

Glastonbury Abbey: The NE Crossing Pier



Archaeological Survey of the standing fabric - 2005

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Summary

Further investigation and analysis following on from the previous reports in this series has allowed the theoretical model for the construction sequence of the eastern arm of the great church of the abbey to be further refined:

- comparison between the transept masons' marks and those at Wells Cathedral tends to confirm the hypothesis that the Wells 'Chilcote break' coincides with the great fire of 1184 at Glastonbury, and that masons were being called from Wells to Glastonbury in its aftermath

- there is the suggestion of a slight break (identifiable in the coursing of the respond) at the height of the apex of the aisle vault, matching that identified in the south-east crossing pier, and suggesting a brief hiatus while the vaults were turned

- the level of the wooden wedges found on the south crossing pier (now interpreted as being left from the forced termination of building in 1189) coincides with the end of the use of Dundry stone in this part of the building; the lack of Dundry stone above the aisle vaults on the north side suggests that work may have been a little more advanced on the south side of the crossing at this time - perhaps as a result of the need to build up the lower parts of the south transept to form the north wall of the conventual buildings east of the cloister

- the existence of an original doorway, blocked soon after construction, in the north wall of the north transept's eastern aisle suggests that (as in the south transept at Wells) an access doorway for processions was created at the point where the choir was complete but the transept was still under construction

Fragmentary remains of the high-level circulatory system in the choir were identified in the western jamb of the west clerestory window of the choir, suggesting that this was of the same pattern as that at St Davids Cathedral.

The matching traces of the great pulpitum and rood beam recorded on the south-eastern crossing pier were identified on the north also. The scars left by the screen at the west end of the north choir aisle are very similar to those of the south aisle, and show that they were created at the same time.

The chapels of the north transept retain a wealth of traces of former fittings, including evidence suggesting a refitting of the chapel of St Thomas associated with the creation of a rich tomb - probably that of Abbot John of Taunton (d.1291) - against (and partly within) the north wall. Screen-work for this chapel and that to the north has left scars on the entrance piers. Extensive traces of medieval painted decoration survive on the south

wall of St Thomas' Chapel and on the entrance arch and east window head.

Graffiti on the north east elevation at the base of the northern crossing pier suggests that a scaffold (perhaps erected to assist in the demolition of parts of the crossing) was erected in 1638. One or more volleys of musket shot have been fired at the south elevation of the nave and western lady chapel, probably in June 1643, when the Parliamentarians Edward Popham and William Strode assembled 3,000 militia at Glastonbury to halt the advancing royalists under the Marquess of Hertford.

The extent of W.D. Caröe's repair has been plotted, though this is complicated by Caröe's reuse of medieval stone mixed into the new work - it seems likely that he was reusing material retrieved from excavation by Bond.

1 Introduction

1.1 The circumstances of the report

1.1.1 During the summer of 2005 conservation of the fabric of the north-eastern crossing pier, north transept chapels and north choir aisle wall of Glastonbury Abbey provided scaffolding access to these areas of the ruin for the first time since the early 1990s. As part of the programme of work an archaeological survey of this fragment of the building was commissioned by Alan Thomas, RIBA, the architect for the Abbey.

1.1.2 Findings were initially plotted onto 1:50 scale drawings prepared by Alan and Ann Thomas, Chartered Architects [Drawing Nos. 262/62-64 and 74 for the high work of the pier and 67-73 for the choir aisle and transept chapels], and these site drawings are bound with the current report. A photographic survey was undertaken by Carrek Conservation prior to the commencement of work; this was not duplicated as part of the archaeological record, but detail photographs illustrating the archaeological findings have been taken and are being scanned to CD to form part of the archive - an index of these is included as Appendix 2.

1.1.3 The numbered divisions and headings in this report are (as far as possible) the same as those in the report on the south crossing pier [SCP 2005], to assist the reader in collating information on those aspects of the structure which are symmetrical across the eastern crossing arch.

1.2 Previous surveys

1.2.1 The standing fabric of Glastonbury Abbey has not been exhaustively surveyed in the past. Rev. Robert Willis first analysed the structural remains in 1866,¹

¹ Willis 1866 - see p.36-7 for his consideration of the remaining fragments of the crossing, and p.43 for Bere's scissor arches.

and Frederick Bligh Bond described much of the ruin in his '*Handbook*'.² Bond certainly had access to the repair scaffolding erected for the 1908-10 campaign under W.D. Carøe, so his observations on the crossing piers are detailed and generally correct.³

1.2.2 Unlike the southern crossing pier there is little or no direct evidence of the erection of repair or maintenance scaffolding on the northern pier in the 1930s - there is no graffiti, and no photographic evidence has so far come to hand. However, W.A. [Bert] Wheeler, Clerk of the Works at Wells Cathedral recorded work on this part of the abbey in the 1930s and 1940, when cleaning and limewatering was undertaken. The one clear indication of major post-Carøe repairs in this area of the ruin is the presence of a large ashlar patch on the north wall of St Thomas's Chapel, inscribed with the date '1969'.

1.2.3 Between August 1991 and February 1992 cleaning and conservation was undertaken by Sue and Lawrence Kelland on the surviving masonry of the junction of the north eastern angle of the choir with the transept. Work was divided into two phases, beginning with the choir aisle and crossing pier, this being followed by the conservation of the interior and exterior of the chapel of St Thomas Becket (the southern chapel of the north transept). The present author was able to visit the site only once during this campaign of conservation, to advise on the recording of the polychromy in the transept chapel, and no archaeological report was commissioned.

² Bond 1910a.

³ This can be proved since Bond's second report on the excavations includes a photograph taken by him of the excavation of the Edgar Chapel viewed from the NE crossing pier [Bond 1910b, Pl.II, facing p.110.]. Bond and Carøe, however, were not on good terms (Tim Hopkinson-Ball, pers. comm.)

2 The North-Eastern Crossing Pier

2.1 The Late 12th / Early 13th Century Fabric

2.1.1 Introduction

2.1.1.1 As remarked in the previous report in this series the form of the original fabric has been masked by the remodelling of the choir under Abbot Monington, the construction of a scissor arch against the western face of the pier, and the reconstruction of the northern margin of the masonry under the direction of W.D. Caröe in 1909-10.

2.1.2 The form of the late twelfth century crossing

2.1.2.1 See paragraphs 2.1.2.1-2 of previous report.

2.1.2.2 The form of the carved capitals referred to in SCP2005 holds true on the northern pier also, with a mixture of archaic and stiff-leaf foliage being found in the arcade, but only stiff-leaf in the triforium and above. It is also of note that the archaic leaf is not found in the Dundry stone carving of the south-west door to the cloister in the south wall of the nave, suggesting that this section of the circuit of the walls of the great church was not erected contemporaneously with the corresponding parts of the choir. Thus work can be seen as progressing from east to west, with the lowest parts of the nave aisle wall belonging to the pre-1189 phase, but postdating the choir aisles. Assuming that the unfinished state of the carving of the south Lady Chapel doorway is the result of the 1189 hiatus, and that the two doorways were carved successively, then the final switch away from the archaic leaf style seems likely to have occurred around 1187, well before the forced pause in the works precipitated by the death of Henry II.

