

# PETERBOROUGH CATHEDRAL

## NAVE ROOF AND CEILING: PRELIMINARY COMMENTS

D. F. Mackreth, Revision 1, June, 1995, notes for version 2 at end, July 1995

SUPERSEDED BY ICONCEIL

### Preamble

The Nave ceiling may not have received much more than cosmetic work in both the C18 and C19 (see 3.2-3, below), and inspection from the scaffolding placed under part of Bay 1, counting from the east, reveals split boards, loose nails and damage from beetle, and major conservation work is needed. None of the beetle seems to be active, possibly due to the use of "Silvertown" insecticide by L.T. Moore when he replaced the Nave roof in 1926. Various patchings can be seen, the latest probably dating from the rebuilding of the Central Tower under J. L. Pearson, this part of the ceiling being shut off from the rest of the Nave by boarding.

The ceiling is principally noted for the painting on it. Various dates have been advanced for the work, none of which seems to have been based on the structural history of either the medieval roof or the building history of the Nave. Therefore, the remains of the medieval roof, in as much as they are accessible, should be examined and the sequence and nature of the stone construction be re-assessed. Only when this has been done can the ceiling, and its painting, be placed in a proper context.

The comments are divided as follows:

### The Nave Roof

There are 26 trusses, of which 25 are numbered in chalk in sequence from the east, the 26th truss is now encased in the new fire screen. Trusses 2 and 25 have metal plates bearing the date 1926. Each truss has a pair of scissor braces with three collars made up of pairs of boards attached to the sides of the truss proper, and a centre post. Each truss is supported in iron "shoes" bedded into concrete along the Clerestory walls. The ceiling is structurally independent being hung from these trusses and from timbers run between them. A cat-walk immediately south of the centre posts runs from the West End to the Central Tower. Two smaller cat-walks, one on the north side near the east end and another on the south near the middle, provide a very limited view of the canted parts of the ceiling. The basic information used in the analysis of the roof will be found in Appendix I.

The medieval north-south timbers, where their junction at the angle between the flat and canted sections of the ceiling is preserved, show that the canted members have been sawn through more-or-less level with the top of the horizontal ones. The horizontal timbers would have been the lowest collars of a common rafter roof of the type shown in the cross-section of the Nave published by Britton (1828, pl.14). He shows a scissor brace which does not coincide with the canted section and there is no centre post, the empty joints of which are visible in every surviving medieval collar. Either the roof had been modified or his drawing is inaccurate. As he does not really show the ashlar pieces to which the vertical boards along the sides are attached, the latter is the more likely. The original design was probably very similar to the trusses put up in 1926, themselves reflecting the roof put up in 1834/5.

Running east-west between the common rafters are the considerable remains of seven sets of medieval timbers, to which the ceiling boards are still attached, augmented by modern replacements. The framing for the ceiling was originally carefully thought out and efficient.

The upper surface of the boarding was covered in hessian in 1926, and has now become so denatured that the layout of the boards can be seen somewhat dimly from the top. Few lie flat against the timber framework, but those that do define the lozenges into which the ceiling is divided. The lozenges are filled with boards laid clinker-fashion and overlap the flat boards. These flat-boarded boundary strips do not have parallel sides, the reason for this is discussed below in the section on the painted design.

The articulation of the lozenges does not precisely match the masts dividing the bays. In essence, there are two border half-lozenges per bay, the first two next to the Central Tower fall short of mast 1, and there is progressive creep so that, by mast 4, the two half-lozenges end on the west side and thereafter the difference gets greater until Bay 9, which being wider, the division between the two half-lozenges falls on the east side of mast 9, where the face of the planned west gable of the intended two-towered front would have been. This says nothing about the ceiling, but everything about the roof above which dictated the layout of the lozenges.

The area between the ceiling and the Central Tower was certainly disturbed when Pearson rebuilt that. The ceiling was first designed to suit the C12 crossing arches, as the C14 ones were higher, what is to be seen today probably reflects alterations made then to deal with this problem. At the least, the lowest collar of the common rafter next to the Tower would have to go. Nothing remains of the medieval roof next to the Tower and this is probably why Truss 1 and the lowest part of the medieval common rafter roof do not lie against the face of the Central Tower.

At the other end, the ceiling runs over the western arch. The top of the wall over this is more-or-less level with the top of the Clerestory, and the gap between this wall and the ceiling is closed by old vertical boarding in line with the west face of the arch wall, leaving a shelf open to the Nave.

The 45° cut noted in the common rafter roof element N°9 coincides with the division between Bays 1 and 2. The erection of the roof would have begun next to the Central Tower and the cut is probably the seating for a brace running eastwards up through the roof to steady it, but it may have been a remedial act as this part of the roof displays the greatest degree of lean to the west. The only other jointing peculiarities in Bays 1 to 9 occur in N° 29 and 45. The first lies at about the west side of Bay 3 and the second near the west end of Bay 6. What they represent is unclear, but any sign of a westward lean in the roof stops at N°29 and possibly marks a halt in roofing. Nothing in particular in what survives of the roof can be associated with N°45. Both mark one third lengths of the original 9 Nave bays and there is nothing inherently unlikely in the roof having been put up in three equal stages between the Central Tower and the intended gable of the two-towered front.

The greatest difference in the roof lies at the western end. Although the scantlings of the horizontal timbers vary along the whole of the ceiling, the common measurement approximates to 21/22 by 12cms, until N° 73 is reached. Of the 7 medieval timbers here, 2 only come close to that size. One, N° 76, has the joint on the east instead of the usual west side found east of N° 73; the other, N° 79, has a form of joint only found at this end of the roof. These members all lie over Bay 10 in the structure below. Where the change occurs is not clear: N° 72 is modern and N° 71, at 23 x 13.5, might be counted as being part of the series, but the nature of the joint only really changes with N° 73. The length of roof involved is approximately 9.1m which equates to Bay 10, the extension to the Nave, and the differences in the carpentry show a sufficient length of time had elapsed for the original carpentry team not to be in being: the only true notched-lap joints are at this end. The extension to the roof is, like the bay beneath, almost certainly Benedict's work.

### The Structural Sequence in the Nave below the Ceiling

The roof and ceiling need to be put into the context of the building history of the Nave: the general architectural literature displays a distressing lack of knowledge of the excellent description of the Cathedral by Sir Charles Peers (1906). The bulk of the north side of the Nave and the Clerestory on the south side up to the two-towered front is reliably the work of Benedict (1177-1193), the style of the capitals and bases mark his work out. He is said to have completed the church *usque ad frontem* (Sparke 1727, 99, *aedificavit totam navem ecclesie, opere lapideo, et ligno, a turri chori usque ad frontem*) This could mean only as far as the front, not necessarily including that. The former is preferred as the North Tower of the two-towered design, unlike the South Tower, was only laid out at ground floor level. However, all is not as simple as it may appear. Benedict was abbot for about 15 years and there is no reason to think that his resources were any greater than those which had been avail-

able to his two predecessors who, as the evidence reveals, were assiduous builders. That much might be guessed about Martin de Bec, but the full extent of William de Waterville's work is, in some senses less obvious.

First, it is necessary to understand what the chroniclers meant when they say that X finished Y. John de Seéz began the new church in 1119, by our reckoning (Mellows 1949, 98: *octavo idus Marcij anno ab incarnatione domini millesimo centesimo octavo decimo*), but finished nothing in it. Martin de Bec completed the Presbytery and introduced the monks into it in 1140 (*ibid.*, 105, et *presbiterium ecclesie perfectit et sanctas reliquias et monachos in die festivitatis sancti Petri*, 108, in *novam ecclesiam cum magno honore introduxit, anno ab incarnatione domini millesimo centesimo quadragesimo, et a combustione loci vicesimo quarto*), seven years after becoming abbot: this is part of the measure of how much could be built in a year.

