

GLOUCESTER CATHEDRAL NORTH AISLE ROOF

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Report on architectural recording during repairs

In 1997-8 the north aisle roof covering was removed and replaced and very minor repairs made to roof timbers. An archaeological assessment of the roof proposed that, apart from records of any timbers to be repaired, a record should be made of the stonework of the east end of the north aisle roof, since the removal of the roof covering provided an opportunity to relate the details here to the elevations of the west side of the north transept and the north side of the nave. This record was duly made (Figs 1 and 2 below).

DESCRIPTION

The north aisle of Gloucester Cathedral is Romanesque in design; it has Romanesque shafts and capitals (some towards the west end highly decorated: see Welander 1991, 55) and a Romanesque stone vaulted roof. The original intention of the Norman builders (1086-1100) seems to have been to insert a quadrant vault in the north aisle, open to a high-pitched wooden roof (Welander 1991, 51; Thurlby 1985, 47; Wilson 1985, 71); this intention was abandoned after c. 1100 and the present arrangement installed.

The evidence for the previous intention is to be seen in the north aisle roof space on the east wall. Here there is a wall shaft with a cushion capital which emerges from the 14th-century roof vault and which can be seen in the nave. This shaft was intended to take a quadrant vault, and compatibility with the quadrant vaults over the choir galleries was clearly intended (Wilson 1985, p 73). The shaft is in bond with the pier just to the west of it and also with the first stones of the north aisle wall at this level (Figs 1 and 2). Remains of a string course survive in the nave wall at 31.5 AOD. West of this there is a vertical break in courses and the character of the stonework changes; the rest of the nave wall face is fairly uniform (not drawn in Figs 1 and 2, but visible on photographs). Presumably this break is the junction between phases 1 and 2 of the Romanesque work.

On the outside, the first strip-buttress near the north transept is the only one to have its lower portion without decoration: Wilson suggested that this was phase 1 work, and that the plain lower portion was to take the higher roof-line of the phase 1 north aisle roof. Presumably the remaining strip buttresses in the clearstorey level of the north nave wall are phase 2 work (see Fig 2).

Other buttressing was added later at the west end of the north aisle, encasing the phase 1 evidence almost completely: One buttress has been tentatively assigned to the 13th century (when the nave roof was rebuilt), and the build of the rest of the east wall (Fig 1) is related to the insertion of the arch to the north transept in 1368-73.

Dr Wilson's theory, which places a quadrant arch on the capital in the north-east corner of the north aisle, is reconstructed on Fig. 1. It is also reconstructed on an enlargement of Ansted's drawing in Fig. 3. As Wilson says, 'it is obvious that a quadrant, even of the shallowest curvature, could never have fitted in between capital and roof' (Wilson 1985, 73). The Ansted cross-section (Fig. 3) shows this even more clearly (in Fig. 3 the arch has been drawn as a quadrant). A slightly flattened arch will not fit under the present roof but could fit under a slightly higher roof line (Fig 1). Although Wilson claims to see trace of an earlier roof line on the west face of the north transept, I cannot discern evidence of

this. The east end of the north aisle has been built out towards the west, probably more than once. The present roof slope coping, is certainly higher than the present roof line and may represent a medieval arrangement on a Romanesque line. However, since the phase 1 north aisle arrangement was apparently never built, there is no reason why it should have influenced the roof line. According to Wilson, the Phase 1 design shows that there was to be no vaulting intended over the nave aisles, although there might have been a series of quadrant diaphragm arches.

At the west end of the north aisle roof, the junction between the Romanesque work and the two 15th-century west bays can be seen: the roof trusses here were at a different height.

