



## Scientific Dating Team

### THE SHAKESPEARE HOTEL, STRATFORD-UPON-AVON, WARWICKSHIRE: INTERIM STATEMENT ON THE DENDROCHRONOLOGICAL ANALYSIS OF TIMBERS

#### Sampling and Analysis

Details of the samples are given in Table 1. Many timbers were assessed as having too few rings for conventional dendrochronology, but a few samples were taken in various areas to be available for possible radiocarbon and/or oxygen isotope analysis in the future. The most suitable timbers were found in the front south range (Block A), which was of most interest in the interpretation of the building. Some areas, for example Block F, were thought to be all elm (*Ulmus* sp.), although in fact one timber here was found to be of ash (*Fraxinus* sp.).

Overall 22 timbers were sampled (Table 1) of which 12 had less than 40 rings, and three were non-oak species. Four timbers from Block A dated, producing a site master covering the period AD 1506–1622. Three of the timbers had complete sapwood, although this was detached from the main core in one sample. The ring series from a single beam in Block E dated to the period AD 1372–1503, and that from a single beam in Block G (which had several elm beams) dated to the period AD 1620–95.

#### Interpretation

The dated timbers in Block A have felling dates of winter AD 1621/2 and the following winter AD 1622/3, with a further timber having a limited felling date range, where it is unclear if any rings were lost between the end of the core (h/s) and the detached complete sapwood, and was from a tree felled at a similar date. This suggests construction of this street-front range in the early AD 1620s (Fig 1).

Block E is behind this dated street-front range, and only a single timber dated. This timber has a *terminus post quem* for felling of AD 1512, indicating that it could be about a century earlier than the Block A timbers. It may of course be a re-used timber, or it may give a clue to an earlier building on the site. Block G, extending back from the northern part of the complex, had a mix of oak and elm elements at ground floor level, with a post formed from a tree felled in the period AD 1695–1724, perhaps representing the date of construction of this block.



Table 1: Details of tree-ring samples taken from The Shakespeare Hotel, Stratford-upon-Avon

| Sample No  | Location  | No rings | Date of measured sequence AD | Sapwood      | Mean ring width (mm) | Mean sensitivity | Felling date range AD |
|------------|---|----------|------------------------------|--------------|----------------------|------------------|-----------------------|
| Block A    |   |          |                              |              |                      |                  |                       |
| shakA01    | East post, T5   | 36       | -                            | h/s          | 1.84                 | 0.23             | -                     |
| shakA02    | East post, T4   | 87       | 1509–95                      | h/s          | 1.67                 | 0.19             | 1604–36               |
| shakA03    | Interrupted tie, T4   | 64       | 1544–1607                    | h/s (+11CNM) | 1.86                 | 0.19             | c1619–24              |
| shakA04    | Interrupted tie, T3   | 72       | 1550–1621                    | 14C          | 1.66                 | 0.25             | winter 1621/2         |
| shakA05    | West post, T3   | 117      | 1506–1622                    | 13C          | 1.15                 | 0.20             | winter 1622/3         |
| shakA06    | West wallplate, bay 3   | 27       | -                            | 3            | 3.19                 | 0.18             | -                     |
| shakA07    | West purlin, bay 2  | 34       | -                            | h/s          | 2.83                 | 0.18             | -                     |
| Block B    |   |          |                              |              |                      |                  |                       |
| shakB01    | Grd Flr moulded transverse beam (by phone cabin)                | 63       | -                            | h/s          | 2.22                 | 0.27             | -                     |
| shakB02    | South-west corner post  | 26       | -                            | -            | 4.07                 | 0.16             | -                     |
| Block B/C  |   |          |                              |              |                      |                  |                       |
| shakBC01i  | Arched brace outside Rm 201, inner rings                        | 23       | -                            | -            | 2.96                 | 0.26             | -                     |
| shakBC01ii | <i>ditto</i> , outer rings                                      | 17       | -                            | 10 ½C        | 2.70                 | 0.19             | -                     |
| Block C    |   |          |                              |              |                      |                  |                       |
| shakC01    | Rear axial beam (by bar, grd flr)                               | 36       | -                            | h/s          | 2.36                 | 0.23             | -                     |
| shakC02    | Grd Flr partition wall, 3rd stud from front of building         | 42       | -                            | h/s          | 2.24                 | 0.22             | -                     |
| shakC03    | Grd Flr partition wall, stud adjacent to front wall of building | 15       | -                            | -            | 3.62                 | 0.32             | -                     |
| shakC04    | Grd Flr partition wall, sill beam                               | 26       | -                            | 5            | 2.86                 | 0.23             | -                     |
| Block E    |   |          |                              |              |                      |                  |                       |
| shakE01    | East beam in grd flr bar  | 132      | 1372–1503                    | -            | 1.17                 | 0.23             | after 1512            |
| shakE02    | West beam in grd flr bar  | 29       | -                            | -            | 1.67                 | 0.23             | -                     |
| Block F    |   |          |                              |              |                      |                  |                       |
| shakF01    | North-east corner post, room 115 (ELM)                          | 50       | -                            | -            | 2.89                 | 0.38             | -                     |
| shakF02    | West end tiebeam Rm 104 (ASH)                                   | 52       | -                            | -            | 3.37                 | 0.26             | -                     |

