

11A MARKET STREET, BINGHAM, NOTTINGHAMSHIRE; TREE-RING ANALYSIS OF TIMBERS

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SUMMARY

Analysis by dendrochronology of samples obtained from four suitable beams within this building has resulted in the individual dating of one of these timbers, the main ceiling beam to the front bedroom. This timber has an estimated felling date of sometime between 1718 at the earliest and 1743 at the latest.

Three other samples, from the main beam of the bathroom ceiling and two common joists to the ground floor ceiling, remain undated.

Introduction

Number 11A, Market Place, Bingham, Nottinghamshire, would appear to be a cottage-style dwelling of two storeys beneath a pantile roof. Within, the building retains a considerable number of beams, these forming the main beams and common joists of the first and ground floor ceiling. There would appear to be no roof timbers or wall framing. Detailed plans are available in the accompanying house history report.

Sampling

Core samples were obtained from a small number of timbers which appeared suitable for tree-ring dating by reason of having sufficient rings for reliable analysis, and by appearing to be pertinent to development of the house. These timbers were distributed throughout the building to ground and first floors. Although there were in theory other timbers available for sampling, these were derived from fast-grown trees and as such were unlikely to provide sample with the minimum number of rings, 50, here deemed necessary for reliable analysis.

Details of the samples are given in Table 1, including the timber sampled and its location, the total number of rings each sample has, and how many of these, if any, are sapwood rings. The individual date span of each dated sample is also given. In this Table the rear of the building is taken to be facing north onto Market Street.

Sample number	Sample location	Total rings	Sapwood rings*	First measured ring date (AD)	Heart/sap boundary (AD)	Last measured ring date (AD)
BNG-M01	Main ceiling beam to front bedroom	59	13	1658	1703	1716
BNG-M02	Main ceiling beam to bathroom	53	h/s	----	----	----
BNG-M03	Ground floor ceiling joist	54	no h/s	----	----	----
BNG-M04	Ground floor ceiling joist	48	no h/s	----	----	----

*h/s = the sample has the heartwood/sapwood boundary, ie. only the sapwood rings are missing

Analysis

Each of the four samples obtained from this building were prepared by sanding and polishing, and although some of them contained relatively few rings, the annual growth rings widths of each sample were measured. The data of these measurements were then compared with each other as described in the notes above. There was, however, was no cross-matching between them.

The four samples were, therefore, compared individually with the full corpus of reference data, this indicating a cross-match and date for one of them, BNG-M01, from the main ceiling beam of the bedroom. This sample has 59 rings, these rings dated as spanning the years 1658-1716. The evidence for this dating is given in the *t*-values of Table 2.

Table 2: Results of the cross-matching of site sample BNG-M01 and the reference chronologies when the first ring date is 1658 and the last ring date is 1716

Reference chronology	<i>t</i>-value	
Kibworth Harcourt Mill, Leics	6.0	(Arnold <i>et al</i> 2004)
Shenton Dovecote, Shenton, Staffs	5.9	(Arnold <i>et al</i> 2008a)
Blidworth, Notts	5.6	(Laxton <i>et al</i> 1982)
East Midlands Master Chronology	5.4	(Laxton and Litton 1988)
Gatehouse, Kenilworth Castle, Warwicks	5.4	(Arnold and Howard 2007)
Quenby Hall, Quenby, Leics	5.2	(Arnold <i>et al</i> 2008b)
Pitchforks, Norwell, Notts	4.9	(Hurford <i>et al</i> 2010)
Castle House, Melbourne, Derbys	4.8	(Arnold and Howard 2009 unpubl)

Sample BNG-M01 has been dated by individual comparison with the reference chronologies.

Sample BNG-M01 does not retain complete sapwood (the last ring produced by the tree before it was cut down) and it is thus not possible to give a precise, single year, date of felling. The sample does, however, retain the heartwood/sapwood boundary (denoted by h/s in Table 1), this being dated to 1703, plus 13 sapwood rings. Thus, given that the amount of sapwood on oak trees generally lies within known limits (1540 rings), it is possible to say that the tree represented was almost certainly felled at some point between 1718 at the earliest and 1743 at the latest.

Undated Samples

Three samples, BNG-M02, M03, and M04 remain undated. None of these samples show any peculiarities, such as compression or distortion, which might make cross-matching difficult. However, as may be seen from Table 1, these samples have relatively few rings, all having close to, or less than, the usual minimum requirement of 50+ rings for reliable analysis.