William de Waterville is credited with building the Transepts and three stories of the Central Tower (*ibid.*, 130, *In suo etiam tempore ambe cruces ecclesie, et tres ystorie magistri turris erecte sunt*): at the time the passage was written, the Central Tower was the only one. Benedict, as we have seen, is said to have completed the church up to the front in stone and wood. The latter term is significant when read with the work of the two previous abbots: the work was only finished when the roof was completed. Therefore, Bays 1-9 were roofed by him, but he carried on to the west and of this work only Bay 10 concerns us: that can be assigned to him because of the base mouldings used.

However, the chronicles are too bald: John de Seéz' work consists of the Aisle and Tribune levels of the Presbytery to the Clerestory wall walk, the layout of both Transepts as far as the return foundations for western Aisles, the eastern Chapels of both, complete with vaulting, and the Tribune levels up to and including the springing of their arches. All this can be detected both by the architectural detailing and by the mason's marks. It follows that Martin de Bec's seven years in finishing the Presbytery were spent in building the Clerestory and in roofing it. In effect he did more as he carried the South Transept up to the Clerestory wall walk, and began the lowest row of windows in the North. He probably added a bay to each eastern Clerestory to support his crossing arch, and just possibly enough of the stage above to form a gable for his new roof.

In practical terms, we can see that he carried on building after 1140/1 when the remains of the old church were cleared away. He abandoned the western aisles in the Transepts and carried both right round to and including the two western crossing piers, the architectural detailing reveals this. He also built the outer wall of the South Aisle to define the Cloister in Bays 1 to 7 inclusive, and the return of the north wall through Bay 1: de Bec's work is characterised by very simple capitals. The detailing suggests that he should also have built the South Nave Arcade as far as the east side of Pier 9, but the Aisle vault only as far as the respond 7. And he also built some of the Tribune over, including the pier of the south Tower at this level. This shows that William de Waterville only built and roofed the Clerestory of each Transept, the three stories of the tower: the three new crossing arches should have been part of the first, the blind stage butting the new roofs to north and south the next, the third being the Lantern rising over all. He certainly added to the south Nave Tribune.

This begins to put into perspective just what Benedict found in the Nave when he arrived. There, de Waterville would have had to add at least one bay to each Clerestory to buttress his new tower. On the north side this would have meant adding a bay at each level and the use of his style of capital shows this to have been the case: de Waterville's capitals tend to be sharply angular, employing chevrons and fluted scallops. He also laid out the choir (*ibid.*, 130, *Chorus ordinatus*), which means that, as the later pulpitum was to be in Bay 1, that may have been roofed by him, but it would have been removed when Benedict came as he had other ideas. De Waterville was responsible for the blind arcading in the North Aisle in Bays 2-9 as they use his style of capital, amply on display in the Transept Clerestories, and this shows that the change in the arch mouldings can be given to William de Waterville, and not reserved exclusively to Benedict who built the Great Gate (Sparke 1727, 101, Benedict.. *itaque erexit magnam portam exteriorem, et desuper capellam sancti Nicolai*) in which they occur. He did not build much of the North Aisle arcade for the central part has the developed style of base which can be attributed to Benedict.

De Waterville, however, continued with the twin-towered front which had already been started: de Bec's Pier 8 was designed to support the north-east corner of the South Tower. De Waterville's new style of mouldings above the blind arcading occurs in the South Aisle in Bays 8 and 9, which means that the Aisle and Tribune levels of the finished South Tower occupying Bay 9 were his, as well as the bases for the piers of the North Tower which predate Benedict's work to east and west: The outer wall of the North Aisle here is thickened just as the equivalent is on the south side, and that cannot be Benedict's work.

The ascription to Waterville of the South Aisle wall in Bays 8 and 9 does not rest purely on architectural detail: Bay 9 would have had to be complete at this level to allow the Cloisters to be finished as we are told that he covered them with lead (Mellows 1949, 130, et *claustrum monachorum plumbo coopertum est*). Whether Benedict was responsible for building any of the South Tower up to the Clerestory wall walk level may be doubted, bearing in mind not only his predecessor's obvious involvement, but Benedict's different ideas for the Nave. That the outer wall of the South Tribune in Bays 9 and 10 was demolished by Blore does not help. The work was done to remove the blemish caused by the demolition in the seventeenth century of the abbot's lodging, which joined the Church here.

It follows that Benedict's work in the completing the Nave was not quite as great as the chronicler implies, but the roof must have been his. The marked difference between the roof over Bay 10 and the rest shows that the canted form of the lower surface is also his. The work he carried out in his c.15 years is then directly comparable with that of de Waterville's 20 years, de Bec's 22 or 23 years and the 7 years of de Seéz. If anything, the last built rather more in a year than the others, but the assumption is that all work stopped completely at his death (1125), not to start again until the removal of the pluralist Henry d'Angeli (1128-1133). However, it is possible that the two or three years that Walter the Archdeacon was overseer when the king took the annates, should properly be added to de Seéz' building history.

To summarise the work in the nave, De Bec builds, on the north, bays 1 and 2 of the Aisle Arcades and Bay 1 in the Tribune to support the north-west pier of the crossing, and possibly vaults Bay 1 in the Aisle. On the south, he builds bays 1-9 of South Aisle arcade and begins the Tribune at each end. He, however, only vaults the Aisle as far as Respond 7. He was responsible for the design of the twin-towered front.

De Waterville builds 1 bay on each level on the north to support his three stories of the tower and adds the Clerestory in Bay 1 on the south, as well as carrying on with the Tribune. He also builds the outer wall of the North Aisle in Bays 2-9 and lays out the pier bases for the twin-towered front to match those on the south. This, with the thickening of outer wall of the Aisle in Bay 9 shows that the early design for the West Front was to be continued. He also completed the South Aisle in Bays 8 and 9 and South Tower to the Clerestory at least.

Benedict completes all the Nave to the western transepts, but in two main stages according to the chronicle ("*usque ad frontem*" = up to Bay 10) in the first instance and then continues to the west: the detailing tells us it is Benedict, even if there is no explanation of what the *mirificum opus* was. There is evidence of a halt in his work in the walling immediately west of Mast 8 on the north side above the springing of the Tribune arch. Benedict also built the pulpitum with which should have gone the consecration of the Nave altar indicated in Browne Willis' plan (Willis 1730) and by the Agnus Dei in the ceiling (Panel 4).

The impression given by a cursory inspection of the Nave is that the wooden ceiling was intended to be on permanent display, or until replaced in some way in the natural course of events, probably with another or a wooden vault like the C15 one in the Presbytery. However, as there is considerable evidence that the Nave was not only to have been completely vaulted in stone from the beginning, but work had proceeded a long way *pari passu* with the Clerestories before most of it was removed. It is possible, therefore, that the ceiling was only ever a temporary work.

- 1 The wall ribs for stone webs over the clerestory arcading are part of Benedict's work, but inserted into de Waterville's bay 1 (Irvine Papers, Vol.4, pp.84, 85, 89).
- 2 The wall ribs are pointed, which would suit both the style of vaulting in the central, or nave bay, of the western transepts and was part of the new style familiar to Benedict when prior at Canterbury and in charge of the new choir and presbytery.
- 3 The surviving haunching for the vaults in both clerestory wall walks is part of the original construction: one removed on the south side last century reveals that the ashlar facing on both sides rises over the haunches. One was removed on the north side, the ashlar on the outer wall runs to the floor of the passage, on the other side Persona thought it necessary to introduce new ashlar at the base, obviously there had been none before.
- 4 The springing of the vault for bay 10 from the arch over mast 10 still survives. The ribs have the same section as in the bay to the west.

