Leicester Castle: The Great Hall

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A DETAILED RE-EXAMINATION of the Great Hall of Leicester Castle has confirmed its mid 12th-century date. It originally had a clerestoried form, decorated with semicircular transverse and longitudinal braces, and was closely comparable to the hall of the Bishop's Palace at Hereford. Both stand in the forefront, socially and architecturally, of 12th-century construction.

INTRODUCTION

The Great Hall of Leicester Castle (Pl. v, A) shows a close similarity to the hall of the Bishop's Palace at Hereford. It also is a major aisled hall of the 12th century, and in particular retains most of its original arcade posts. Recent extensive renovation of the hall has allowed a much closer examination of the structure than possible before, and Leicestershire Museums Service has sponsored a full-scale study of the hall, including architectural, archaeological, dendrochronological and documentary research. The full results of this are published elsewhere,[1] but the new study of the Hereford hall by John Blair (preceding article) provides an opportune context for a review of the new evidence for the original structure of the Leicester Castle hall.

The hall has previously been discussed by Dr L. Fox[2] emphasizing the documentary evidence, and by Professor W. Horn in relation to a series of radiocarbon dates for its timberwork.[3] These gave a very confusing picture with dates ranging from 900 to 1450 (with claimed statistical errors of about 50 years), and led to the paradoxical conclusion that (i) there was no break in the continuity of the roof timbers, thus it should be entirely Norman, but (ii) many of the radiocarbon dates were clearly later than that, and (iii) much of the roof seemed to be considerably later in design. A further problem was posed by the tie-beam of the S. gable truss which cuts across the voussoirs of the Norman windows, thus should not be original; Horn argued that this was merely due to settlement, but he seems not to have considered fully the implications of the substantial movement needed to explain it; the alignment of the rest of the roof shows some distortions but not on this scale.

DATING

The dendrochronological survey has given a radical solution to Horn and Smith's paradox. *All the timbers of the roof date from the early 16th century*, except for the central arcade-posts.[4] Thus the only structural break in the roof is that between the main posts and the rest of the structure, which has left no signs of patching or

alteration. Two dates are available for the arcade-posts. Post c[5] gave a final tree-ring of A.D. 1087 (with no sapwood), and a detached carved capital from another post (Pl. V, B) has a final ring at A.D. 1122 (giving an earliest date of 1137, with minimum sapwood allowance and no lost rings).[6] This, with the architectural examination, shows that the main aisle-posts are original work of the 12th century. It is tempting to suggest that the hall was constructed after the destruction of the castle's defences following the rebellion of 1173. This destruction is recorded in the Pipe Rolls for 1176–77 (at the very modest cost of £2 11*s.* 9*d*).[7] However, a date as late as this is difficult to reconcile with the stylistic evidence of (i) the scalloped capital (Pl. V, B) and (ii) the S. windows of the hall, decorated with chevron ornament and with attached pilasters (shown schematically in Fig. 1 and in more detail in Horn's Fig. 29). These require a mid 12th-century date, likely to be in the 20 years after 1140 (and with a preference from the dendrochronological evidence for 1150–60).[8]

This dating for the hall leads to the identification of Robert de Beaumont, Earl of Leicester (known as le Bossu; 1104–68), as responsible for its building. He was the founder of Leicester and Garendon Abbeys, and Lusfield and Nuneaton Priories, and was chief justiciary of England under Henry II — and probably at this time the most powerful man in the country. As with the hall at Hereford, the Leicester hall is therefore a work from the highest level in 12th-century society.

PLAN

The hall is very substantial. It contains six bays (oriented N.–S.) of total length 24 m (79 ft.), with a transverse distance between the post centres of 7.7 m (25 ft.). The aisles were probably each 4.9 m (16 ft.) wide from the post centres to the inside of the exterior wall,[9] giving a total internal width of 17.5 m (57 ft.). Thus it is virtually the same width as the Hereford hall and slightly shorter than the original four-bay length there. The entrance must have been from the east, courtyard, side but this wall has been rebuilt. The intact W. wall contains no doorway, indicating the absence of a cross-passage.

