

# 38 LONG ACRE, BINGHAM, NOTTINGHAMSHIRE

## TREE-RING ANALYSIS OF TIMBERS

A J ARNOLD  
R E HOWARD

### SUMMARY

Analysis by dendrochronology of samples obtained from the two suitable beams within this building has resulted in the individual dating of one of these timbers, that to the ground floor cupboard, this estimated as having a remarkably early felling date of some time between 1232 at the earliest and 1252 at the latest.

The second sample, from the ground floor fireplace beam to the lounge, remains undated.

### INTRODUCTION

From the outside, 38 Long Acre, Bingham, Nottinghamshire (SK 705 398, Figs 1a/b), would appear to be nothing other than a late-nineteenth century two storey brick built cottage beneath a pantile roof. Within, however, a small number of timbers suggest that it is possibly older, though it is very likely that the existing timbers are reused in their present positions, probably having been salvaged from other buildings demolished at some time in the past.

### SAMPLING

Core samples were obtained from the two timbers within which appeared suitable for tree-ring dating by reason of having sufficient rings for reliable analysis, one to a ground floor fireplace, the other a plate or wall beam in a ground floor alcove or cupboard. Although there were in theory a few 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.

Each sample was given the code BNG-J (for Bingham – site 'J'), and numbered 01 and 02. 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 front of the cottage is taken to be facing north onto Long Acre.

Sample number	Sample location	Total rings	Sapwood rings*	First measured ring date (AD)	Heart/sap boundary (AD)	Last measured ring date (AD)
BNG-J01	Fireplace beam	43	h/s	-----	-----	-----
BNG-J02	Ground floor alcove/cupboard beam	83	19	1149	1212	1231

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

### ANALYSIS

The two samples obtained from this building were prepared by sanding and polishing and, although sample BNG-J01 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. There was, however, was no cross-matching between them.

The two samples were, therefore, compared individually with the full corpus of reference data, this indicating a cross-match and date for one of them, BNG-J02, from the alcove or cupboard beam. This sample has 83 rings, these rings dated as spanning the years 1149– 1231. The evidence for this dating is given in the *t*-values of Table 2.

**Table 2:** Results of the cross-matching of site chronology BNG-J02 and the reference chronologies when the first ring date is 1149 and the last ring date is 1231

Reference chronology	<i>t</i> -value	
'Severns', Castle Road, Nottm	10.4	( Howard <i>et al</i> 1996 )
Angle Choir, Lincoln Cathedral	8.9	( Laxton and Litton 1988 )
East Midlands Master Chronology	8.4	( Laxton and Litton 1988 )
Gatehouse, Kenilworth Castle, Warwicks	7.4	( Arnold and Howard 2007 )
Oakham School, Oakham, Rutland	7.2	( Howard <i>et al</i> 1999a )
The Hollies, Bathley, Notts	6.7	( Alcock <i>et al</i> 1991 )
Manor House, Medbourne, Leics	6.4	( Howard <i>et al</i> 1999b )
Nevill Holt, Leics	6.3	( Arnold <i>et al</i> 2008 )

Sample BNG-J02 has been dated by individual comparison with the reference chronologies.

Sample BNG-J02 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, this being dated to 1212, plus 19 sapwood rings. Thus, given that the amount of sapwood on oak trees generally lies within known limits (15–40 rings), and allowing that the last extant ring on the sample is dated to 1231, it is possible to say that the tree represented was almost certainly felled at some point between 1232 at the earliest and 1252 at the latest, a remarkably early date for any timber in a vernacular context.

### Undated sample

One sample, BNG-H01, from the fireplace beam, remains undated. This sample does not show any peculiarities, such as compression or distortion, which might make cross-matching difficult. However, as may be seen from Table 1, this sample has only 43 rings, well below the usual minimum requirement of 50+ rings for reliable analysis.