The wooden roof above the vaults has been many times repaired. Most of the supports consist of a tie beam and lean-to principal rafter with one or two bracing struts. The first three bays at the west end have different trusses: their design dates to the 15th century or later, since these bays represent the 15th century rebuilt west end, but the timbers appear 17th-18th century. East of the buttress, there are 14 trusses, all showing evidence of replacement and/or patching. Numbering from the buttress towards the east end, nos. 1-3 have oak tie-beams which may be medieval but the rest of these trusses are replacements of various dates. Many timbers are reused, many others are relatively recent replacements. Some replacement timbers are pine, some oak. Many carry iron straps and extra strengthening pieces. Trusses 6 and 7 from the buttress and others are recent pine representing the repairs of 1974-6. One of these has been crudely chopped into the 12th century masonry of the nave north wall. The last three trusses to the east are curious: they are different in style (with an extra tie-beam) and in oak: if medieval they have been re-set in the 19th century and iron straps added. There is no sign of any timbers, even re-used, which might date to the Romanesque form of the roof.

The corbels inside the north aisle roof are of interest. Eight large stone corbels high on the south wall of the north aisle (outer north wall of the nave) were originally intended to hold a ridge beam against which the rafters were laid. These corbels cease at the 'junction' with the 12th century work on this wall so they belong to the 15th century rebuilt west end. However they appear to be spaced without regard to the flying buttress which is also 15th century. The flying buttress itself is apparently inserted into this wall, implying two 15th century builds. There is another set of smaller corbels west of the 15th century buttress. These appear not to be part of the Romanesque roof design although this is uncertain.

Another point of interest is the immensely thick (1.7m) wall of the north wall of the north aisle at its west end; this wall returns to normal thickness at a point 9.8m from the west end. The position of this wall return accords with the position of the additional buttress on the south elevation just west of the south porch. This wall return probably relates to the position of a Romanesque western tower.

RECORDS OF PREVIOUS REPAIRS

These notes include details of repairs to the parapet and north nave wall as well as the north aisle roof.

In 1859 the whole of the north aisle roof was stripped, the defective timbers replaced and the whole recovered with Burlington slate. At the same time the stonework of the nave above the north aisle roof was repaired, including buttresses, parapets and pinnacles

(Cathedral Library MS53, p 35). In 1860 the parapet of the nave north wall, above the north aisle roof, was restored (MS 53, p 40). In 1926 the upper portion of the pinnacles at the west end of the north aisle roof were taken down because they were unsafe (CWB 8, June 12, June 19). In 1938 repairs were done to the stonework of the north side clearstorey windows (CWB 11, June to December). In 1954 extensive refacing was done on the north aisle north wall: a considerably quantity of disintegrating sandstone was removed and replaced with 'Tetbury and Painswick stone' (Ashwell, *Chronicle*, vol 1, p 15, Figs 77-86; the photographs make clear the extent of these repairs). The north aisle roof was repaired in 1974-6; the 1849 slates were in good condition although the nails had rusted away. The slates were removed and when put back were insufficient for the whole roof and the last bay to the west was replaced with Welsh slates. Some glass slates were included to let light into the roof. Many of the roof trusses were repaired; the galvanised iron down-pipes of 1859 were reused (Ashwell, *Chronicle*, vol 2).

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LIST OF ARCHIVE DRAWINGS

Drawing

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- 132 N aisle roof, interior E wall, tracings of masons' marks
- 133 E end of N aisle roof, stonework 1:50 approximate position of elevation of W side of N transept
- 134 Plan of N aisle roof, scale 1:50 Astam plan 5848/01A, with annotations from visits to roof
- 135 Field drawing by Richard Bryant of elevation of wall at E end of N aisle roof, 1:50
- 136 Elevation of wall at E end of N aisle roof, transposed onto west elevation of S transept, 1:50
Archive drawing on film. = Fig 1 below.
- 137 Elevation from inside N aisle roof of exterior of N wall of nave, showing details of junction with E wall. 1:50. Archive drawing on film. = Fig 2 below.

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- Fig 2 North aisle roof, part of south wall, superimposed onto north elevation of nave. Scale 1:50
- Fig 3 Copy of Ansted's elevation /cross section of the north aisle and north transept, from Britten 1829. Inset: Wilson's reconstruction of the phase 1 north aisle at about the same scale.
- Fig 4 North aisle roof, photograph (P1010818) of capital and shaft on east wall, remains of string-course on nave wall on the right, and vertical masonry break between phases 1 and 2.