2.1.2.3 The use of blue lias in the Lady Chapel may be an aspect of the deliberately retrospective style of this building, since lias inserts are not present in the crossing piers or choir aisles/transeptal chapels, first appearing in the transept

clerestory. Donovan and Reid date the introduction of lias inserts in Somerset church architecture to the 1180s (with the Glastonbury Lady Chapel),⁴ but they do not take into account the finds of material from the Abbey of Henry of Blois from excavation at the Abbey - perhaps because at the time they were writing the fragments were incorrectly identified as being of Tournai marble. Abbot Henry of Blois has long been seen as instrumental in the introduction of colour-contrasting stonework in English architecture, his championing of Tournai (in use by 1147 for the Gundrada slab) and Purbeck marble (used at his residence at Wolvesey Palace, Winchester, between 1141-54) having been discussed by Zarnecki.⁵

- 2.1.2.4 While the use of blue lias string-courses, shafts, capitals, annuli and bases in the Lady Chapel may have been part of the 'antiquing' of the new building, the effect may have been to create a fashion to which the abbey itself had to respond. No lias appears in the remnants of the arcade or triforium of the great church, but it is introduced in the clerestory windows, where shafts, bases, annuli, and capitals are all cut from the material. It is possible that at the point where economic constraints rendered Dundry stone unavailable that the builders turned to the locally available lias for a carving block that could take detailed sculpture - hence its appearance immediately above the point where Dundry stone disappears.
- 2.1.2.5 The position of the lower annulus in the clerestory windows of the transept speculated upon in SCP2004 (Section 2.1.2.5.) is confirmed by the survival on the southern jamb of the south window of the north transept, where the shaft beneath this is also preserved, together with the majority of the southern shaft of the blind opening to the south.
- 2.1.2.6 Where the inner order of the eastern crossing arch has been lost the southern face of the outer order bears a slight rebate against which it was fitted.

⁴ D.T.Donovan and R.D.Reid, 'The Stone Insets of Somerset Churches' P.S.A.N.H.S., cvii (1963), p.60.

⁵ Zarnecki 1986, p.160.

2.1.3 The building sequence

2.1.3.1 The course heights and geology of the north-east pier

2.1.3.1.1 The characteristics of the fabric of the Phase 1 [1184-9] construction - relatively shallow course heights [generally in the range of 17-28 cm], diagonal rather than vertical tooling, and the use of Dundry stone for the carved elements of the building - are also present in the north-east pier and the transeptal chapels, although the use of Dundry stone appears to be considerably more restricted than in the Lady Chapel and the southern crossing pier.

2.1.3.1.2 As stated in the previous report, the findings outlined here should be regarded as provisional until more precise and detailed investigation becomes possible.

2.1.3.2 Forms of tooling

2.1.3.2.1 As on the south-eastern crossing pier all observed instances of tooling on 12th century ashlar block are diagonally cut boaster marks.

2.1.3.3 Block sizes and course heights

2.1.3.3.1 As with the south-eastern crossing pier (where the course heights of the north elevation were recorded and analysed) here those on the south elevation were measured to provide a direct comparison both with its southern counterpart and with the coursing elsewhere in the building. The average course height over the lower 60 courses of the piers is 23.88 cm [on the south-east pier] and 22.49 cm [on the north-east pier], an overall difference of only 1.4 cm,⁶ strongly suggesting that (as would be expected) the two crossing piers belong to the same construction phase, and that the conclusions advanced in the context of the south-eastern pier [Section 213.35] also hold true for the north-

⁶ If the course heights are taken on the respond itself, rather than on the plain ashlar to the west, then the average for the 60 courses becomes 23.85 cm., or a mere .03 cm. different to the south pier.

eastern one - that there is no major hiatus in construction during the building of the choir up to the springing of the vaults.

2.1.3.3.2 As with the southern pier courses of 30 cm and over are exceptional. To the west of the respond only one (immediately below the capital of the crossing arch, at 33.25 cm) exceeds 30 cm, and only three (two at 29.5 one at 29 cm) approach it; the respond itself, however, occasionally unifies a pair of courses on the adjacent jamb, so that here there are three further courses over 30 cm (32 cm, 34.5 cm and 32.5 cm) and two of more than 29 cm - all these occur at or above the height of the aisle vaults.

2.1.3.3.3 As on the southern pier the course heights have been measured from the plinth to the abacus of the crossing arch and analysed in groups of ten and five to ascertain whether there are significant variations in the course heights, in particular whether there is a significant increase towards the top of the pier similar to that seen in the south nave aisle wall.

Sets of five courses	Average	Sets of ten courses	Average
95	19		
108.5	21.7	203.5	20.35
127.75	25.55		
117.75	23.55	245.5	24.55
103.5	20.7		
135	27	238.5	23.85
120.25	24.05		
111	22.2	231.25	23.125
108.75	21.75		
90	18	198.75	19.875
100.5	20.1		
131.25	26.25	231.75	23.175

2.1.3.3.4 Again, as in the southern pier, although there are variations in the course heights, these do not show anything like the increases observed in the nave or at the top of the south transept clerestory. The lowest fabric has slightly shallower coursing (as is also seen in the south pier), but apart from a dip in

the course heights near the top of the pier the coursing is even more consistent than that of the southern pier, and suggests once more that the piers are the product of a single, fairly rapid building campaign.

2.1.3.3.5 Course heights were taken for other areas of the plain ashlar, but perhaps the most significant indication of the contemporaneous relationship between the fabric of the two surviving crossing piers and their associated masonry is the fact that the number of courses in both the triforium (in the blind masonry of the east elevation) and the clerestory (from the base to the springing, above which the north clerestory has been destroyed) of the transept is identical - 17 in the clerestory and 28 in the triforium. In these areas of the fabric, also, courses of 30 cm occur only rarely - one course of 30.5 cm in the ashlar within the triforium super-arch, one of 29.5 cm on the east elevation of the triforium.

2.1.3.4 Variations in the masonry of the crossing pier

2.1.3.4.1 As on the southern pier there are suggestions of sub-phases in this first campaign of construction.

2.1.3.4.2 A break was observed in the synchronisation of the coursing of the double roll of the respond with the body of the pier, which occurs between 8.2425 m and 9.3625 m above the present ground surface - a similar height to that noted in Section 2.1.3.4.2. of the previous report on the south-eastern pier (where it occurs at 7.95 to 8.79 metres). It was noted in the context of the south-eastern pier report that the height of the apices of the choir aisle vaults lies at approximately 8.6 metres, just below the height at which the south pier respond comes back into register, and near the centre of the height of the north pier respond's mismatch.

2.1.3.4.3 While the height of this break on the northern pier might suggest that the work on the north side of the choir/crossing was slightly in advance of that to the south, the distribution of the Dundry stone component of the northern pier could be used to argue that its construction lagged behind that of the south side.

