Ancient Monuments Laboratory
Report 26/2000

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Summary

Lodge Farmhouse, Chevington, near Bury St Edmunds, is thought to have been built as a hunting lodge in the sixteenth century. There is some confusion about when it was constructed, some documents suggesting that it was built by the widow of Sir Thomas Kyston of Hengrave Hall around AD 1553, whilst others indicate that it may have been built for the Abbot of St Edmund's Abbey about AD 1539. It was hoped that dendrochronology could resolve this question. The oaks used in the construction were found to be very fast-grown, reaching a size suitable for building in only 70 - 80 years, with the result that converted timbers generally contained less than fifty annual rings and could not therefore be dendrochronologically dated.

Author's address :-

DR M C Bridge
INSTITUTE OF ARCHAEOLOGY (LONDON)
University College London
31-34 Gordon Square
London
WC1H OPY

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Introduction

Lodge Farmhouse, Chevington, near Bury St Edmunds (NGR TL784607; Fig 1) has connections with another property recently investigated, Hengrave Hall, Suffolk (see Bridge forthcoming). It was built as a hunting lodge, but there is some confusion as to whether it was constructed for the widow of Sir Thomas Kytson of Hengrave Hall around AD 1553, or perhaps for the Abbot of St Edmund's Abbey about AD 1539. There is documentary evidence (Aitkens pers comm) for a dispute over delivery of 10 loads of timber from Hengrave Hall in AD 1553 for the construction of a hunting lodge, but the extant building has some features which suggest an earlier date. Dating was requested by Philip Aitkens, and commissioned by English Heritage, in an attempt to answer this question and also to provide more data for Suffolk which is currently under-represented in tree-ring chronologies.

Methodology

The site was visited in March 1999, when the timbers were assessed for their potential use in dendrochronological study. The locations of samples taken are shown in Figure 2.

Core samples were obtained using a 15mm auger attached to an electric drill. The cores were glued to wooden laths, labelled, and stored for subsequent analysis. The cores were prepared for measuring by sanding using an electric belt-sander with progressively finer grit papers down to 400 grit. Any further preparation necessary, eg where bands of narrow rings occurred, was done manually. Only samples with more than 45-50 rings were measured and used in subsequent analyses as sequences with fewer than this number of rings rarely give reliable crossmatching. Suitable samples had their tree-ring sequences measured to an accuracy of 0.01 mm using a specially constructed system utilizing a binocular microscope with the sample mounted on a travelling stage with a linear transducer linked to a PC. The software used in measuring and subsequent analysis was written by Ian Tyers (1999).

Ring sequences were plotted on translucent semi-log graph paper to allow visual comparisons to be made between sequences on a light table. This activity also acts as a measure of quality control in identifying any errors in the measurements when the samples crossmatch. Statistical comparisons were made using Student's *t*-test (Baillie and Pilcher 1973; Munro 1984). The *t*-values quoted below were derived from the original CROS program (Baillie and Pilcher 1973). Those *t*-values in excess of 3.5 are taken to be indicative of acceptable matching positions provided that they are supported by satisfactory visual matches, and give consistent matching positions.

When crossmatching between samples is found, their ring-width sequences are meaned to form an internal site mean sequence which is then compared with a number of reference chronologies (multi-site chronologies from a region) and dated individual site masters in an attempt to date it. Individual long series which are not included in the site mean(s) are also compared with the database to see if they can be dated.

The dates thus obtained represent the time of formation of the rings available on each sample. Interpretation of these dates then has to be undertaken to relate these findings to the construction date of the phase under investigation. An important aspect of this interpretation is