- 5 The painted ceiling runs over the west arch, an unlikely proceeding, if the ceiling is later than the arch.
- 6 Evidence that every mast in the Nave on both sides had once been provided with triple capitals and the springing of the vault above these, and that all this work was then removed. The dressed-back stonework under the clerestory string is obvious, and so is the use of large stones which do not fit the coursing on either side.

The evidence for the planned vault consists of the following points. Firstly, the presence of wall ribs over the Clerestory arcading, for stone webs were part of Benedict's design, but inserted into de Waterville's Bay 1 (Irvine Papers, Vol.4, pp.84, 85, 89). Secondly, the wall ribs are pointed, which would suit both the style of vaulting in the central, or Nave bay, of the Western Transepts and was part of the new style familiar to Benedict when prior at Canterbury where he was in charge of the new Choir and Presbytery.

Thirdly, the haunching for the vaults in both Clerestory wall walks is part of the original construction. One removed on the south side last century shows the ashlar facing on both sides rising over the haunches. Another removed on the north side revealed ashlar in the outer wall running to the passage floor, the other side Pearson introduced new ashlar at the base, obviously there had been none before. Fourthly, the springing of the vault for Bay 10 from the arch over Mast 10 still survives. The ribs have the same section as in the bay to the west. Fifthly, the painted ceiling runs over the west arch, an unlikely proceeding, if the ceiling is later than the arch.

Sixthly, evidence that every mast in the Nave on both sides had once been provided with triple capitals and the springing of the vault above these, and that all this work was then removed. The evidence was presented as long ago as 1906 by Sir Charles Peers, unfortunately buried in the middle of a long paragraph in a book not usually used as a hand guide to the building. Peers, in dealing with the differences marking the later parts of the Nave, goes on to say:

"But the most important variation is the preparation for a stone vault. That this was not intended when the first bay of the nave clearstory was built is shown by the way that the pointed wall ribs are inserted, cutting into the strings at the springing of the arched openings, while in all the other bays the strings stop against the ribs. The transverse arches of the vault were designed to spring from the usual half-round shaft between the bays, and diagonal ribs from corbels on either side of it, just below the string at the level of the clearstory floor, and it is probable that the vault was actually constructed for some courses above the springing, abutment of a sort being provided by blocks of rough masonry built up in the clearstory passages behind each pier, and still remaining. But the design was not constructionally suitable for vaulting, and the idea was abandoned, all traces of the vault, except the wall ribs and the blocking in the clearstory passages being removed, and the vaulting shafts continued up the wall to the then level of the ceiling, while the corbels were carefully chiselled away, and the wall-face which would have been covered by the vault faced with ashlar." (Peers 1906, 439, b, para. 2).

Attention can be drawn to some specific points. The outer edges of the wall ribs in Bays 1-7 for the first few feet above the string have been chiselled away and then patched in mortar. In the stonework in Bay 8 east of the wall rib is a vertical joint rising from the string for about the same height as the damage to the ribs to the east. The offset from the wall-rib is because the bay here is wider than any other and, therefore, the stone web rising from the capital cannot sit on the wall-rib. The actual profile of the capitals for Peers' corbels can be seen on the south side in Bays 4 - 8 and the east side of Bay 9. The redressing of stones is generally to be seen in all the other masts. The proportions of the corbels to their capitals can best be seen on each side of Mast 7 on the south side. The stones used for the capitals are deeper than the normal courses in the plain walling.

The wall ribs had to be cut away because they rise vertically from the string and the throw of the rib meant that the angle between the web and the wall rib became more extreme the higher the rib rose. In the Western Transepts it can be seen that blocks of ashlar were used at this level and, being straight, the wall-rib had to be cut away to provide a seating. The damage to the wall-ribs should show how much of the vault was actually built. In general terms: about as much as the surviving parts of the diagonal rib attached to Mast 10.

The form of the capitals can be reconstructed, and their source established. The surviving capitals at Mast 10 show how the triple element of mast and corbels were combined under one composite capital and, whatever the date of the western arch, the capitals are Benedict's. The Choir at Canterbury has a high vault which spans every pair of bays in a sexpartite system which means that the design of the springing alternated between a major arch and two diagonals and a minor arch across the main vessel with no diagonal ribs. The triple arrangement rises from a composite capital of the same form as at Peterborough where Benedict accepted what was already there, hence the older style scalloping on the capital and the provision of corbels as all below had been completed.

It follows that the springing of the vault was there before the roof was raised, and the canted form should have been provided to allow working space for the time when the vault could be finished at leisure. The difference between the first 9 bays of the Nave and Bay 10 suggests a break in construction such that mannerisms, if not personnel, had changed. Logically, this should mean that the pause is between the ending of work at the two-towered front and the decision to move further west. However, the Clerestories do not show a break other than the more advanced work of the two full bays in Bay 10 on the north side. Here there is a stylistic advance, all the more remarkable because it is at this level. The same detail does not show on the south side and the answer may be, again, that there was a stock of prepared work for this level already paid for and which was going to be used willy-nilly.

#### The Painted Design

The flat-boarded boundary strips of the lozenges in the ceiling do not have parallel sides. In plan, they form arrow heads without a shaft, each side tapering away to a point at the corners lying on the short axis of a lozenge. The reason for this layout is simple. The main panels stretch from edge to edge of the flat ceiling, the side lozenges run up the canted part and then for the same distance on to the flat section. Because the north-south axes in the two lines are different, there is a short-fall which is taken up by the flat boards, and the points arise naturally as the points of the main panels touch the corners on the short axes of the side panels. This shows that the design of the ceiling was conceived for that shape of roof and could not reasonably have been raised from a flat position under ordinary ties across the nave.

The scaffolding under the eastern end of the ceiling shows various repaintings, most of which would have been to make the patterns more visible from the Nave floor. However, several boards under cross-light show elements of design which are not to be seen from the floor today. There are, for instance, rows of arcs bearing a trefoil on each cusp.

All or some of the sketches of parts of the ceiling sent by Governor Pownell to the Society of Antiquaries of London form the basis of pl.7 in his brief description of the ceiling (Pownell 1789). The bishop of Peterborough told him, in 1773, that the man who had repaired the ceiling about thirty years before [i.e., c.1743] had told the bishop that the whole had been repainted in oil. Several of the figures were entirely crusted with dirt, but became bright with colour when washed using a sponge and the painter had concluded that the medium last used was oil. However, under that a distemper had been used and this had come away in places clear of the boarding. His lordship was reassured that the figures had only been retraced, except in one instance in the third or fourth panel from the west end [Panel 17: the figure wears C18 shoe buckles and is facing in the wrong direction] where the whole figure had peeled off and here he followed his own fancy having nothing else to trust to, but he had attempted to follow the style of the rest (*ibid.*, 149).

Cave and Borenius (1937) record that Charles Layton received £30 for painting the ceiling of the Nave in 1835, obviously on the occasion of the replacing of the Nave roof by Ruddle in 1834/5 (Irvine Papers, vol. 11, p.94. M169). The layout of the subject matter of the ceiling is given in Appendix II.