2.1.3.4.4 Dundry stone is much more difficult to identify on the south elevation of the north-eastern pier, largely as a result of the more uniform patination of the surface which obscures the colour difference between the two stone types. Furthermore the carbon deposition also tends to obscure the differences in the surface texture of the two stones. Nonetheless, the comparable areas of the northern pier have been analysed in the same way as those of the southern pier presented in the previous report [in section 2.1.3.4.5.]:

Sets of 5 courses	Percentage of total	No. of rolls	Sets of 10 courses	Percentage of total	No. of rolls
?1	4%	1			
3	12%	3	4	16%	4
5	20%	5			
3	12%	3	8	32%	8
5	20%	2			
5	20%	5	10	40%	7
-		-			
-		-	-		-
1	4%	-			
-		-	1	4%	-
?1	4%	1			
1	4%	-	2	8%	1

2.1.3.4.5 One noteworthy feature of the distribution which is not obvious from the table is the extent to which Dundry stone in the north eastern pier is concentrated in the choir arcade respond and the vertical roll moulding to the south-west of it. All but two of the stones in the lowest 30 courses lie in the arcade respond or the south-eastern angle, and only five in total, lie in the western two thirds of the south elevation of the crossing pier.

2.1.3.4.6 Both within this analysis of the northern pier, and from observations in the rest of the northern masonry, Dundry stone appears much more heavily concentrated in the lower parts of the structure. Unlike the south transept triforium, for instance, (where the hood moulding and toothed moulding of the super-arch are of Dundry), there is little of the stone above the string at the base of the north triforium, the last height at which it appears consistently in the northern fabric being the corbel table of St Thomas's Chapel - though it is sufficiently consistent in the vault ribs to suggest that the north aisle vaults were turned before its use was curtailed.

2.1.3.4.7 Thus taking the use of Dundry stone as an indicator of the 1184-9 campaign of construction under Ralph fitz-Stephen it may be that by the King's death in July 1189 the work at the Abbey had reached the triforium on the north, and the base of the clerestory on the south side of the choir, the work on the south side of the church being a little more advanced because of the necessity of building up walling to abut the monastic buildings to the south.

2.1.3.5 The evidence for the Choir / Transept building break, and the 1189 hiatus.

2.1.3.5.1 The 1189 hiatus - the evidence of the wooden wedges

2.1.3.5.1.1 It was expected from the inspection of the southern crossing-pier masonry that small wedges would be found in the plain ashlar work of the east wall of the north transept triforium, since a number of these were noted in the south transept [as indicated in Section 2.2.3.4. of the previous report]; however, no trace of any such features was seen. It was speculated in the SCP 2005 report that these were original wedges used during the fixing of the stones, and that they might have survived because they were in a concealed roof-space. However, their restriction to one discrete area of masonry, and the spatial position of that area of the building, may allow us to speculate that they owe their survival to the cessation of work in 1189.

2.1.3.5.1.2 Adam of Domerham's account of the event simply states that '*...the work stopped, because no funds were forthcoming to pay the wages of the workmen*', giving the impression of a fairly sudden cessation. The state of the carving of the south doorway of the Lady Chapel would tend to support this assumption of a sudden termination of the work, since the first two sculpted vesicas at the western base of the arch have been left only partly carved, with the foliate panels roughed out, and the third and fourth vesicas merely outlined on the stone - clearly the carver has simply collected up his tools and left the site.

2.1.3.5.1.3 The area where the wooden wedges remained lies at the top of the wall of the triforium on the east elevation, and, in the model suggested for the construction of the Abbey in the report on the south-east pier, this represents the last area of building before the masons' yard abandoned the use Dundry stone for fine carved and moulded work, which is one of the defining characteristics of the first phase of construction. The evidence accumulated in the study of the crossing piers suggests that the end of the 1184-1189



Signs of the hiatus reported by the chronicler Adam of Domesday following the death of Henry II in July 1189.

The carving of the south door of the Lady Chapel (left) remains incomplete - with only two (of the eight projected) figural vesicas nearly completed in the second order, and the foliate spandrels between them just begun. It gives the impression that the carver simply packed up his tools and left.

The small wedges at the level of the base of the clerestory of the south transept (above) appear to be those put in by the fixer masons when the stones were laid, but they were never taken out after the mortar set. In both cases the masons leaving the site after the money for wages ran out in 1189 could be the cause.

phase of building lies at or near the string course between the top of the triforium and the base of the clerestory, and the distribution of the wedges would therefore lie in the last few courses beneath this line.

2.1.3.5.1.4 What seems to have happened, therefore, is that the masons working on the first phase of construction had only recently set the stone in this area (in the summer of 1189) and had left the mortar to cure before removing the wedges, but the finances of the Abbey in the aftermath of the king's death on 6 July 1189 led to the whole workforce being laid off suddenly and before the wedges were removed. At some later point - probably within a year or two, once the cash had begun to flow again - work restarted, but the wedges (by now firmly fixed in the hard lime mortar) were cut off flush with the wall-face, and once the triforium was roofed there was no need whatever to remove them. All the wedges which had been fixed into the western side of this wall would have been removed by the masons, plasterers or painters from the new workforce, since here they would be more clearly visible in the 'show elevation' of the transept.

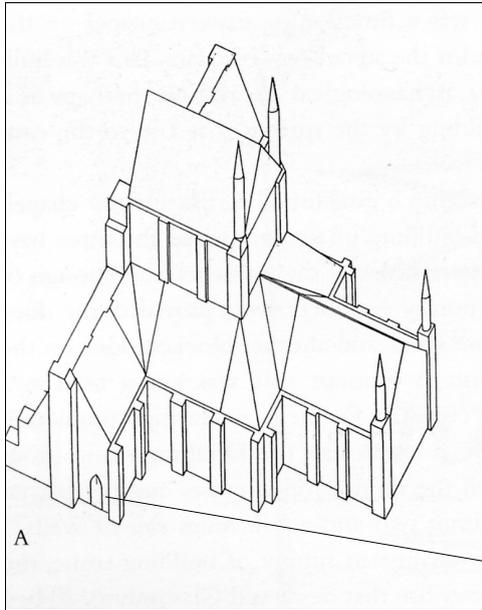
2.1.3.5.2 The coursing of the north choir aisle and transept east chapels

2.1.3.5.2.1 In order to provide a firm basis for the hypothesis that the two sides of the choir were built up together, and that the eastern aisle of the transept also formed part of the same campaign of construction, the course heights in the two western bays of the north choir aisle (the wall-face ashlar east of this point having been destroyed), and the courses of the north wall of St Thomas's Chapel were measured and analysed in the same way as those of the south choir aisle (presented in Section 2.1.3.3.5. of the previous report):

	S average	Choir W	Choir W-1	N Chapel
Bench or plinth to string-course	23.3	23.17	23.17	23.2
String to capital [or 8 courses]	20.43	20.31	20.31	19.75
Abacus up for 9 courses [or 9 courses]	22.05	21.78	21.94	23.83
Upper wall	24.63	24.28	25.75	25.17