Table 1 continued:

| Sample No | Location  | No rings | Date of measured sequence AD | Sapwood | Mean ring width (mm) | Mean sensitivity | Felling date range AD |
|-----------|---|----------|------------------------------|---------|----------------------|------------------|-----------------------|
| Block G   |   |          |                              |         |                      |                  |                       |
| shakG01   | South post near fireplace, grd flr  | 76       | 1620–95                      | 12      | 1.94                 | 0.21             | 1695–1724             |
| shakG02   | Transverse beam, east of fireplace, grd flr   | 31       | -                            | h/s     | 2.64                 | 0.14             | -                     |
| shakG03   | Furthest east ceiling beam, grd flr   | 39       | -                            | h/s     | 2.21                 | 0.23             | -                     |
| shakG04   | Ceiling beam adjacent to fireplace, grd flr (ELM)<br>(beam to west also elm, not sampled) | 33       | -                            | -       | 1.88                 | 0.23             | -                     |

Key: C = complete sapwood, felled the following winter; ½C = complete sapwood, felled the following summer; h/s = heartwood/sapwood boundary; NM = not measured;

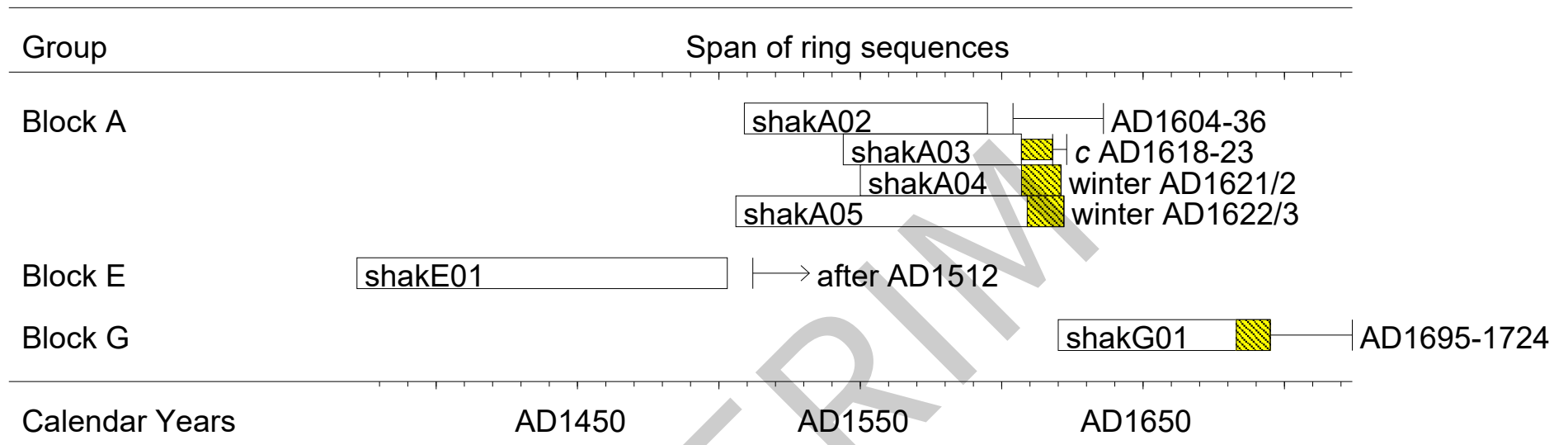


Figure 1. Bar diagram showing the relative positions of overlap of the dated ring sequences. White bars represent measured heartwood rings; yellow hatched sections represent measured sapwood rings