Panels 1 - 5 form a set, as it were, containing the Agnus Dei and St. Peter, the fish and lions in Panel 1 may be an allegory of Christ supported by the evangelists. The whole possibly indicates in symbolic form life and death and includes a Janus' head which would add to this. Then follows a grotesque, St. Paul and a crowned figure in a mandorla, the latter two facing each other. These all belong to the eastern end of the Nave where they can be related to the west end of the monks' choir, the pulpitum and the Nave altar. Thereafter there is a sequence of five pairs of crowned and mitred figures, each member facing his partner, none has a ready identity.

The lesser elements of the ceiling add something to this scheme. Firstly, the foliage panels alternating with those with proper subjects, have repeats in the zone up to the space between Panels 6 and 7, thereafter, there is seemingly no overall pattern. In S13 is a female figure blessing a monk who is offering something, the whole looks suspiciously like a straight-forward donor subject.

The only figure on the side lozenges, apart from musicians, which seems to have an unequivocal meaning is N15 where the compasses and square should surely belong to Geometry. This suggests that either the Quadrivium was part of the overall scheme, or that all the Liberal Arts were intended to be there. Måle (1961, 80-86) gives a useful conspectus of the typical attributes at a later date and, with the best will in the world, only the following extra Arts can be tentatively identified: N11, Grammar; S11, Rhetoric; S15, Arithmetic all forming pairs. However, the subject of Panel 20 could well be Prudentia in her four-wheeled chariot. The four Arts surround the possible donor subject in S13, and that does not seem like coincidence. As the putative Prudentia is to the west, perhaps the remaining three could be accounted for. Opposite S13 is the organistrum player who does not form part of the instrumental sequence away to the east: Music? The remaining two Arts should lie to the west in N17 and S17. Here on the south side is a figure with a flaming head in a chariot who might conceivably represent the sun and so Astronomy; opposite is a figure who might be playing or demonstrating something who could stand in for Dialectic. Most of these figures show a great deal of over-painting and there is as yet no means to tell what has been rendered invisible to the distant viewer. If there had been any intention to represent the Liberal Arts in full, then it belongs to the third and fourth parts of the roof.

Setting that aside for the moment, in crude terms, these four sections of roof relate to the four noted in the roof structure. The first three each cover a third of the Nave counting that as being 9 bays long. The fourth belongs to the evident extension to the roof which matches the extension to the nave through Bay 10. There are points of transition, one being Panel 6 containing the last grotesque at the east end of the ceiling. The next obvious one should be Panel 18 as it bridges the two established major stages in the construction of the Nave under Benedict and the marked change in the roof (1.10). If the ceiling was put up progressively as the roof was erected, there should be a transition in Panel 12, but it would not necessarily be noticeable, if the iconographic scheme had already been established for bays 1 to 9. But if some of the Liberal Arts and Prudentia have been correctly identified, this sectional treatment falls to the ground, the ceiling being fixed after the building of Bay 10.

#### Discussion

Logically, once Benedict had put the pulpitum up, the east end of the Nave could be cut off from the building works to the west, and it may be that a temporary screen was put up immediately west of that, the Nave altar, or even at Mast 3. In other words, the Nave roof could also be erected in stages. The analysis of the remains of the medieval common rafter roof (see 1.8-9 above) suggests that the roof may indeed have been raised in three main sections, later to be extended over Bay 10.

William de Sens' new Choir at Canterbury may have had a great influence at Peterborough: abbot Benedict was prior there immediately before translation, and in intimate contact with the building works (Caviness 1982, 51, n.25) and he certainly had ideas about the construction of his new charge at Peterborough (Mackreth 1994). The precise form of vault Benedict intended cannot really be known: what is in the middle bay of the Western Transepts belongs to the extension to the Nave and is probably stylistically more advanced than the work already removed to the east. However, the evidence for the vaulting show it to have been laid out in a ribbed quadripartite scheme.

At Canterbury the height of the high vault is greater than that of the Clerestory. Semicircular arches were laid out across the diagonals, matched to pointed ones across the width, and semi-circular ones were run over the Clerestory bays. This means that, at a primitive level, a straight-forward tie-beam common rafter roof such as the C12 ones in the Transepts at Peterborough would not do. At Canterbury, the spring for the Choir vault rises from the capitals of the Triforium, and not from the string over that. At Peterborough, the Clerestory is higher. Simple measurement suggests that a semi-circular diagonal rib raised from the string under the Clerestory would have been hardly less than 20ft high and, while its intrados would hardly have been higher than the Clerestory itself, it could not have fitted under a roof based on tie beams. This suggests that the canted roof form was designed to accommodate the planned vault and masons.

The springing eastward from Mast 10 should be co-aeval with that to the west. The curvature of the completed rib is not the same as its beginning, and the alignment of the one rising from the north-west corner changes above the level of the initial springing. If these signs have any value, then they may indicate that at one time the central vessel of the Church presented a continuous series of the beginnings of vaults. As it seems unlikely that the west arch was added to springers, it may be that every mast in the Nave had its main arch in position. This would make sound common sense as the diagonals would receive extra support and the main arch, being thicker, would have had less of a tendency to fall, although the surviving stubs of vaulting at Glastonbury show how much could be built without support (Thurlby 1995, figs.3, 234). The thickness of such arches cannot be judged by the one at the end of the Nave as it is at present. That was a closing wall in the same sense that the crossing arch at the east end was. There was a stay in building such that the west arch was the terminal of what was to the east, and not what it seems at present, the closure of what lies to the west.

The likely sequence of events is that Benedict had decided on vaulting the Nave when building the Clerestories was taken up again. He decided to extend the church to the west, and continued his preparations for the vault into Bay 10. Possibly because the design of the new West Front had not been worked out in detail, and the number of years needed to build was large, the decision was taken to remove the unfinished vaulting and to ceil the Nave so that its formal use could begin. This would give point to the Chronicler's comment on *finishing* the Nave. The ceiling ran to the end of the roof and the open end of the nave would have been boarded up.

When the final form of the Western Transepts had been decided on, some years after the death of Benedict, the boarding was taken down and the arch across the Nave built complete with the springing for diagonals to east and west. And this accounts for the strange relationship between that arch and the ceiling. At this stage, there was every intention of vaulting the Nave, and this may always have been part of the plan for the church. In that sense, the ceiling could be described as being temporary, only becoming permanent as the opportunity, even the will, for putting vaulting in the Nave receded.

One thing that may appear alien to the modern mind is the thought that anyone would undertake the complete decoration of a ceiling which was probably seen at the time as being temporary, only needing the insertion of vaulting to really complete the Nave. However. Until that time, the Nave was part of the House of God and it would be inconceivable that it would not have a cover entirely appropriate to the carrying out of the *Opus Dei*. This may seem like special pleading, but it can be tested by considering the treatment of the west end opening, to us, into the Western transepts, but in liturgical terms providing an entrance to the body of the church proper. There can be seen the apparent anomaly of a finished arch with walling up to the top of the Clerestory coupled with the springing of the diagonal ribs for the aborted vault. The walling over the arch has pairs of blind-arches designed to remove the baldness of plain ashlar. Such blind arches were already to be seen at the time in the Crossing over each of the four Crossing arches: although the remains seem to have been found in only one spandrel during the demolition of the Tower last century, it would be perverse to deny that they had been present in to all the other spandrels.

The ceiling has been variously dated, as far as can be seen, on purely art-historical grounds and with little thought to its context in terms of the building of the monastic Church: neither Cave and Borenus (1937) or Nördstrom (1955). The first pays little attention to the actual building, the second obviates discussion by assigning the entire design to the direct influence of Robert Grosseteste. The painting is not independent of the boarding which carries it. The tapered plan of the flat boards bounding each lozenge bears floriated ornament on its long axis. The design of the boarding should mean that the painted design, and all its iconography, had been determined before the boards were put up: it is illogical to suppose that the painted scheme was devised to suit existing plain boarding which just happened to have been laid out like that.