At its S. end, the Leicester hall was clearly free-standing, or attached only to a low structure; this gable wall contains two round-headed windows at high level and an offset doorway on the ground floor. A small round-headed window also existed at the top of the gable until the 1960s. The original N. gable survives much less completely (Pl. V, A), but the ground falls steeply beyond it, and trial excavation gave no indication of any attached building. Leicester therefore shows an earlier stage than Hereford in the development of the medieval house.

THE ORIGINAL ROOF

The direct evidence for the original roof of the hall is modest — just the four surviving full-length posts of the W. arcade (each now about 25 ft. (7.6 m) high and 0.4 m (16 in.) square at mid height), and the tops of the four posts of the E. arcade (truncated some 20 ft. above the floor in extensive alterations made in 1821). However, deductions from the carpentry details, confirmed by comparison with

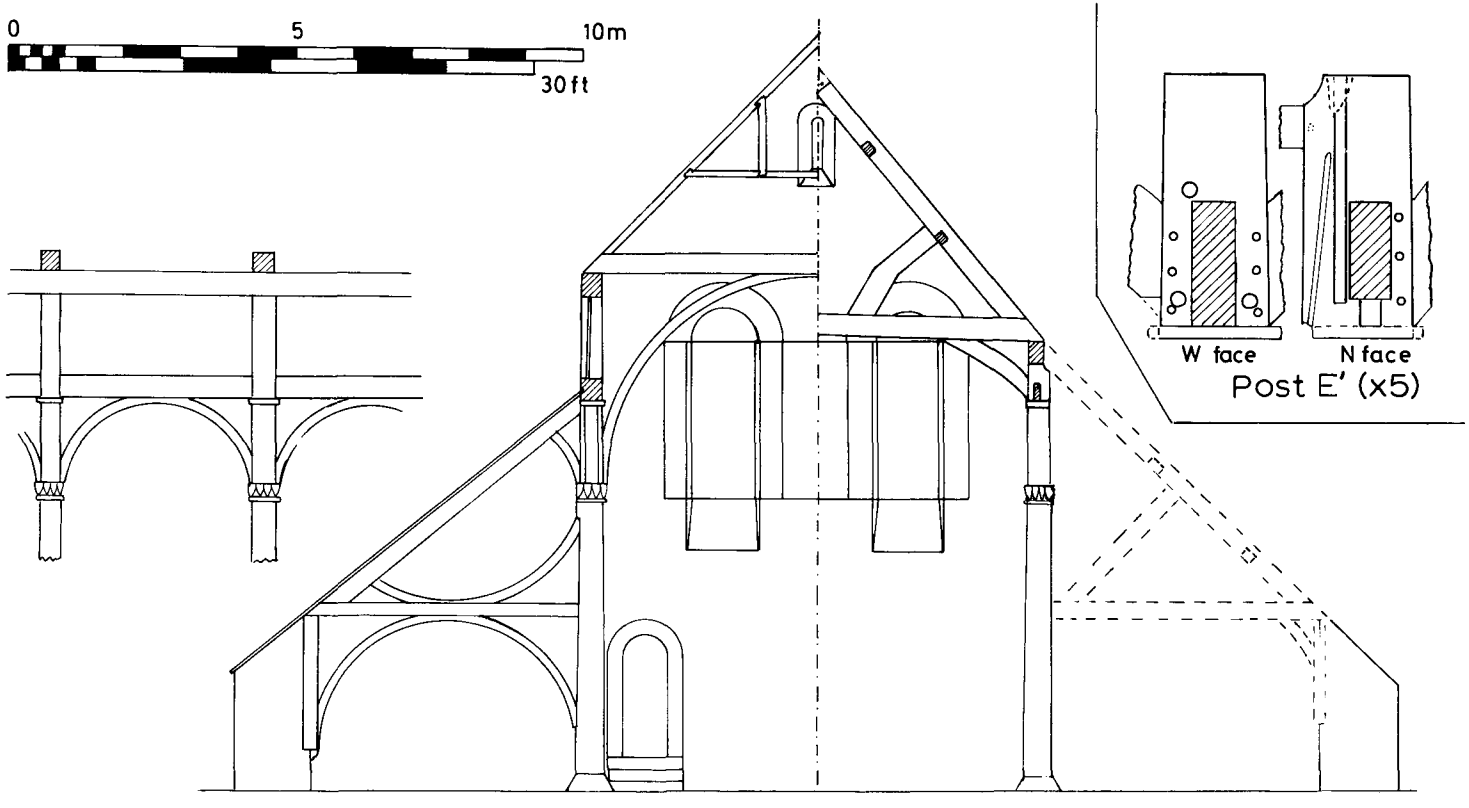

FIG. 1

Section of Leicester Castle Hall, based on truss C (posts c–c'), projected onto a simplified elevation of the S. wall (see Horn, op. cit. in note 3, 58 for a detailed view). Right: present roof of the nave (based on survey drawings by N. P. Klee), with a reconstruction of the aisle roof, based on the pre-1821 illustration. Left: Suggested reconstruction of the nave and aisle roofs in their original form. Inset left: longitudinal section of the upper part of arcade. Inset right: elevations of the W. and N. faces of the surviving fragment of post e' (five times main scale)

other early aisled halls, make it possible to reconstruct the essential form of the roof (Fig. 1). The most significant parallel is certainly the Hereford hall, which is similar in decorative detailing (though more ornate), as well as having almost the same width. The two other early aisled halls known from the Midlands also contribute to our understanding of the Leicester roof, though neither is quite as large. At Temple Balsall, Warwickshire, the hall of the Knights Templar shows features consistent with the late 12th century.[10] The manorial hall at Burmington, Warwickshire, is fairly closely datable to *c.* 1215 by a combination of architectural evidence and dendrochronology.[11]

The major decoration of the posts is their capitals, placed 5.2 m (17 ft.) above the present floor. One only of these can now be seen in situ (post c), and its main face has been chopped back. However, a complete capital exists as a loose timber (probably removed in the 1821 alterations; Pl. v, B). This is of square section, decorated with scallops. Immediately above the moulding, the capital is cut back and all four sides contain pairs of large peg-holes (1 in., 25 mm diameter) of the form used at Hereford and Burmington for large semicircular braces. A simple abacus occurs just under the springing of the 16th-century arcade and the tie-beam braces.[12] Various minor features also exist on the posts (see below). For none of the full-length posts have the sides facing the aisles been exposed, so that we have no evidence for the aisle-tie or its braces. An early view shows stone bases to the posts, which are also no longer visible.[13] The posts were probably tapered, but this cannot be conclusively established.