- 2.1.3.5.2.2 The table first presents the average course heights for the four western bays of the south choir aisle at four successive heights, followed by the comparable average course heights for the western bay of the north choir aisle, the second bay from the west, and the north wall of St Thomas's Chapel (the measurements for the latter being taken from the surviving medieval walling rather than the 1969 refacing, except in three instances where no medieval stone remains).
- 2.1.3.5.2.3 Not only are the averages for the northern walls remarkably consistent - exhibiting a maximum deviation of 2.05 cm, but the average course heights for the south choir aisle are also remarkably similar, the implication clearly being that these parts of the structure are contemporary, and in the case of the walls up to the string-course were almost certainly built up together.
- 2.1.3.5.3 Further evidence for the extent of the choir phase of construction
- 2.1.3.5.3.1 While it is likely that the lower parts of the walls of the nave aisles (or at least of the south aisle, which also formed the north wall of the cloister) were built up with those of the choir (and presumably also of the transept between them), the extent of the higher work at each phase of construction is more difficult to establish. However, there is strong evidence suggesting that, as at Wells cathedral, the building of the choir included the eastern walk of the transept in order to provide abutment against the eastern crossing piers (which formed the western extent of this first phase of building). Not only do the course heights discussed above tend to confirm the hypothesis that the eastern chapels of the transept are directly contemporary with the choir aisles, but the presence of a doorway, blocked in the middle ages, at the northern end of the east transept aisle can be directly paralleled at Wells, where it has been argued that doors at the ends of the transepts' eastern aisles formed the processional doorways during the construction of the remainder of the transept.⁷
- 2.1.3.5.3.2 At Wells the theoretical model for the construction of the cathedral recognises the requirement of the college of priests for liturgical entrances at each stage of the erection of the building which would allow the processions required by the religious calendar to take place without the clergy needing to enter the building site to the west of the completed part of the structure. In some instances these entrances were temporary and were blocked once the next phase of the construction was complete, in other

⁷ Sampson 1998, p.13, and fig (A) on p.14..



The blocked processional doorway at Wells (above and right), and in the N transept of Glastonbury Abbey (below), used while the choir was complete and before the transept was finished.



instances the doorway fulfilled a function which continued even after the next part of the church came into service. Thus, at Wells, although the small door in the south wall of the choir ambulatory and the south door of the eastern aisle of the south transept were blocked relatively quickly, the doors to the east walk of the cloister from the south transept, and the great north porch retained their functions; and the door from the eastern aisle of the north transept subsequently became the means of access to the chapter house stair.

2.1.3.5.3.3 When the choir of Wells cathedral came into use, and prior to the completion of the transepts, the processional doorways were located in the north and south ends of the eastern aisles of the transept. These aisles only functioned as processional paths prior to the completion of the transept, after which they were divided by screens to form four chapels.

2.1.3.5.3.4 The south wall of the south transept of Glastonbury Abbey is gone, but the north wall of the north transept exists to a few courses above the original floor level, and here the eastern aisle terminated to the north in a doorway which was evidently blocked in the middle ages, and, judging by the course-heights and sizes of the stones of the remaining blocking courses, this closure of the doorway took place relatively early - certainly before the late 13th century, and probably considerably earlier. This area was excavated by Bond in 1921:

'Later in the summer the wall of the transept itself was unearthed in the high bank to the north. By good fortune a considerable section of this north wall remains, and offers an excellent example of the details of the plinth work as originally laid down after the fire of 1184. Wide bases for the flat pilaster-buttresses survive, and between them the lower parts of an original doorway leading from the north into the eastern aisle of the transept (and thence into the choir aisle on the south and to the two chapels on the east). But this doorway had been solidly blocked; **the blocking seemed to me of comparatively early date....**'⁸

2.1.3.5.3.5 A photograph of the excavations published in the report, looking west along the north wall of the transept, shows the doorway as found with its blocking of finely cut ashlar in relatively shallow courses such as might be expected of a late twelfth or thirteenth century masonry.

2.1.3.5.3.6 It seems quite likely that this would have been the only available position for

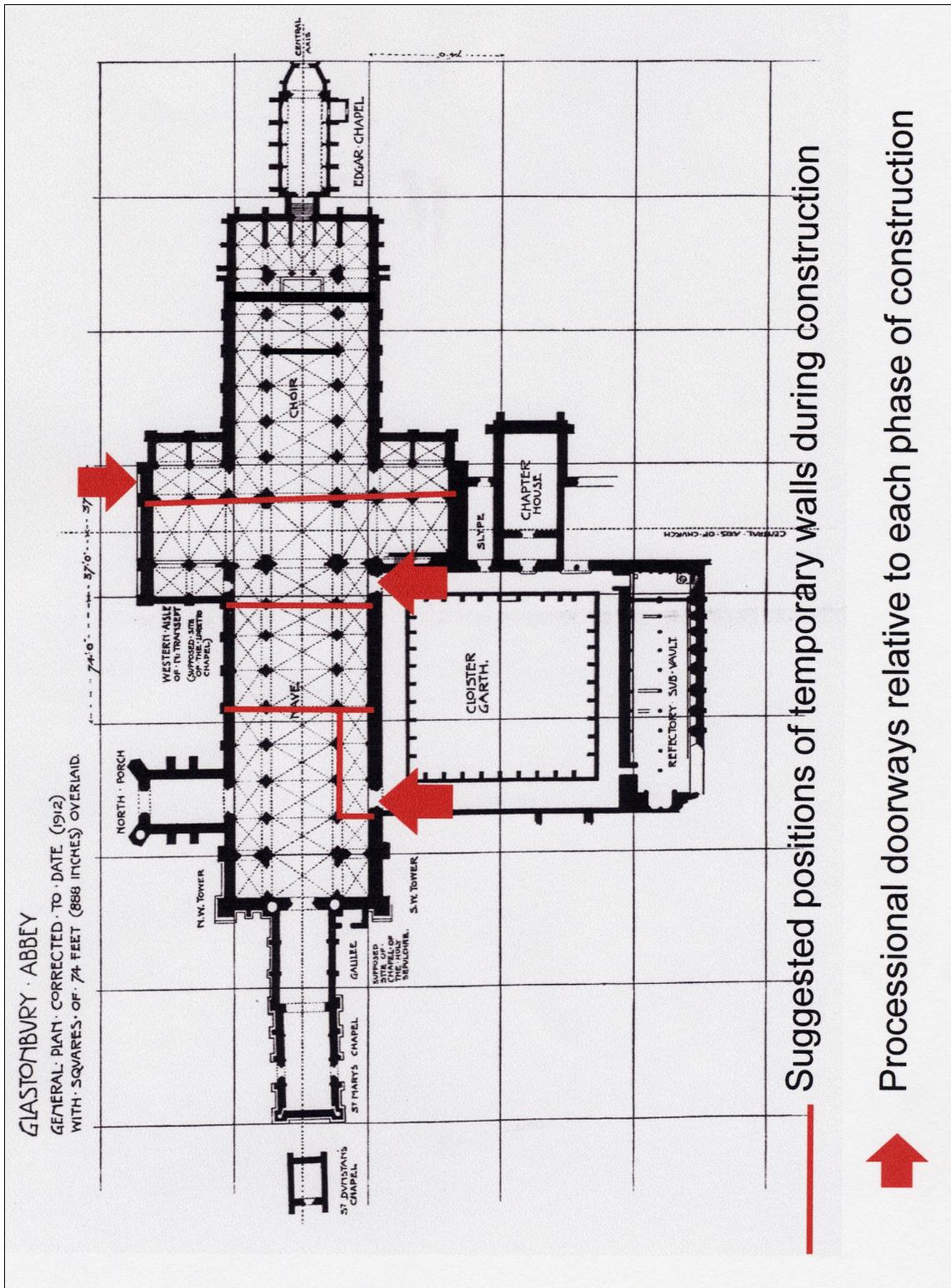
⁸ Bond 1922, p.14-15.F. Bligh Bond, 'Glastonbury Abbey Excavations: Tenth Annual Report', *PSANHS*, vol. lxiii (1922), p.13-19.