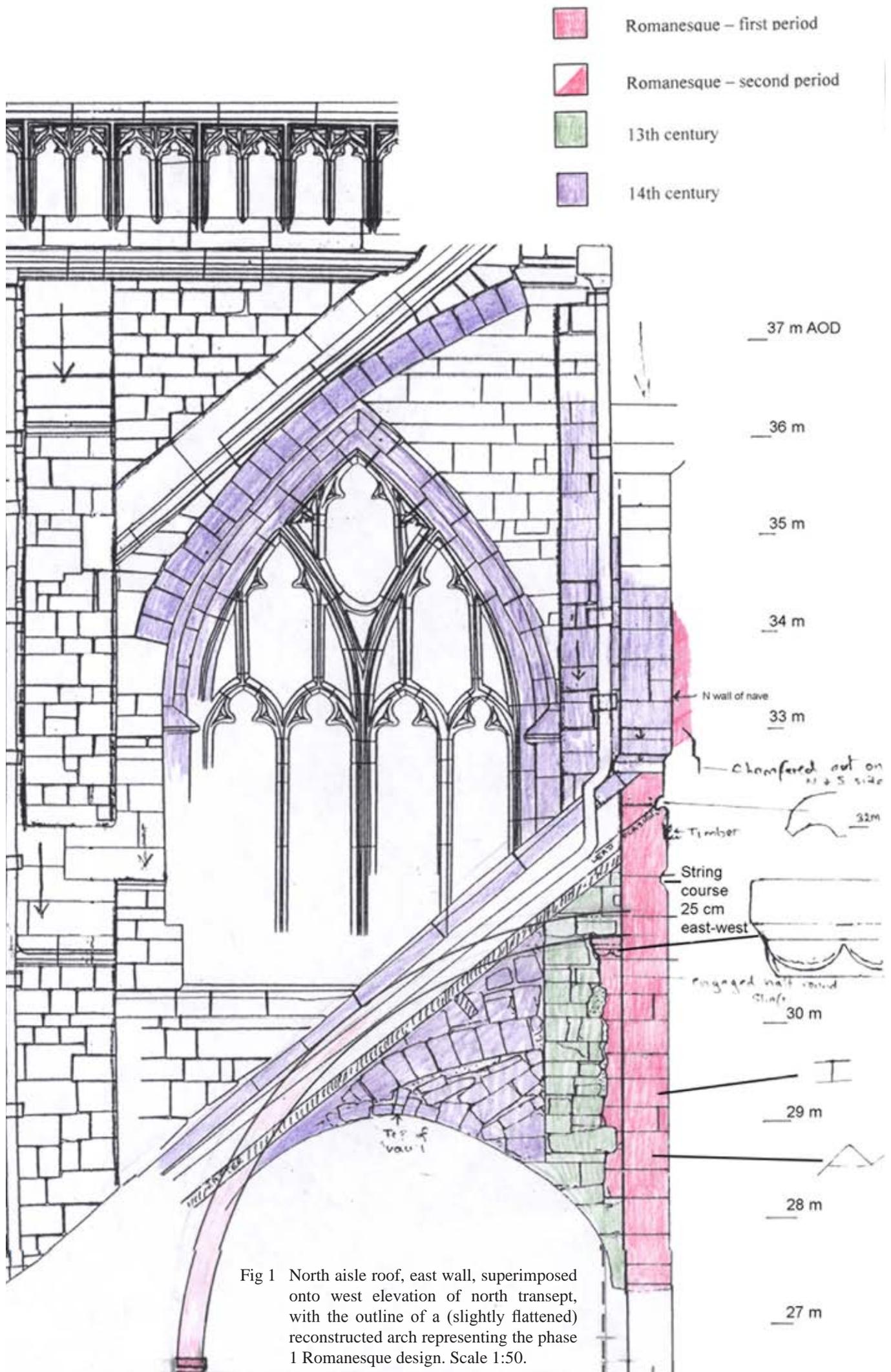


Fig 1 North aisle roof, east wall, superimposed onto west elevation of north transept, with the outline of a (slightly flattened) reconstructed arch representing the phase 1 Romanesque design. Scale 1:50.