The secondary nature of the design of the ceiling may be shown by the lack of fit between the layout of the lozenges and the architectural elements supporting the roof. While such considerations may not have weighed over much with people at the time, it is a fact that the roof was laid out without reference to the spacing of the bays beneath and, it has been argued, was intended to fit behind a gable in the proposed twin-towered West Front. A point of some value when it is clear that the whole roof, whether erected in one or three stages, over Bays 1-9 is the work of one set of workmen, while that over Bay 10 indicates a significant break in that programme. What cannot be asserted is that it occurs at the end of Bay 9 and that the Nave was temporarily closed there while Bay 10 was under construction, along with the west terminations to the Aisles and Tribunes facing out into the as yet unbuilt Western Transepts. Only when that had been achieved could a more effective temporary end be created. The roof for Bays 1-9 may well have been ready on the ground some time before being hoisted into place and a break in the steady development of the original design may have been all that was necessary to account for the changes observable in the roof over Bay 10.

There is one subject in the ceiling which, to the writer, points unequivocally at the person who was responsible for the decoration of the ceiling. But it needs to be demonstrated that there is a concerted scheme in which there is not really anomalous part. Nördstrom rightly thought that there must be an overall scheme, but did not perhaps go far enough to establish how thorough-going it might have been. Nordström identifies Panel 1 as a fish, = water, lions, = earth, and wishes these to equal

space (*ibid.*, 243). In S1 and N1 he sees two of the four rivers of paradise which also mean the cardinal points; as the number four occurs on Panel 1 in the form of the lions, he wishes to have the six dimensions as described by Grosseteste, up/down/one side/other side/before/ behind. For good measure he cites N19 and S19 as seasons, allowing N1 and S1 also to be seasons (*ibid.*, 244). This, however, arises from his dating of the ceiling to the time of Grosseteste, should it be earlier, this idea may prove highly fallible.

In Panel 2, the Janus represents future and past, or January (looking to last year and to this year to follow). If Panel 1 is Space, this one is Time (*ibid.*, 244). Panel 3 becomes the Beast or Devil representing Death to contrast with Panel 4 which is obviously Eternal Life, and as the swastika is a symbol of life, this becomes everlasting life in Hell to contrast with everlasting life in Christ (*ibid.*, 244). For him the man-eating monster and the dragon in the side panels S3 and N3 are a plain Devil and a country far away, (*ibid.*, 244-5). To the writer, it seems more likely that they represent parts of the torments of Hell to go with the subject of Panel 3 between them: they are the results of choosing the ways of the Devil. As Nordström was intent on demonstrating that the whole ceiling was based upon an optical effect supposedly deriving from bishop Robert de Grosseteste's scientific works, further detailed discussion of his views is not really necessary. What follows is an exploration of the design of the ceiling as a series of inter-related didactic strands.

Panels 1 - 6 form a set, and can be interpreted as forming the equivalent of a type and an antitype, both arranged east-west. Panels 1-3 are Eternal Life to the east in Panel 1 represented by Christ supported by the gospels; Panel 2, the Janus, giving the choice between that and, to the west, Eternal Damnation represented by the figure in Panel 3, the latter accompanied by symbols of Hell on either side, N3 and S3. The next set is The Agnus Dei to the east in Panel 4, St. Peter facing east in Panel 5 turning his back on Ignorance, Jewry and Damnation to the west in Panel 6. Here N5 and S5 are further representations of Hedonism and Meaningless Pleasure. The imagery here is heightened by extra details in the Agnus Dei: the Blood from the pierced Breast being caught in a chalice, the symbol of the Blood of the New Testament giving Everlasting Life.

However, Panels 5 - 7 also form a set, with Panels 6 - 8 forming a reflection of Panels 4 - 6. In other words, the intellectual heart of the scheme is here with three intermingled subjects, best approached by looking at Panel 6 - 8 first. The crucial relationship is between Panel 7, with St. Paul, and Panel 8, the crowned figure on an arc of heaven set in the firmament, framed by a mandorla, and holding out a vessel with a flame. The last is placed across the framing mandorla as though being passed to St. Paul, and here one notes that both St. Peter and St. Paul are not nimbed but have flames around their heads. These represent the flames of the Holy Spirit. The mandorla is almost exclusively used for Christ and the Virgin Mary, only very rarely used for saints ascending into Heaven (Rickert 1954, 230). Here I suspect that we have God the Father passing the Holy Spirit to St. Paul in a mystical representation of the road to Damascus. This, with the Agnus Dei, will satisfy the unstated requirement that the Trinity would be represented.

The choice of representation is a figural device to match the kings to the west, to show that the Giver of the Holy Ghost was the mightiest of kings. The crown is unusual, but almost certainly it is to tie this subject into the series to the west. God is shown beardless in a page dealing with Adam and Eve in the Pantheon Bible of the second quarter of the 12<sup>th</sup> century (Bib. Vat.: Dodwell 1971, pl.165). Whether this is due to it being a result of being "historically" aware, Christ not having been on His mission, or to other reasons is almost beyond knowing. However, He is beardless in a scene in which He heals the blind (*ibid.*, pl.106: Rouen, Bib. Mun.) dating to the end of the 11<sup>th</sup> century and numbers seem to increase the further back one goes (*ibid.*, pls.71,72,68,66,64,61,56 etc.).

What ties this pairing with that in Panels 4 and 5 is the grotesque between them. It can be identified with the ways of error, of sin, of ignorance and, in the case of the owl, of Jewry (Mâle 1961, 45). At a primitive level it shows the monks below that they have forsaken the dangerous and luxurious ways of this world, and is to be read with Hell in the next represented by Panel 3. The pairings show Peter turning to Christ having witnessed both the Passion and the Resurrection, and Paul putting the Jewish persecutor's rôle aside to follow the one True Light: both Saints turn their backs on Jewry, the owl sitting atop the whole image being the most important element. Both Peter and Paul are related to aspects of God in a way which represents how the Church on earth saw them in Heaven.

The side panels between Paul and the other two aspects of God are players of instruments suitable for the Church, the psaltery and organistrum (N7 and S7), so heightening the drama here. They represent true harmony and their placing suits that of the other two who represent essential discord associated with the Devil. The next pair in N9, an angel blowing a trumpet, and S9, a figure playing a violin-like instrument, between the first ecclesiastic and the first ordinary king, should not be adventitious, especially the angel with the trumpet. Psalm 150 calls upon all to praise the Lord, with the sounds of the trumpet, psaltery, harp, timbrel, stringed instruments and organs, and with cymbals. The ceiling hardly has a full set, but the harp had been taken up already, and to have four more of the seven here, when the timbrel and cymbals were hardly common instruments is surely enough. Here is the music of the spheres carefully related to the figure in the mandorla. The angel, sitting on the arc of Heaven, should be blowing the Last Trump and occurs at the east end of the main run of kings and ecclesiastics.

The placing of Agnus Dei in Panel 4 reflects the functional aspect in the church below as it marks the site of the Nave altar. The subject was to be seen from the east which suits a monastic church, as that had no particular public function. Nordström sees St Peter with keys as Ecclesia contrasting with Luxuria in Panel 6 (*ibid.*, 244). However, he also wants Panel 6 to be a burlesque on knighthood, the goat and owl being associated with lechery and paganism (*ibid.*, 245), and coupled with the beasts playing musical instruments in S5 and N5 representing aspects of Luxuria (*ibid.*, 246). But there is greater point to Panel 6 if it can be related to St. Paul in the way suggested, and in interpreting the figure holding sceptre and burning lamp in the mandorla as altogether more Holy than Nordström's unconvincing and colourless argument for a King of the Wise (*ibid.*, 248).