such a processional door to serve the choir phase of construction, since the south transept abutted the conventual buildings, closing off any prospective processional path,

2.1.3.6 Further refinements to the summary of the phasing of the building of the Abbey Church

2.1.3.6.1 From the foregoing it is apparent that the fabric of the northern ruin confirms the outline proposed in the previous report for a primary phase of construction in which the choir and the eastern aisle of the transept were erected together, with the objective of providing a functional church within the choir east of the crossing with processional doorways in the ends of the transept's eastern aisle.

2.1.3.6.2 There is a possibility that by the time of the hiatus caused by the King's death in 1189 this first phase of the church was only completed to the tops of the aisle vaults on the north side of the choir. However, as the evidence for this is seen only in the remaining part of the north transept triforium elevation (and there is evidence lower in the fabric that the Dundry stone on which this inference is based was being concentrated in the choir and omitted in the contemporary parts of the transept) this may be illusory. That this is indeed the case tends to receive confirmation from the matching breaks in the construction of the crossing piers [Section 2.1.3.4.2-3.], probably caused by the slight hiatus while the aisle vaults were erected, which lies slightly **higher** on the northern pier (rather than lower as the Dundry distribution would suggest should be the case).



Phasing Plan - the suggested four phase sequence of construction

2.2 Other constructional features

2.2.1 The high-level passageways and access

2.2.1.1 Virtually invisible from the ground is the surviving evidence of the high-level gallery in the wall thickness of the church at clerestory level, and, rising from the clerestory, the tower and high roof-spaces stairs, which are preserved only in the remains of the crossing piers.

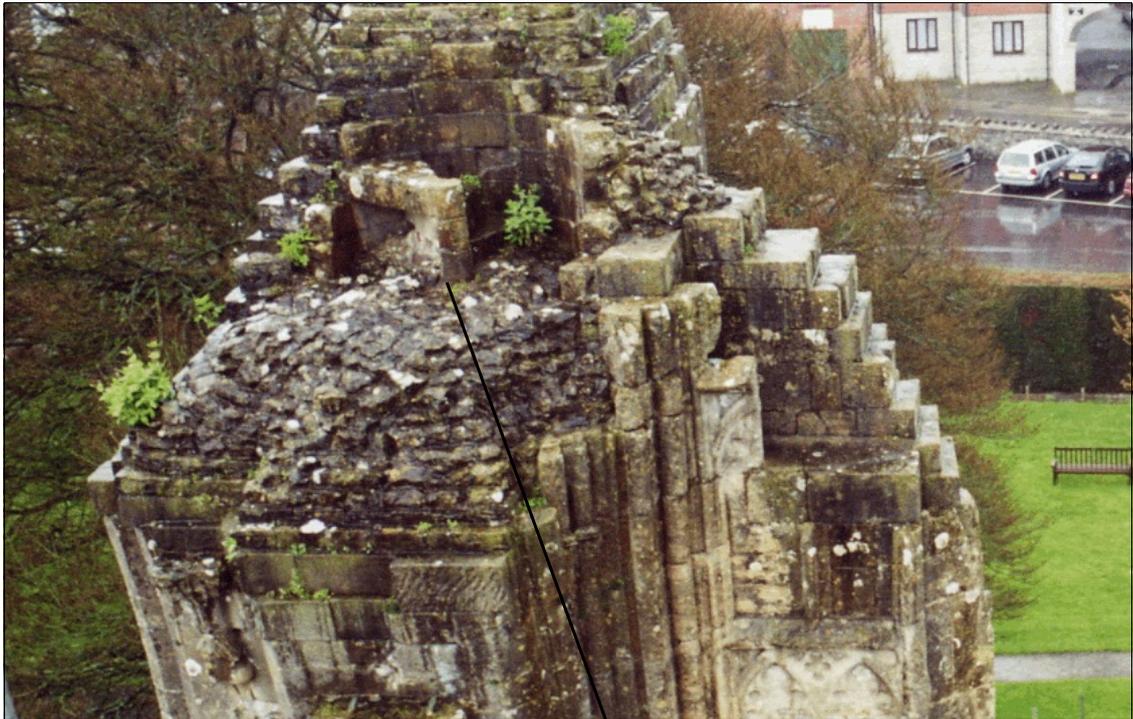
2.2.1.2 No ground-level access to a stairway of the abbey church remains, or is reported from excavation, since the walls of the great church (except where surviving) have generally been reduced below the top of the foundations. It is likely that the north transept had a stair in the north wall at the north-eastern angle of the high vessel - stairs exist here at Wells Cathedral and many other great churches.

2.2.1.3 The transept wall-walk, with its floor at the level of the lower clerestory string-course was noted in the previous report for the south transept, and is present also in the north transept, likewise being blocked at the southern end of the south bay with bricks set in a dark grey Portland cement. This passage must have given access to the stair in the north-eastern pier of the crossing, of which seven courses, including the newel and three steps, are still preserved at the top of the ruin.⁹

2.2.1.4 The counter-clockwise rotation of the northern stair means that the window could not have been in the same position as that on the south stair, in the angle of the choir and transept below the clerestory springing-level string course. It seems probable that the window was at a higher level in this angle, and that it lay above the level of the surviving masonry, leaving no trace in the extant ruin.

2.2.1.5 The southern ruin shows no evidence for the former existence of a clerestory level passageway in the choir; however, the remodelling of the clerestory windows by Abbot Monington, including the lowering of their sills, would have rendered such a late 12th century arrangement inoperable, and the passage could only have survived in a truncated form between the windows or from

⁹ The form of the intermural passageways resembles that of St Davids Cathedral, rather than nearby Wells, the latter having a single stair rising the full height of the eastern corners of the transept, rather than transferring to the crossing piers at the base of the clerestory as at St Davids.



The spiral stair to the central tower in the North-East crossing pier.

Only three treads of the counter-clockwise stair still remain exposed above the Caroe period capping of the wall top. This stair was approached from the clerestory wall-passage, but also gave access onto a wall passage in the choir, which can be seen in the upper view from the top of the SE pier. The choir passages were probably blocked off when the elevation was remodelled under Abbot Monington.

In the view at left the springer of Abbot Bere's fan vaulting - (apparently reusing a C12 head-stop - can be seen to the left of the eastern crossing arch.

the stair in the crossing pier to the jamb of the western clerestory window.