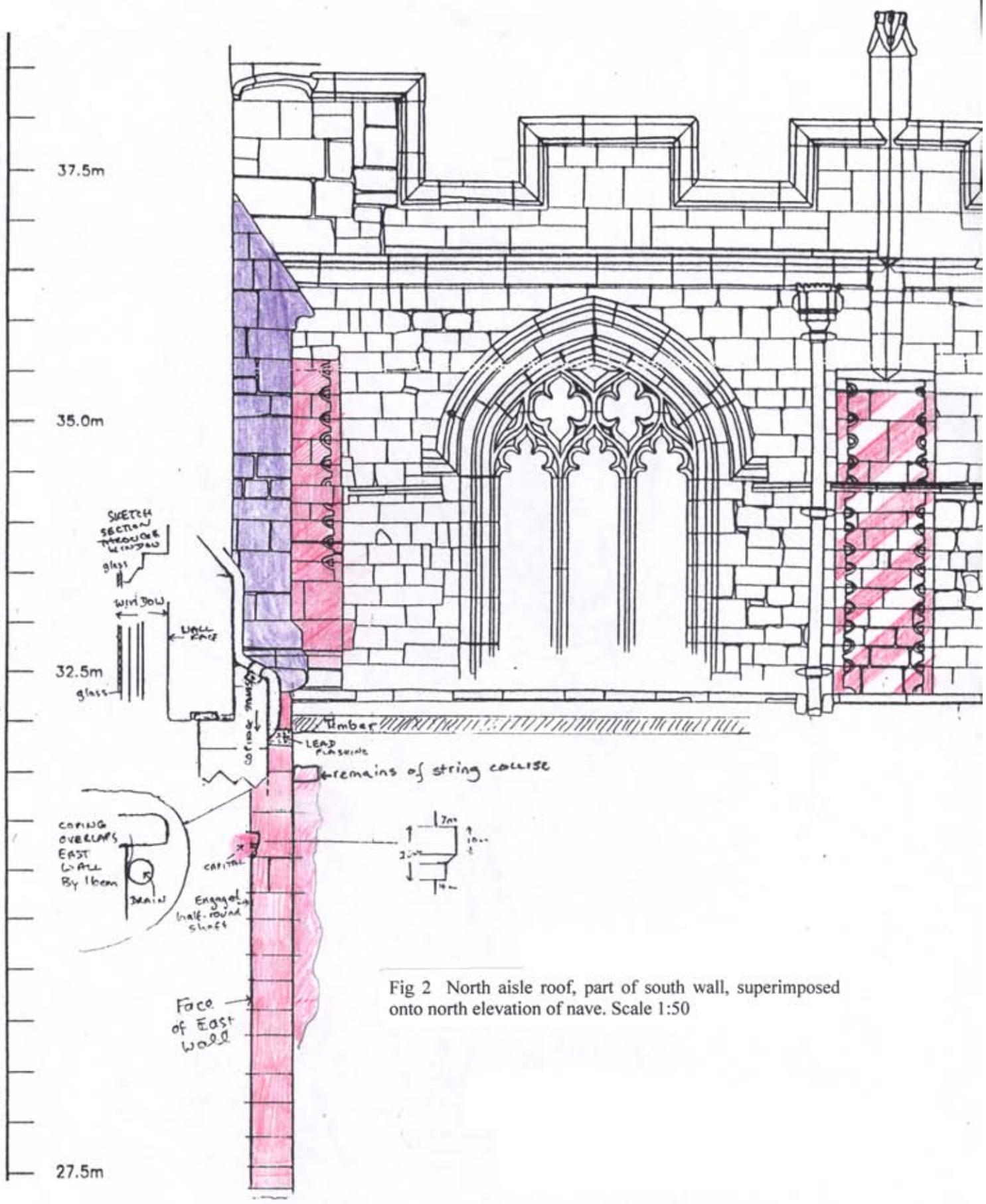


Fig 2 North aisle roof, part of south wall, superimposed onto north elevation of nave. Scale 1:50

