

ANCIENT MONUMENTS LABORATORY

REPORT

2512

SERIES/No	CONTRACTOR
AUTHOR	Jennifer Hillam May 1978
TITLE	The Dating of Featherstone Church, West Yorks

THE DATING OF FEATHERSTONE CHURCH (West Yorks)

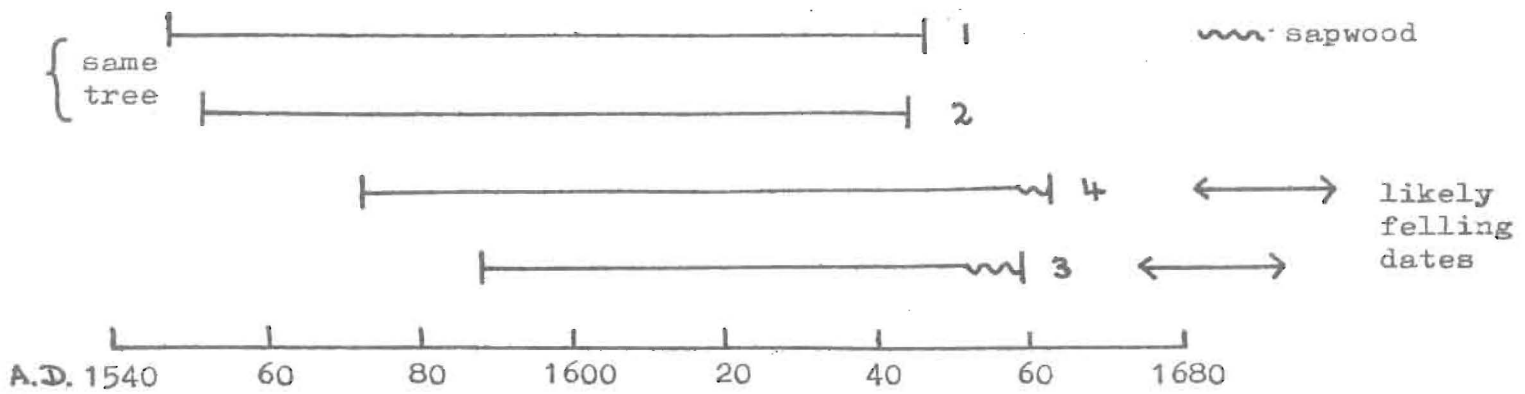
The construction of the church's bell frame was dated, by an inscription, to 1682. It was hoped to verify - or to disprove - this by the use of tree-ring analysis. Four oak beams were sampled for the study; three (nos 1-3) were known to be original but there was some uncertainty about the fourth (no. 4).

The surface of the wood was cleaned with a sharp knife so that the individual annual rings showed up clearly. They were measured with a X10 magnifying lens which contained a graduated eyepiece. The ring-widths were represented graphically on transparent paper to enable them to be compared visually. All the ring-curves were found to cross-match, i.e. were contemporary. The graphs of samples 1 and 2 were almost identical and, as the two pieces were alike physically, it was assumed that they came from the same tree. A master curve of 117 years was made by meaning the ring-widths of the four samples. The computer was used to give this curve an absolute (calendar) date. It gave a significant Student's t-value of 3.93 with a curve from the Welsh border region, which gave an outer year for Featherstone of 1663. A visual comparison with a long-lived tree from Sherwood Forest confirmed this result. The presence of sapwood on two of the timbers (nos 3,4) ^{allowed} the felling date to be estimated. A recent study showed that oak trees usually have 32±9 years of sapwood. This would give a likely felling date within the period 1675 to 1700.

In conclusion, it can be said that all the samples came from the original structure, which was probably built - in accordance with the inscription - in 1682.

Jennifer Hillam
Sheffield University
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Block diagram to show the cross-dating of the Featherstone samples



Details of the wood

<u>Sample no.</u>	<u>Original?</u>	<u>No. of rings</u>	<u>Sapwood</u>	<u>Sketch (approx.)</u>
1	yes	99	X	<p>23cms 25 24 24</p>
2	yes	93	X	<p>23 26 24 24</p>
3	yes	71	7 years	<p>10 17 18 12 sapwood</p>
4	? (but later proved to be original)	91	5 years	<p>24 X 24 sapwood</p>