- 2.2.1.6 On the northern ruin the eastern elevation of the clerestory window is damaged at the top of its remaining height, the face of the Monington jamb broken through above the height of the 12th century sill, and here there appears to be evidence for the early passage fossilised in the remaining 12th century masonry of the jamb.
- 2.2.1.7 The extent of the 1909 rebuilding in this area has obscured the nature of the evidence to the extent that it is very difficult to judge whether stone is in situ medieval work, refixed medieval, or early twentieth century reconstruction. However, at the level of the head of the uppermost remaining panel of the 14th century remodelling, there is a void in the thickness of the wall floored with Doulling stone blocks, its southern margin formed by the two blocks of Monington's panelling which survive at this height, its northern wall formed by five courses of what appears to be late 12th century ashlar work. At its western end this putative passageway is terminated by five courses of squared ashlar of uncertain date - if medieval it would appear likely that they belong to a blocking erected within the tower stair at the doorway from the stair to the choir passage when the 14th century remodelling of the choir took place, severing the early passageway by the lowering of the 12th century sills. The top stone of this blocking has a slightly different texture, and seems likely to belong to the Carøe repair.
- 2.2.1.8 Only a short length of this putative passageway remains, its eastern end now coinciding with, or a little to the west of the jamb of the late 12th century window, of which a base and a short length of the angle shaft survive before a projecting area of ashlar masonry (presumably of the early 20th century) oversails the shaft in order to create a stepped face down the eastern margin of the ruin at this point. It is conceivable that this stepped masonry could represent a Monington period encasement of the north face of the choir, parts of which have been lost re-exposing the shaft and base, but the form of this stonework strongly suggests that it is post-medieval repair.
- 2.2.1.9 The passageway lies at a somewhat higher level than that in the transept, this being the result of the counter-clockwise rotation of the stair in the north-east pier, there being a three-quarter turn between the two passages, probably leading to a rise of more than a metre in their relative floor-levels. This disparity would probably have been adjusted with steps down from the door in the stair-turret, and further steps in the sill of the first window opening.

2.2.2 The form of the triforium roof

2.2.2.1 The late 12th century triforium roof of the eastern side of the transept had a typically steep slope (similar to that of the western three choir bays at Wells Cathedral). The string-course at the base of the 12th century clerestory formed the drip-course above the roof, and there is a flashing-groove cut immediately beneath this to accommodate the lead. On the original choir this form was repeated, but the remodelling of the choir under Abbot Monington led to a major alteration.

2.2.2.2 At the western end of the north elevation of the choir the clerestory string-course of the transept returns horizontally for a little over 2 metres, and the course from which it projects continues eastwards to pass beneath the 12th century base and nook shaft of the north-eastern angle of the west jamb of the western choir window. Monington's windows, however, were extended downwards from the earlier sill-positions, and as a result the old string-course was carefully cut back and a new, steeply sloping string was introduced, running steeply downwards at an angle of approximately 70°, the stones bearing the projecting string being carefully cut into the earlier masonry.

2.2.2.3 The full extent of this descending string-course has been lost with the destruction of the western jamb of the window (which now ends with the 1910 capping of the east face of the crossing pier). However, it could not have descended much further without transgressing the line of the 14th century jamb, suggesting that probably no more than 40 cm of its slope has gone.

2.2.2.4 Probably belonging to this phase of the roofing is a Douling stone block set in the wall of the choir triforium with its 'vertical' sides almost parallel to the line of the angled string-course (an identical block let into the wall exists on the corresponding position on the south crossing). This filler stone, evidently filling a slot cut into the pre-existing wall, itself projects from the wall face at upper dexter, suggesting that it formed a corbel, rather than the hole having accommodated a timber, and its angle suggests that it functioned with the Monington period roof. Its present form suggests that it was subsequently cut back, and had therefore become redundant prior to the Dissolution.

2.2.2.5 There is reason to believe that the Monington period roof was replaced, since both here and on the south side of the choir the wall bears an incised flashing-groove which begins at the angle between the choir and the transept and slopes downwards at a relatively shallow angle to the east, being cut through the Monington period projecting string-course, implying that this belongs to a later re-leading of the choir triforium. On the southern crossing

pier the western extent of this flashing groove stops a little short of the angle with the transept, and its angle becomes somewhat steeper after it crosses the Monington string-course. It eventually ends against the rebate of the window jamb at a level above that of the inner sill, making reconstructing the form of the roof here problematic.

2.2.2.6 Also of interest are the corbels which once lay within the triforium. The upper pair lay relatively close to the roof line of the 12th century triforium on the east wall of the north transept; these have chamfered lower faces, and presumably supported the upper wall-plate against which the rafters of the triforium roof terminated. However, much lower down on the same wall are two 34 cm high x 30 cm wide blocks with worked-back faces, the northern still projecting from the wall face by up to 4.5 cm which must also have been intended to support some lost feature. There is no sign that another such block existed to the south of these; it is possible that they supported the ends of sloping braces to the roof-timbers, though their close spacing makes it unlikely that they supported braces for a regular series of principals.

2.2.2.7 The difference in treatment of the northern and southern transept triforia (the latter showing no signs of corbels, even for the wall plate) suggests that the roofing of the aisles may have been completed on one side of the church prior to the 1189 hiatus, but that the other side was not roofed until work resumed in the 1190s, and that the fashion for supporting the timber-work had changed. The loss of the triforia in the remainder of the church makes it impossible to determine which was completed first.

2.2.3 Technical features

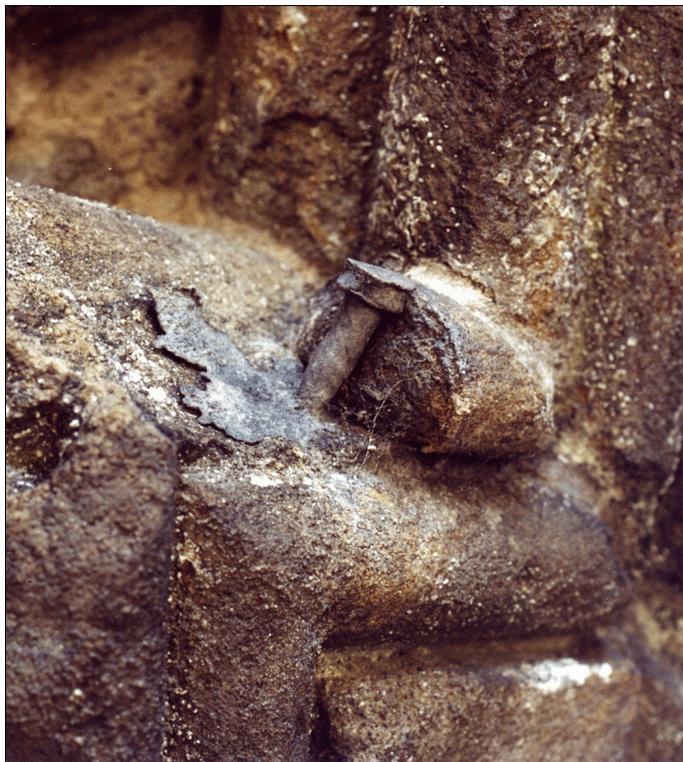
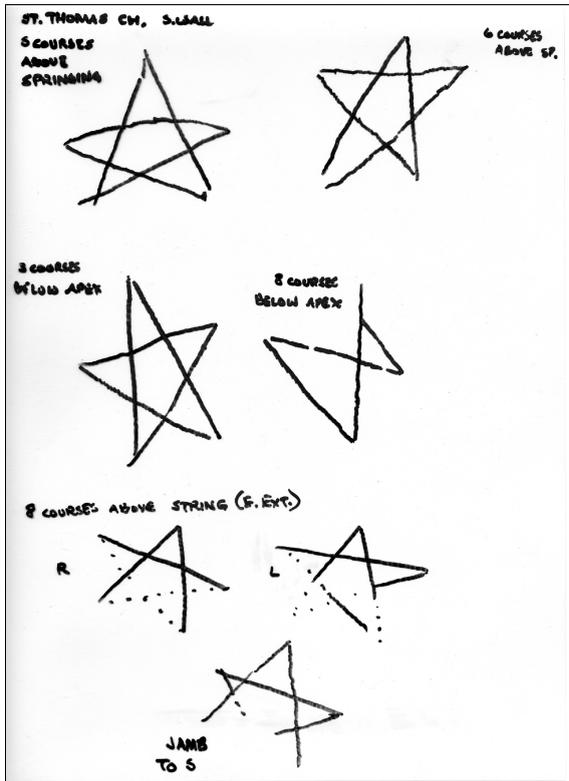
2.2.3.1 Masons' marks