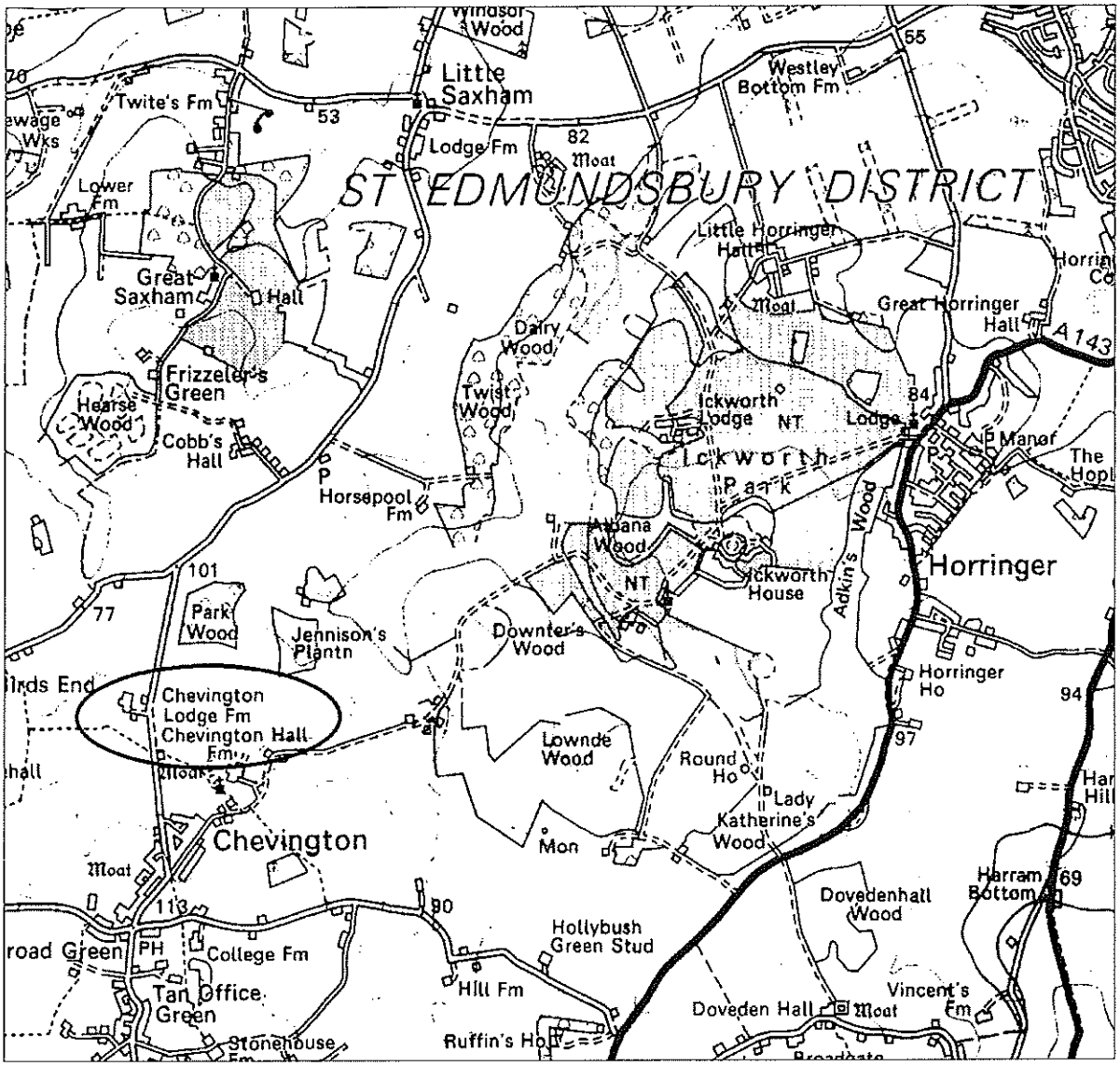

Figure 1: Location of Lodge Farmhouse, Chevington

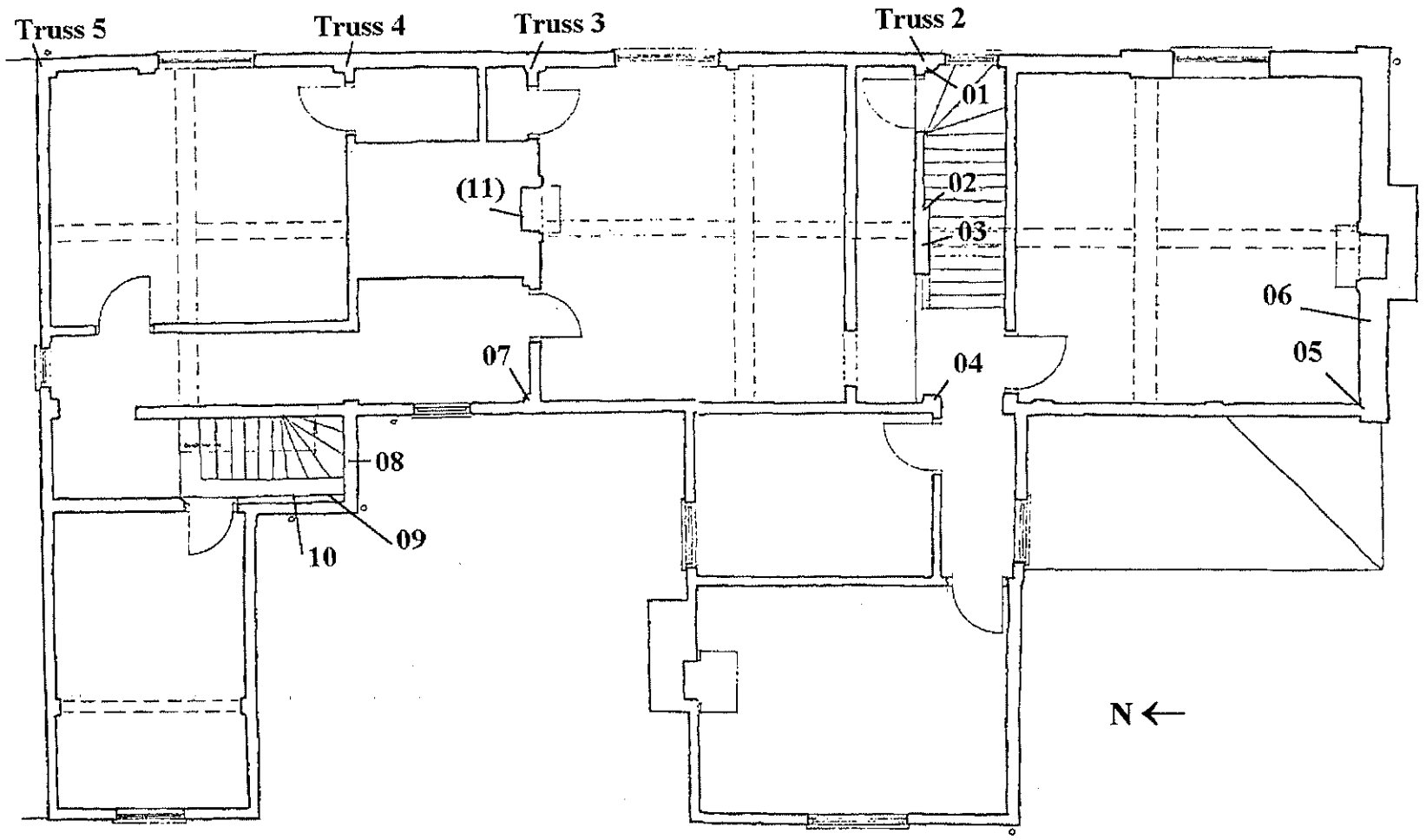

Figure 2: Plan of Lodge Farmhouse, Chevington, showing the approximate locations of dendrochronological samples

Table 1: Oak (*Quercus* spp.) timbers sampled from Chevington Lodge, Suffolk

h/s = heartwood-sapwood boundary

Sample No	Origin of core	Total No of years	Average growth rate (mm yr^{-1})	Sapwood details	Date of sequence AD	Felling date of timber AD
CHV01	East post, truss 2	<50	not measured	h/s	unknown	unknown
CHV02	Stud, 3rd from east	<50	not measured		unknown	unknown
CHV03	Stud, 6th from east	<50	not measured		unknown	unknown
CHV04	West post, truss 2	<50	not measured		unknown	unknown
CHV05	West post, truss 1	<50	not measured		unknown	unknown
CHV06	Collar, truss 1	<50	not measured		unknown	unknown
CHV07	West post, truss 3	<50	not measured	h/s	unknown	unknown
CHV08	Tie beam, truss 4	<50	not measured		unknown	unknown
CHV09	Stud in north wall	52	2.46	h/s	unknown	unknown
CHV10	Stud in north wall	<50	not measured		unknown	unknown
CHV11	Fireplace lintel, kitchen	75	1.70		unknown	unknown

the estimate of the number of sapwood rings missing. In this instance, the sapwood estimates are based on those proposed for this area by Miles (1997), in which 95% of samples are likely to have from 9 to 41 sapwood rings. Where bark is present on the sample the exact date of felling of the tree used may be determined.

The dates derived for the felling of the trees used in construction do not necessarily relate directly to the date of construction of the building. However, evidence suggests that, except where re-used timbers are employed, construction in most historical periods took place within a very few years after felling (Salzman 1952; Hollstein 1965).

Results