The central section of the roof contains a sequence of five pairs of crowned and mitred figures, each member facing his partner, none has a ready identity. St. Paul begins a sequence in which the figures sit in cusped frames save for Panels 8 where there is a mandorla and 11 and 19 where there is only a plain lozenge, as in Panels 1 to 6. These five pairs must bear some relationship with the pair to their east. St. Paul, then two archbishops followed by three bishops, each with a crowned figure. The king in the mandorla is obviously the most important of all six. If the archbishops and bishops are instructing, as the raised hands should indicate, then St Paul, holding the drawn sword upright, is not teaching, even though he holds a book in the crook of his left arm, it is closed. However the crowned figure with the gesture of the hand holding the sceptre might be: all the kings to the west are passive.

Panels 9-18 are alternating regal and ecclesiastical figures without attributes and Nordström draws attention to Honorius of Autun (*fl.* 1090-1120) who likens the beams (*triguae*) in a church, repelling rains and storms, to prelates of church who defend by their teachings, and the other beams (*trabes*) tying the house together to the princes of the world who protect the Church. The first part of the image derives from a commentary Honorius wrote of the Song of Songs (*ibid.*, 248-9). One may note that one of the books given to the Monastery by Benedict was *Cantica Canticorum, glosatus* (Sparke 1723 98).

There is little to be got from trying to identify precisely who the ecclesiastics and rulers may have been, but there are two archbishops at the east end, and this, again cannot have been by chance. In terms of English hierarchy, the two churchmen should be the archbishops of Canterbury and York, but if we proceed from heaven to earth, then the first pairing ought to be pope and emperor, Panels 9 and 10. This should mean that the next archbishop would be of Canterbury, Panel 11, highly appropriate if Benedict was responsible for the ceiling. In that case the subject of Panel 12 would be the king of England, Henry II. Beyond that it would not be wise to go. After all, what was probably most important was to have six pairs, counting Panels 7 and 8.

One of the most important aspects of the ceiling is the division into two of the whole into the teaching of the Church in the matters of spiritual welfare and the teaching of the sciences, or earthly learning, as better ways to understand and praise God. Therefore, we have the Trivium and Quadrivium, not perfectly laid out it seems as a set of three and a set of four. The only figure on the side lozenges, apart from musicians, which should have an unequivocal meaning is N15 where the compasses and square would normally indicate Geometry. Mâle (1961, 80-86) gives a useful conspectus of the typical attributes at a later date and, with the best will in the world, only the following extra Arts can be tentatively identified: N11, Grammar; S11, Dialectic; S15, Arithmetic all forming pairs. However, there is S13 in the middle of this section of the ceiling.

The panel has a large female figure of benign aspect in the act of blessing a much smaller, adult, figure standing on a pedestal and holding something in his right hand. The attitude of his left hand is one of offering, here then is a donor. Normally, one would expect a donor to be kneeling, but the panel is lozenge shaped and this is impossible, the pedestal being introduced to make the subject more readable. His placing on the ceiling should mean that he is identifiable and associated in some way with the building. The beardless figure is tonsured and robed in a garment overlaid by another, shorter one. The colours, as they are today, do not add up to a black

monk, yet monk he must be. But how an abbot of Peterborough, with a great jurisdiction, a place at court and sixty knights, would have dressed is unknown, but it may be that he did not appear in public in an ordinary habit. In any case in 12<sup>th</sup> century painting sobriety of dress is not to be expected (Rickert 1954, pl.54). Historically, an abbot so prominently placed in the nave could only really be Benedict (1177-1193), no other abbot is credited with having done as much there as he. The figure to whom something is being presented is not a saint as such, she is not nimbed, yet she sits on an arc which should represent a Heavenly seat. She is not the Virgin as she is not veiled, nor it there an infant Christ. Almost the only equation left is with Ecclesia.

We have to bear in mind that the ceiling is in a church which had no satisfactory artificial lighting. The windows were almost certainly glazed in the manner of the time: little light by modern standards would have entered the nave. The ceiling could only have made its effect with bright colours undimmed by centuries of dirt and over-painting. The subjects had to be relatively crudely painted to show well from over 60 feet away. In such terms, all that can be said is the object in the donor's hand is that it is roughly triangular in outline and could be described as a gable with a cross on top and with ornament, as it is at present seen, reminiscent of crockets. In such terms, the conclusion should be that Benedict is presenting the newly completed nave to Mother Church: Benedict *aedicavit totam navem ecclesie, opere lapideo, et ligno, a turre chori usque ad frontem.*

To return to the Liberal Arts, Nordström detected elements of this scheme, and he had difficulties because of the eight panels available for seven subjects. However, making S13 a donor subject removes this difficulty. The awkward detail is that the Trivium is not followed neatly by the Quadrivium. Nordström made S13 represent Logic because he presented the Trivium first and then the Quadrivium. This is logical, the second group making the wheels for Prudentia's chariot. It is strange that he did not recognise her as the subject of Panel 20. Opposite S13 is the organistrum player who does not form part of the instrumental sequence away to the east: Music? The remaining two Arts should lie to the west in N17 and S17. Here on the south side is a figure with a flaming head in a chariot who might conceivably represent the sun and so Astronomy; opposite is a figure who might be playing or demonstrating something who could stand in for Rhetoric. Most of these figures show a great deal of over-painting and there is as yet no means to tell what has been rendered invisible to the distant viewer. The disruption in the Trivium and Quadrivium could be, for all one knows, because the donor may have deliberately chosen to be surrounded by the Arts closest to his intellect. In that case, Benedict preferred Arithmetic, Geometry, both associated with building, Music, Grammar and Rhetoric, the last two being suitable for a writer.

#### THE LAYOUT OF THE SUBJECTS OF THE PAINTED CEILING

The subject matter in the panels is given below beginning with the central panels:

Panel 1 - four lions and a fish	(C & B pl.91,2)	Bay 1	
Panel 2 - bust of Janus	(C & B pl.92,1)		Bay 1/2
Panel 3 - beast carrying a hammer and spear with banner	(C & B pl.92,2)	Bay 2	
Panel 4 - Agnus Dei	(C & B pl.91,3)	Bay 2/3	
Panel 5 - St. Peter, facing Panel 4	(C & B pl.92,3)	Bay 3	
Panel 6 - monkey on goat holding an owl	(C & B pl.91,4)	Bay 3/4	
Panel 7 - St. Paul, facing Panel 8	(C & B pl.92,4)	Cusped	Bay 4
Panel 8 - king, sceptre and cup, facing Panel 7	(C & B pl.92,5)	Mandorla	Bay 4/5
Panel 9 - archbishop VI/God on book, facing Panel 10		Cusped	Bay 5
Panel 10 - king, sceptre, facing Panel 9		Cusped	Bay 5/6
Panel 11 - archbishop with COBLEY 1834 on book and R <sup>D</sup> LAYTON 1834 SEXTON on hem facing Panel 12	(C & B pl.92,6)		Bay 6
Panel 12 - king, sceptre, facing Panel 11		Cusped	Bay 7
Panel 13 - bishop, facing Panel 14		Cusped	Bay 7
Panel 14 - king, with scroll, facing Panel 13		Cusped	Bay 8
Panel 15 - bishop, with tablets GOD...., facing Panel 16		Cusped	Bay 8
Panel 16 - king, sceptre, facing Panel 15		Cusped	Bay 8/9
Panel 17 - bishop, C18 shoe buckles, facing Panel 16 (C & B pl.92,7),	Cusped	Bay 9	
Panel 18 - king, sceptre, facing Panel 17	(C & B pl.92,8)	Cusped	Bay 9
Panel 19 - an eagle, facing Panel 18			Bay 10
Panel 20 - woman in 4-wheel court, Prudentia	(C & B pl.92,9)	Cusped	Bay 10

The next section has the basic subjects of the side panels. Note: N1 or S1 etc. lie immediately west of Panel 1 etc.