2.2.3.1.1 While masons' marks appeared to be entirely absent from the ashlar of the southern crossing pier a dozen or so marks cut by up to six men have been found on the northern masonry, though all but two of these marks are in the transept chapels.

2.2.3.1.2 The most prolific example is a small five-pointed star, cut freehand, which has been seen on both the interior and exterior fabric of St Thomas's Chapel above the level of the springing of the window head. Six of these marks have been identified, three on adjacent stones on the east elevation of the

chapel south of the window head, and three on the south wall within the tympanum of the arch, suggesting that they were all laid during the same season of construction. A similar mark is found at Wells cathedral in the choir and transept, reappearing briefly in the nave in the first decade of the 13th century. Marks at Wells are rare in the earliest fabric of the choir - only 4 have been reported for the three bays of the late 12th century arcade; it is in the triforium that five-pointed star marks first appear, in all three bays on the north (7 marks) and the eastern bay of the south elevation (1 mark); in the clerestory this mason marks stones in the two eastern bays on the north (7 marks) and the eastern bay on the south (3 marks). In the pre-1184 fabric of the transept he leaves marks in the eastern part of both transepts at and below triforium level. He appears to be absent from the Chilcote period fabric (1184-1199) of the north transept and eastern nave, re-appearing in the Doulling stone masonry of the south transept clerestory and the nave west of the 1199 break. Thus the distribution of his marks at Wells would fit with a period of absence between 1184 and 1199 during which he appears to have worked at Glastonbury.

- 2.2.3.1.3 Two marks on the shafts beneath the arcade level capitals in the south-western angle of the west bay of the north choir aisle may be the mark of a mason, but if so they are unusual in incorporating a curved line - being an elongated 'C' shape containing a cross. This mark has not been noted at Wells, unless one mark on the south transept staircase at clerestory level (c.1200) is a more complete version of it.
- 2.2.3.1.4 On the south wall of St Thomas's Chapel there is lop-sided version of the hour-glass mark, a mark so common as to be of doubtful value in analysing the building - closer comparison with examples at Wells may be of value, however. Also a common mark is the simple arrow-head found three times on the south wall of the northern transept chapel, again within the tympanum at the head of the wall.
- 2.2.3.1.5 Two possible examples of the cutting of a diagonal line across one corner of the block exist near the base of the northern wall of St Thomas's Chapel, but it is difficult to be certain that this is a deliberate mark. Stone marked in this way is found at Wells in the post-1199 fabric. Two such marks were noted during the South Nave Aisle survey at Glastonbury [SNA2004 Section 2.9.2.].
- 2.2.3.1.6 A faint double vertical line has also been identified at high level in the transept chapels, and this may be the mark of the man found marking stone in the eastern triforia of the transepts of Wells Cathedral who also seems to disappear immediately prior to the Chilcote phase (which has been equated with the post-1184 phase of construction, Wells having to switch quarries as Glastonbury began its rebuilding programme). One similar example was



Above: five-pointed star mason's mark found on the choir aisle / St Thomas's Chapel, suggesting a date in or shortly after 1185. A mark very similar to this is found at Wells prior to the (1184) switch from Doulling stone to Chilcote stone, but this mason does not appear to mark any stone in the 1184-99 Chilcote phase of construction at Wells.

Left: Leaded repair to the zig-zag mouldings of the arch from the north choir aisle into the north transept's eastern aisle, west side of south elevation.

recorded at the Abbey on the 6th bay of the south nave aisle (east jamb) [see S Nave Aisle report section 2.9.2.]

- 2.2.3.1.7 The problems faced by Wells and Glastonbury during the immediate post-fire period, and probably for several decades thereafter, were not merely in the supply of stone from the quarry at Doultling, but also in establishing and maintaining a sufficient workforce of skilled banker masons. The disappearance of two men ('five-pointed star' and 'parallel lines') from Wells at the end of the first Doultling phase of construction there, and their appearance in the pre-1189 fabric of Glastonbury Abbey not only tends to confirm the hypothetical dating of the Wells fabric, but also illustrates the movement of masons from one site to the other, and an assessment of the state of the Wells workforce either side of the introduction of Chilcote stone from the recorded marks could well shed further light on the migration of banker masons at this period.
- 2.2.3.2 Medieval repairs
- 2.2.3.2.1 On the western zigzag mouldings of the arch into the north transept's eastern aisle from the west bay of the north choir aisle there are the remains of a lead-grouted repair to the southern margin of a roll-moulding. The attached piece has been lost, together with the lead-work which held the western end of the repair, leaving the eastern poured lead dowel and the associated lead which has spread into the joint. At the western end of the parent stone the mark of the drilling for the western poured dowel remains in the end of the stone.
- 2.2.3.2.2 There is no sign of any mastic or mortar in the joint, and it seems likely that none was used, since the way that the lead has spread into the joint makes it unlikely that any additional jointing material was present. The upper end of the poured dowel shows that the hole was enlarged to twice its diameter near the surface, perhaps to ensure that the lead did not clog the hole during the 'pour'.
- 2.2.3.2.3 Like the repair reported on the south nave aisle corbel table [SNA 2004 Section 2.9.1.3.] the form of the lead suggests that the repair was made before the stone was fixed.

2.2.3.3 Putlog holes

2.2.3.3.1 In discussing the south crossing pier [SCP 2005 2.2.3.2.] the relative lack of putlog holes was commented upon, the main series in that context being a set of three small holes on the same standard in the north bay of the south transept, together with two holes in the south choir aisle's western bay just below the springing of the capitals.

2.2.3.3.2 The latter are part of a series which exist at the same height right around the choir aisles and transept chapels, being present in the two western bays of the north choir aisle (where ashlar survives), and in the rubble core-work of the bay to the east. The existence of this series of holes all at the same level again confirms the assumption that the choir and eastern transept aisles rose together as a single unit.