The key to reconstructing the roof lies in the upper abacus, the braces above it, and Horn's observation of the conflict between the tie-beams and the windows in the S. gable. The last point implies that the arcade-posts were originally taller, and a likely position for the tie-beams can be deduced.[14] The interior of the S. gable has a deep ledge 0.35 m (14 in.) above the top of the window arches. This probably marks the transition from the main end wall to its gable triangle, and should therefore correspond to the top of the tie-beam, implying that the posts were originally about 8.6 m (28 ft.) tall. *A tie-beam at this level is in precisely the correct position to carry semicircular braces rising from the main capitals.*

These braces would have formed a series of great arches across the hall. Braces of this type are found along the arcades at both Hereford and Burmington, and similar transverse braces have been postulated for both halls. In both, the braces are face-pegged, as deduced for Leicester from the peg-holes on the capital; N. Cooper points out in his analysis of Burmington that this method is particularly appropriate for semicircular braces, which intersect the main timbers at very acute angles. The reconstruction shows that the semicircular braces (though not the tie-beams) still obscure the heads of the gable windows slightly. It is possible that the end trusses (for which no evidence at all survives) were treated differently from the main posts in this respect, perhaps having short posts without braces, carried on corbels.

At first sight the pegs for side braces on the loose capital create problems. Because the posts are only 3.4 m (11 ft.) apart, semicircular arcade braces cannot reach to nearly the same height as the transverse braces with their clear span of 7.3 m (23 ft.). The unavoidable explanation is that longitudinal timbers spanned between

the posts at a lower level than the arcade-plates. In fact, they would run precisely above the abacus mouldings, indicating the rationale for this feature. The resulting form is exactly that established by the detailed analysis of the Hereford hall[15] — a clerestorey above each arcade. The mortices for these clerestory plates still exist, and have been reused for the 16th-century arcade-braces.[16] The difference between these mortices and the new ones for the 16th-century braces to the tie-beams is clearly shown by their pegging. Both have sets of three small pegs, but the longitudinal mortices also have a single large disused peg-hole, clearly surviving from their original use.