N1 head and foliage	(C & B pl.93,1)	S1 beast and foliage	(C & B pl.94,1)
N2 foliage		S2 foliage repeated below:	R
N3 monster eating man	(C & B pl.93,2)	S3 monster	(C & B pl.91,5)
N4 foliage	R	S4 foliage	R
N5 ? hog with violin before 1834	(C & B pl.93,3)	S5 ass and harp	(C & B pl.94,2)
N6 foliage	R	S6 foliage	R
N7 psalter player, Cusped	(C & B pl.93,4)	S7 symphony player	(C & B pl.94,3)
N8 foliage		S8 foliage	
N9 angel blowing trumpet	(C & B pl.93,5)	S9 violin	
N10 Foliage		S10 foliage	R

N11 Rhetoric		(C & B pl.93,6)	S11 Grammar	(C & B pl.94,4)
N12 foliage	R	(C & B pl.94,9)	S12 foliage	
N13 Musica (C & B pl.93,7)			S13 monk donor and Ecclesia?	(C & B pl.94,5)
N14 foliage			S14 foliage	
N15 geometry		(C & B pl.93,8)	S15 Arithmetic	(C & B pl.94,6)
N16 foliage			S16 foliage	
N17 Dialectica		(C & B pl.93,9)	S17 Astronomia	(C & B pl.94,7)
N18 foliage			S18 head and foliage	(C & B pl.94,8)
N19 lion rampant			S19 figure and foliage	

---

BIBLIOGRAPHY

Britton 1828

*The History and Antiquities of the Abbey, and Cathedral Church of Peterborough*, John Britton, London, 1828.

Cave and Borenius 1937 (C & B 1937)

The painted Ceiling in the Nave of Peterborough Cathedral, C. J. P. Cave and Tancred Borenius, *Archaeologia* 87, 297-309.

Caviness 1982

Canterbury Cathedral Clerestory: the Glazing Programme in Relation to the Campaigns of Construction, Madeline H. Caviness in Coldstream and Draper 1982, 46-55.

Coldstream and Draper 1982

*Medieval Art and Architecture at Canterbury before 1220*, Nicola Coldstream and Peter Draper, The British Archaeological Associations Conference Transactions for the year 1979, with the Kent Archaeological Society, Leeds, 1982

Dodwell 1971

*Painting in Europe, 800 to 1200*, C. R. Dodwell, Pelican History of Art, Harmondsworth, 1971

Irvine Papers

Bound in 12 volumes in the Cathedral library.

Mackreth 1994

Abbot Benedict and Canterbury, D. F. Mackreth, *Friends of Peterborough Cathedral* 1994, 4-9.

Mâle 1961

*The Gothic Image, Religious Art in France in the Thirteenth Century*, Émile Mâle, London, 1961.

Mellows 1949

*The Chronicle of Hugh Candidus, a Monk of Peterborough*, W. T. Mellows (ed.), Oxford, 1949.

Nordström 1955

Peterborough, Lincoln, and the Science of Robert Grossetete: a Study in thirteenth-century Architecture and Iconography, Folke Nordström, *Art Bulletin*, 37, 1955, 241-72.

Peers 1906

Peterborough Minster, C. R. Peers, VCH, Volume 2, 1906, 431-447.

Pownell 1789

Observations on Ancient Painting in England, Governor Pownell, *Archaeologia* 9, 141-156.

Rickert 1954

*Painting in Britain, The Middle Ages*, Margaret Rickert, Pelican History of Art, Harmondsworth, 1954.

Sparke 1727

*Historiae Anglicanae Scriptores Varii*, Joseph Sparke, London, 1727.

Thurlby 1995

The Lady Chapel of Glastonbury Abbey, Malcolm Thurlby, *The Antiquaries Journal* 75, 1975, 107-170.

VCH

*A History of Northamptonshire*, Volume 2, The Victoria History of the Counties of England, London, 1906.

Willis 1730

*A Survey of the Cathedrals of Lincoln, Ely, Oxford and Peterborough*, Browne Willis, London, 1730, 475-540, 553-4.

5 Recommendations

- 5.1 The only practical independent dating aid is dendrochronology. Samples should be taken from the surviving horizontal members of the medieval roof in at least three sectors: one near the east end, one in the middle and one, possibly two, from the roof over Bay 10. We do not know how long some of the timber may have been in store and Benedict's rule is short enough (1177-1193) for it to be hardly likely that the timbers would prove the work to be his. The roof over bay 10, being demonstrably the *latest* part, is probably the place to over sample if anywhere. That would provide the framework for the boards which themselves offer the probability of having the latest date. Again, it may be that Bay 10 would be the place to concentrate on, if the iconographic scheme demonstrates that the subject matter here is of a piece with the rest, with a check at two points further east: the repeated foliage pattern at the east end suggests that, even if the design of the ceiling is one, it was created in stages.
- 5.2 Paragraph 3.1 drew attention to an element of over-painted design not to be seen in the ceiling as it is at the moment. A detail like this shows how important it is that the whole ceiling should be recorded at a scale sufficiently large for all the painted detail on each board to be noted. The chief problem will be to establish an accurate enough base for detailed drawings to be related to it. The cost of preparing this, possibly using some kind of laser technology, may be relatively high, but if the layout of the present ceiling could be put into a CAD program, the savings in being able to pluck out, as it were, the sections for recording will be considerable. However, the aim of the recording should be to produce a "hard copy" and not rely on computer storage. Any survey of the type of wood, extent of damage, ancient and modern, could be tied to such a base. This may be the last opportunity for more than a century for a record to be compiled, and, once it is, it will be invaluable for in the future. Only after a complete, detailed, record has been made will it be possible to discuss the subject matter of the ceiling in real terms. The occasion should not be missed.

APPENDIX I: ANALYSIS OF COLLARS OF COMMON RAFTER ROOF

These are numbered in chalk from the east and the position of the roof trusses is noted. > indicated where the point on the long axis of the central panels fall, coupled with the number. Dimensions in cms, depth coming first.

W or E indicates on what face the central joint is cut. All seen were pegged.

Styles of central joint:

- z = straight north side, taper south side: bare-faced dovetailed lap joint.
- y = opposite hand, bare-faced dovetailed lap joint.
- x = taper both sides, dovetailed lap joint.
- w = straight north side and part of south, taper top of south, early notched-lap joint?.
- v = opposite hand, early notched-lap joint.
- u = either z or y, but with extra cut at top of tapered side to create a notched-lap joint.

Dimensions of joints in cms: a = width at top; b = east-west; c = depth; d = width at bottom.

Dimensions are, generally, to nearest 1cm owing to awkwardness of reach

D = drift to W in cms of collar from crudely estimated position of toe of main rafter.

> 1 etc. mark the point of the relevant central lozenge in the ceiling.

M1 etc. indicate. the approximate position of the Mast between bays.