All the timbers were of oak (*Quercus* spp.). Details of the samples are given in Table 1, their locations being shown in Figure 2. Assessment of the suitability of timbers was difficult *in situ,* and it was felt that it was worthwhile coring the more promising looking timbers to reveal their ring series. Only two samples had sufficiently long series to make it worthwhile measuring and trying to crossmatch them, CVH09 and CVH11. No acceptable crossmatches were found.

Interpretation and Discussion

The lodge appears to have been constructed using very fast-grown oaks, large enough within 50-80 years to be cut and used. This appears not to be uncommon in the region during the suspected period of building.

The lack of rings meant that the timbers could not be dated using current dendrochronological methodology. It is possible that the very short sequences may be capable of being dated in the future. The samples and data have therefore been retained.

The wood is very different in character to that used in Hengrave Hall, only a few kilometres away, and thought to be more or less contemporaneous. This suggests a different source for the timber.

Acknowledgements

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Table 2: Ring-width data for samples CHV09 and CHV11

ring widths (0.01mm)									
CHV09									
451	467	612	605	433	384	319	387	408	306
348	355	274	285	291	207	187	281	218	236
221	200	184	148	189	245	144	148	113	99
145	106	136	239	193	151	154	147	142	211
180	158	188	158	132	109	197	198	222	228
270	362								
CHV11									
204	230	225	191	256	241	254	231	246	147
121	135	189	218	166	160	119	119	69	112
133	156	197	191	149	71	103	96	86	124
180	171	151	276	169	208	95	175	335	224
172	214	149	100	125	167	224	250	213	264
220	243	188	226	168	152	133	152	112	129
124	120	135	174	115	124	160	152	133	112
201	199	130	154	191					