The Hereford hall shows one significant difference from Leicester. The separation of its posts along the arcade is almost equal to the width of the nave. Thus, in order to achieve corresponding semicircular arches in both directions, the springings for the nave arches are considerably above those for the arcade. This was avoided in the Leicester hall by using a closer spacing for the posts along the arcade.

The posts show two further features that fit with the proposed clerestory. Down-sloping grooves on the backs of the posts, associated with sets of four peg-holes, are in precisely the right place to carry the ends of the aisle rafters and the creasing for other aisle roof members.[17] Vertical and near-vertical grooves are cut on the sides of the posts, but do not descend below the mortices for the clerestory plates; most of the grooves are of square section to take plank infill (as at Temple Balsall hall). Posts b′ and e′ (Fig. 1) also have oblique grooves of V-section to take wattling staves. These were presumably for repairs; it would clearly be much easier to execute a repair in wattle and daub than in plank-walling. Post e′ also has a large peg-hole on its inner face, whose purpose is obscure, while post f′ (only) has a plank groove there, indicating that the spandrels of the arch across the nave were infilled. These spandrels were perhaps decoratively pierced to ornament the high end of the hall.

One feature remains somewhat enigmatic in the proposed reconstruction. As well as pegs for arcade and tie-beam braces, the detached capital has similar pegs for an upward brace on the aisle face. This is far too high for a brace to the aisle-tie (whether in a clerestory or non-clerestory roof), and presumably must have held a small brace under the aisle-rafter. A single peg-hole runs through the capital below the decoration. Its purpose is unknown, but if repeated on the other posts, the series could have been for hangings.

The pitch of the original roof can only be estimated.[18] It must have been shallower than the later roof if the aisle walls were of reasonable height, suggesting a value close to 45°, with the outer walls of the same height as later. A similar pitch is likely for the upper roof, in contrast to the considerably steeper pitch used in the 16th-century reconstruction (52°). The choice of this pitch was probably controlled by the wish to retain the original outer walls and the masonry of the gable, but to remove the clerestory; this had the incidental result of reducing the height of the arcade-posts.

No evidence exists for the upper roof at either Leicester or Hereford. However, one complete bay of the roof at Temple Balsall survives (with a span between posts of 6.1 m (20 ft.). It is of common rafter form, with halved collars and queen-struts to each truss. At Burmington, reused fragments derive from a common rafter roof, and

their halvings are consistent with an identical structure. It is highly likely that Leicester also had a common rafter roof, as this is universal in buildings before the 14th century. In the figure, it is shown as identical to Temple Balsall.

For the aisle roofs, reconstruction is based on the structural requirements, but its details are hypothetical. The aisle-ties must have been set very low down the posts, and outer wall-posts are probable, perhaps supported on corbels. The available height (3 m; 9 ft.) just permits semicircular braces between such posts and the arcade-posts, and these are drawn in Fig. 1, together with braces above the aisle-tie to balance those between the arcade-posts and the aisle-rafters. It may in the future be possible to confirm or disprove some of these suggestions, by exposing the outer sides of the posts.

COMPARISONS

Despite the fragmentary remains of the 12th-century hall of Leicester Castle, the detailed analysis allows us to infer with considerable confidence that it was originally a magnificent clerestoried structure, decorated with Romanesque-style semicircular arches. It thus reinforces the evidence obtained from the hall at Hereford for the character of a major timber-framed building of the late Norman period. As Blair has shown for Hereford (preceding article), so the social context of Leicester Castle also places it as a stylistic leader. The poorer preservation of its decorative detail means that it adds little in this respect to the impression gained from Hereford. However, in overall size and scale, they are almost indistinguishable. The one notable distinction is in the handling of the clerestory structure. The springing of the arcade and nave braces from the same point seems aesthetically more satisfactory and avoids the rather clumsy junction found at Hereford. The penalty was the use of more arcade-posts at Leicester, and it may be that the Hereford design was considered an improvement for this reason