1	31 x 13	W	only part of top seen: ?z	a, 8.25; b, 5.5			
Truss 1							
2	22 x 14	W	present, but not visible		D = 12		
3	21 x 11	W	z	a,9; b, 6; c, 12; d,12	D = 18	> 1	
4	21 x 13	W	z out of reach		D = 32		
Truss 2							
5	21 x 12	W	z	a, 9; b,6; c,14; d,12.5	D = 12		
6			modern				
7	21 x 12.5	W	w	a, 9.5; b,5; c,14; d,12	D = 16	> 2	
Truss 3							
8	20 x 13	W	v	a,8; b,5.5; c,11; d,11.75		D = 13	M1
9	21 x 12	W	z	a,9; b,5.5; c,11.5; d,11	D = 7		
			45° cut on E next N side of joint,	a,8; b,5			
10	22 x 11	W	x	a,7.75; b,2.25; c, 12; d,10	D = 5		
Truss 4							
11	21 x 12.5	W	w	a,8; b,5; c,12; d,12	D = 7	> 3	
12			modern				
13	21 x 12	W	w	a,9; b,5.5; c,12.5; d,11		D = 10	
Truss 5							
14	21 x 12	W	z	a,8.5; b,5.5; c,13; d,11	D = 7		
15	20 x 12.5	W	z	a,9; b,5.5; c,13; d,11.5	D = 13	> 4	M2
16	21 x 11.5	W	w	a,8; b,6; c,13; d,12	D = 10		
Truss 6							
17	19.5 x 12	W	w	a,8.5; b,5.5; c,11; d,12	D = 17		

18	23.5 x 12.5	W z		a,10; b,5.5; c,13; d,13	D = 5		
19	25 x 12	W w		a,9; b,6; c,12.5; d,11	D = 7	> 5	
Truss 7							
20	23 x 111.5	W z		a,9; b,6; c,13; d,12	D5		
21			modern				
22	19 x 12	W w		a,9; b,6.5; c,12; d,12	D = 11		
Truss 8							
23	22 x 12	W z		a,7.5; b,5; c,13; d	D = ?	> 6 M3	
24	21 x 12.5	W w		a,10; b,6; c,13; d,13	D = ?		
25			modern				
Truss 9							
26	21 x 12		W lost: north half is MODERN				D = 12
27	21 x 11.5	W w		a,8.5; b,5; c,13.5; d,10.5	nil	> 7	
28	24 x 12	W w		a,8.5; b,4.5; c,14.5; d,?	D = 6		
Truss 10							
29	18.5 x 12.5	W w	cut in top \_/\_	a,?; b,?; c,12; d,12	nil		
30	19.5 x 12.5	W w		a,9; b,5.5; c,13; d,12	nil		
31			modern				> 8 M4
Truss 11							
32	22 x 13.5	W z		a,9; b,6; c,13; d,11	nil		
33			modern				
34	21 x 12	W w		a,8.5; b,5; c,13.5; d,?	nil		
Truss 12							
35			modern				> 9
36	21 x 11	W z		a,8; b,5; c,11; d,11	nil		
37			modern				
38	21.5 x 19.5	W z		a,8.5; b,5.5; c,11; d?	nil	M5	
Truss 13							
39	21 x 13.25	W w		a,7; b,4.5; c,11.5; d,9.5	nil	> 10	
40	22 x 11.5	W w		a,7; b,5; c,12; d,10	nil		
41			modern				
Truss 14							
42	22 x 12	W z		a,8; b,5; c,12; d,10.5	D = 5		
43	22 x 14.5	W y		a,7.5; b,6; c,14; d,11	D = 5	> 11	
44	19 x 12	W w		a,8; b,5; c,12; d,10	nil		
Truss 15							
45	21 x 13.5	W z	\_/\_ cut away	a,?; b,4.5; c,11; d,10.5	nil		
46			modern			M6	
47	21 x 12	W z		a,8; b,6; c,13.5; d,?	nil	> 12	
Truss 16							
48	20 x 12	W w		cannot reach		nil	
49	22 x 13	W w		a,9; b,5; c,13; d,12	nil		
50	23 x 13	W z		a,9.5; b,5; c,14; d,13	nil		
Truss 17							
51	21 x 12.5	W w		a,8; b,4.5; c,12.5; d,10	nil		
52	21 x 13	W w		a,7.5; b,5; c,12; d,10	D = 5?	> 13	
53	22 x 13	W z		cannot reach		nil	
Truss 18							
54			modern			M7	
55			modern				
56			modern				> 14

## Truss 19

57	21.5 x 12	W z		joint mostly lost: N ½ modern
58			modern	
59			modern	

## Truss 20

60	23 x 12	W v		a,9; b,6; c,13; d,10	nil	> 15
61	20 x 14	W z		a,10; b,6; c,12; d,13	nil	
62	21 x 11.5	W w				

## Truss 21

63	21 x 12	W w		a,8; b,6; c,11; d,10	nil	
64	23 x 14	W x		a,8; b,5; c,10; d,10	nil	> 16 M8
65			modern			
66	22 x 12	W w		a,8; b,5; c,12; d,?		nil

## Truss 22

67	22 x 12	W w		a,7.5; b,6; c,13.5; d,10.5		nil
68			modern			> 17
69	21 x 12	W v		a,10; b,4.5; c,12; d,10.5		nil ½ap

## Truss 23

70	22 x 12	W w		a,8; b,6; c,14; d,10	nil	M9
71	23 x 13.5	W w		a,6.5; b,5.5; c,12; d,9	nil	½ap
72			modern			> 18
73	17 x 16	E y		a,12; b,4; c,9.5; d,15.5?		nil ½ap

## Truss 24

74	22 x 16.5	E u		a,12; b,6; c,9.5; d,13	--	
75	22 x 16	E y		a,9.5; b,6; c,7; d,11.5	nil	
76	21.5 x 13.5	E y		a,9; b,5; c,11; d,13	nil	> 19
77			modern			

## Truss 25

78	21 x 16	E u		a,11; b,6.5; c,12.5; d,13		nil
79	21 x 13	W u		a,11.5; b,5.5; c,9; d,13.5	nil	
80	22 x 17	W u		a,12.5; b,6; c,10; d,13.5		nil > 20
81		half covered by fire screen cladding, re-used			M10	

## Notes for Revision 2

Nordström's analysis of the iconography of the ceiling does not tidy away all the bits and pieces. For instance, his explanation of S1, N1, S2 and N2 falls because he cannot really make up his mind whether he is dealing with the four rivers of paradise or images of the four seasons (Nordström 1955, 244). The two pairs are fundamentally different, which is not what one would expect, if all four are related. The east end is difficult and he may well have as good an explanation as any other so far, but to have missed the subject of Panel 20 ..... etc. Måle source for chariot and four wheels.

## BENEDICT'S WEST FRONT

The great imponderable is what the design of the west façade would have been. Can we expect that, at the least, the wall walks would have been returned across the interior, the Tribune being converted to one? Is the basic re-use of stone in Bay 10 at this level an indication that the stonework has been re-arranged to run east-west instead of turning a corner? That may apply to the south side, but should not to the north where the bases belong to the same level within the Western Transepts. Whatever the case may have been, there surely was a stay of execution until the abbot had decided what he would do. His sources could not have included Lincoln for the version of western transepts there had not come into being, and it is this which is the real invention of his front, not any supposed triple-arched portico. There is, however, Ely and here there may be more of a parallel, as it has a chapel at each end, and that *may* have been the chief purpose, except both provide great spaces and it is the processional use which could have been a more important feature. Bury St. Edmunds' monastic church has not survived in a good enough state to be truly useful, but the plan (Bond 1905, 150.3) does not really point to western transepts as they are at the other two places. The real point may be that there were western chapels set north and south of the nave aisles.