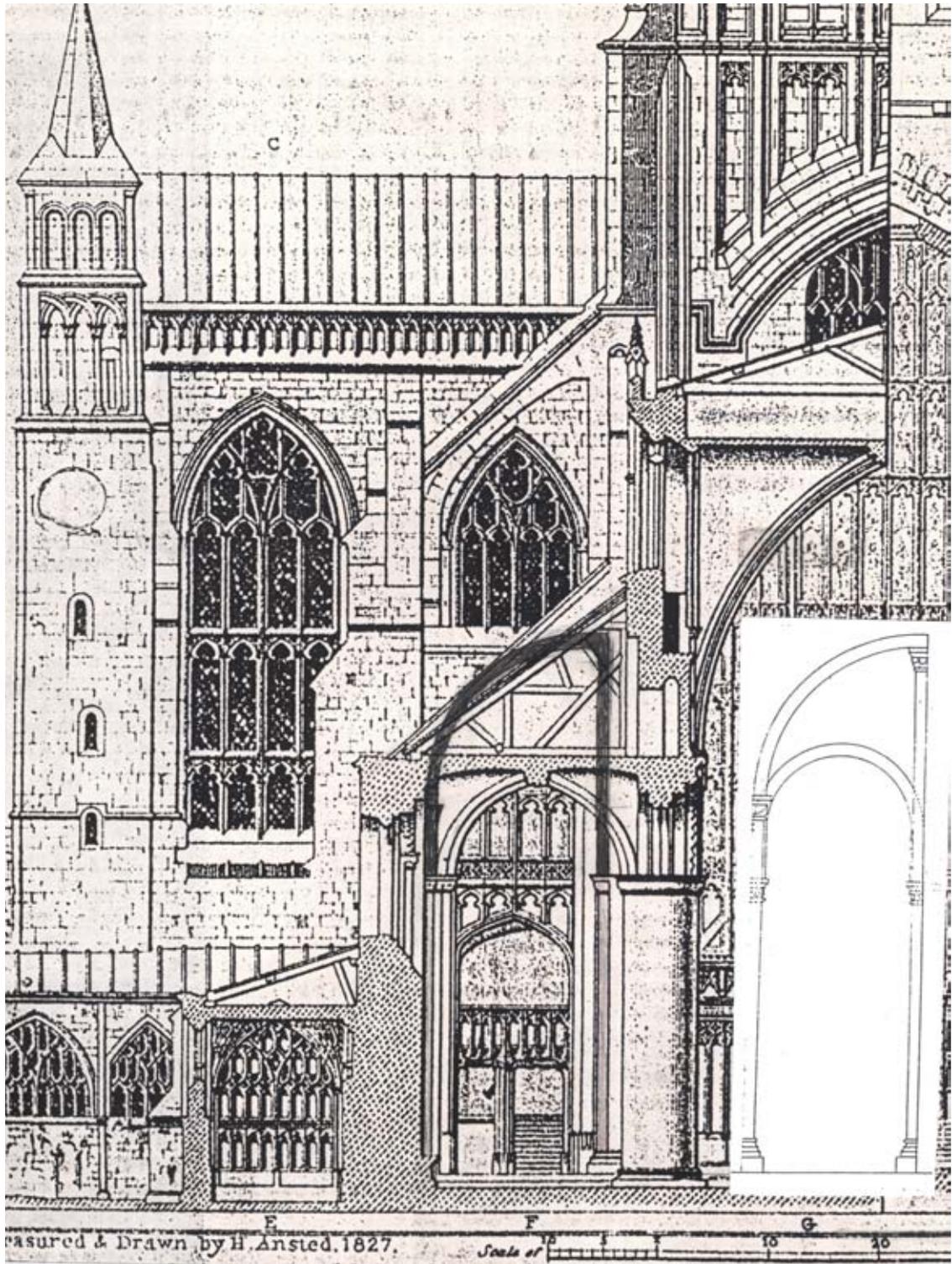


Fig 3 Copy of Ansted's elevation /cross section of the north aisle and north transept, from Britten 1829. Inset: Wilson's reconstruction of the phase 1 north aisle at about the same scale.



Fig 4 North aisle roof, photograph (P1010818) of capital and shaft on east wall, remains of string-course high up on nave wall on the right, and vertical masonry break between phases 1 and 2.