches have been hard to identify.

The northern part of the enclosure is not visible, and the cropmarks of the rest of the enclosure are not clear in any of the photographs. Over much of the enclosure the individual sections of ditch and causeways were hard to define, and parts were so indistinct that they have been represented on the final transcription by a stippled convention.

At TL 5405 5781, 6m-7m outside the eastern extent of the outer circuit, is the faint trace of a possible third section of ditch approximately 35m long.

The site was excavated in 1975 and 1976 revealing, in addition to the two circuits of interrupted ditches, a palisade ditch. However, no trace of this ditch could be seen on the available aerial photographs.

6.1 CONCLUSIONS

Through the fieldwalking, excavations and subsequent aerial survey, the presence of a Neolithic causewayed enclosure has been confirmed on a low gravel knoll immediately to the south of the Little Wilbraham River. However, due the poor quality of the cropmark evidence on the available aerial photographs, the transcription is not as accurate as would be desired. This site would benefit from further aerial reconnaissance.

Contacts

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APPENDIX 1

AERIAL PHOTOGRAPHIC SOURCES

Appendix 1 OBLIQUE PHOTOGRAPHS CONSULTED

NGR Index number	Accession number	Frame	Date flown	Repository
TL 5357/1	CCC 117 1981		--	NMR

CUCAP PHOTOGRAPHS CONSULTED

Code	Frames	Date Flown
BJO	66-70	13-JUL-1972
BXG	65-67	15-JUN-1976
BZK	94-98	08-JUL-1976
CBQ	26-28	27-SEP-1976
RC8 BR	4-7Q	13-OCT-1976

VERTICAL PHOTOGRAPHS CONSULTED

Library Repository number	Sortie number	Frame	Date flown		Scale
11705	OS/68133	44-46	31-MAY-68	7500	NMR
1726	58/1971	467-469	27-MAR-56	10000	MOD
1743	82/1428	111-112	23-MAY-56	10000	MOD
1750	58/2041	75-76	03-OCT-56	10000	MOD
2530	HSL/UK/75/34	2568	01-JAN-75	11000	AEL
326	106G/UK/1490	3163-3165	09-MAY-46	10000	MOD
5152	MAL/68038	209-211	02-JUN-68	11000	NMR
5153	MAL/68039	3-4	02-JUN-68	11000	NMR
5416A	MAL/69054	213-214	09-JUN-69	10500	NMR
5417	MAL/69055	2-3	09-JUN-69	10500	CCO
6914	US/7HP/GP/LOC267	5046-5047	10-APR-44	13300	NMR
6926	US/7HP/GP/LOC285	5030	19-APR-44	12500	NMR
7126	MAL/69070	90-92	22-JUL-69	10500	CCO
7126	MAL/69070	98-99	22-JUL-69	10500	CCO
8680	AC/294	5031-5033	09-MAR-43	8000	CC

APPENDIX 2

DIGITAL FILE INDEX

Appendix 2 DIGITAL FILES

Digital file name	**Digitised photograph**	**Maximum residual error**
gtwilb1	MAL/69070/90	± 2.2m
gtwilb2	BJO 66	± 3.8

APPENDIX 3

BIBLIOGRAPHY

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Palmer, R 1976. 'Interrupted Ditch Enclosures in Britain: the use of Aerial Photography for Comparative Studies'. Proc Prehist Soc **4 2** , 161-186

APPENDIX 4

SITE PLANS