It is worth noting that the essential evidence needed to deduce the clerestory at Leicester is modest: the presumption that semicircular braces were used, the springing of the longitudinal and transverse braces from the same height, and the unequal spacing of the arcade-posts along and across the hall. It may be possible to identify this combination of features in other 12th-century halls, and extend our knowledge of the use of clerestories; the halls of the bishop's palaces at both Exeter and Farnham are clear candidates for such re-examination.[19]

NOTES

[1] *Leicester Castle* (Leicestershire Museums, Art Galleries and Records Service, 1988). We are most grateful for the generous support for all the aspects of this study by the Museums Services. Ray Hill of Leicestershire County Council Property Department kindly arranged access during the renovation work, and Ray Beck, for Walter Smith and Sons, the contractors, was most helpful while the work was in progress. Nicholas Kee carried out a full re-survey of the existing structure, which was used as a basis for the Figure.

[2] L. Fox, 'Leicester Castle', *Trans. Leicestershire Archaeol. Hist. Soc.*, 21 (1942), 127.

[3] W. Horn, 'The potential and limitations of radiocarbon dating in the Middle Ages: the art historian's view', 23–87 in R. Berger (ed.), *Scientific Methods in Medieval Archaeology* (Los Angeles, 1970), 56–66, citing discussion with J. T. Smith.

[4] Carried out by Dr G. Simpson and Robert Howard. Details are included in the full publication. The preferred date range for the 16th-century timbers is 1502–31. It is noteworthy that the 1964 radiocarbon dates are considerably less accurate than had been supposed, perhaps because the growth correction could not be satisfactorily evaluated.

[5] Using the labels in Horn's figs. 30–31 (op. cit. in note 3, 58–59). These label the trusses A to G from south to north, identifying the W. and E. posts as a and a′, etc., respectively.

[6] P. Liddle, 'Archaeology in Leicestershire and Rutland, 1982', *Trans. Leicestershire Archaeol. Hist. Soc.*, 57 (1981–82), 78.

[7] *22 Henry II, 179*; *23 Henry II, 29* (Pipe Roll Soc., 1904; 1905).

[8] We thank R. Halsey and J. West for their independent concordant assessments of the stylistic dating evidence.

[9] The precise width is slightly uncertain because of the reconstruction of the E. wall.

[10] A refinement of the 'pre-1259' dating suggested in N. W. Alcock, 'The Hall of the Knights Templar at Temple Balsall, W. Midlands', *Medieval Archaeol.*, 26 (1982), 155.

[11] N. Cooper, *Ann. Rep. Royal Commission for Historical Monuments (England)* (1984–85), 27.

[12] In 1962, Horn observed this abacus on two of the posts; one has now been obscured by plaster, but fragments of the second remain at the base of post e′ (Fig. 1, inset). It can also be seen on an early 19th-century view of the interior of the hall (Horn, op. cit. in note 3, fig. 28).

[13] Horn, op. cit. in note 3, fig. 28.

[14] It has to be borne in mind that the roof ridge decreases in height by about 1 m (3 ft.) from south to north, though the present floor is level. Thus different trusses are at slightly different heights above the floor.

[15] C. A. Ralegh Radford, E. M. Jope and J. W. Tonkin, 'The Great Hall of the Bishop's Palace at Hereford', *Medieval Archaeol.*, 17 (1973), 78.

[16] The 16th-century braces to the arcade-plate are remarkably flat in profile, springing only 0.9 m (36 in.) below the plates, while extending 1.3 m (51 in.) along them (ratio 1 : 1.45), in contrast to the normal 1 : 1 or 1.2 : 1 ratio. This is understandable in the light of the 16th-century carpenter's need to reuse the inconveniently placed mortices for the clerestory plate.

[17] These grooves were only well-preserved on post b′, and regrettably have been concealed in the course of the recent repair work.

[18] Cf. N. W. Alcock and M. Moran, 'Low open-truss Beams', *Vernacular Archit.*, 15 (1984), 47.

[19] For Exeter, see 'Medieval Britain and Ireland in 1986', below, entry no. 32.