2.2.3.3.3 In the wall between the two north transept chapels another set of putlog holes below this series also survives, but at a height of 2.5 metres further down it seems likely that an intermediate half-lift is concealed behind the ashlar facing. The concealment of the putlog holes can be paralleled at Wells cathedral, where occasional holes were found behind the facing ashlar during the restoration of the west front and the adjacent stonework of the aisles in the 1970s and 80s.

2.2.3.3.4 As on the southern pier there are signs of small putlog holes on the same standard in the transept triforium in the comparable position - though here only the two lower positions survive. Both these holes (unlike those on the south pier) are visible on the eastern elevation of the triforium, and here there are two further probable putlog holes hard against the north face of the choir wall, one at the level of the upper hole on the west elevation, the other centred 2.5 metres above it, just below the clerestory string-course. The arrangement of these holes, 2.5 metres apart vertically, and 2 metres apart horizontally, matches those of the transept chapels, and in the latter instance a position 2 metres to the west of the existing holes would suggest a putlog against the western face of the aisle arcade.

2.2.3.3.5 The transept chapel holes show the typical staggering of the positions where the bearers were tied into the standards on alternate sides of the pole in order to spread the loading on the standard.

2.2.3.4 Centering marks

2.2.3.4.1 The square slots cut into the upper parts of the wall-plates of the arcade noted in the south crossing pier report are found consistently in both the north choir aisle and the transept chapels, as well as the eastern aisle of the north transept (over the arch leading into St Thomas's chapel) - a technical feature which further serves to confirm the contemporaneity of the choir aisles and the eastern aisles and chapels of the transepts.

2.2.3.4.2 The square slots in the jambs of the arcade arches at springing level noted in SCP2005 (Section 2.2.3.3.3.) are also present in the arch between the north choir aisle and the transept. These lie at the level of the top of the abacus, 7 cm in from the eastern angles of the arch, and roughly 7 cm wide x 4 cm high, and filled with mortar (possibly a modern mix, though the southern pair appear to have been filled in the middle ages). Their absence from the transept chapel arches suggests that these may have housed a tie bar or decorative element at the entrances to the choir, rather than being the seatings for wedges to allow the release of the centering for the arch. A similar neatly cut slot was noted above the abacus of the western capital on the south pier on the respond of the high arch into the south transept; no similar slot was recorded on the north side.

2.2.3.5 Wooden wedges

2.2.3.5.1 These were not found in the northern ruin. Their function and dating are discussed in Section 2.1.3.5.1. above.

2.3 Evidence of screenwork

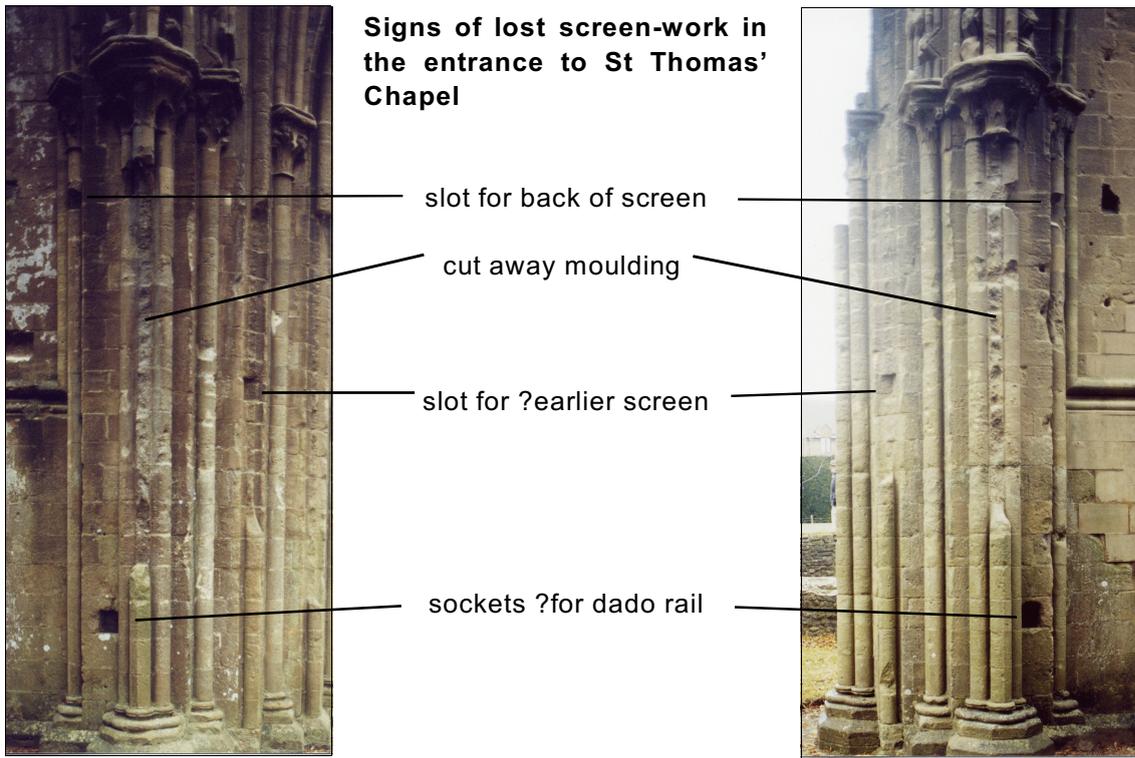
2.3.1 The transept chapel screens

2.3.1.1 The chapel of St Thomas

2.3.1.1.1 Evidence remains for the former existence of two (successive) screens across the western arch into the chapel. The earlier of the two is probably represented by a pair of rectangular recesses 17 cm high and 10 cm wide cut into the western roll mouldings of the arch responds to north and south between 1.58 and 1.76 m. below the base of the arcade capitals. This position corresponds to the height of the horizontal sill-level string-course within the chapel, itself lying at the mid-height of the arcade from floor to springing. This rigid adherence to the twelfth century proportions of the architecture suggests that the screen's proportions were designed with the building itself.

2.3.1.1.2 The scars of the later screen do not relate so directly to the architecture, and betray a more cavalier approach to the fabric. Their position, well to the east of the rectangular recesses, indicates that they belong to a different structure. These scars consist of relatively rough 'breaks' on the eastern roll moulding of the respond and on the nook-shaft in the north-western and south-western corners of the chapel; were it not for the close match with similar recesses on the southern responds it would be tempting to dismiss these as accidental breaks. These cut out sections of the rolls rise to 4.15 m above the floor, and probably mark the position of the parapet of a screen. Additionally, the flat between these two rolls on both responds contains a rectangular recess 19 cm high, 14 cm wide and 10.5 cm deep, their upper (slightly curved) edges 1.15 m above the medieval floor level (at a height corresponding to the effigy slab of the lost monument on the north wall of the chapel). It seems likely that these recess perpetuate the position of the top of the dado of the screen, and the correspondence in height with the monument suggests the possibility that this screen belongs to a refurbishment of the chapel associated with the creation of Abbot John of Taunton's tomb in the last decade of the thirteenth century.

2.3.1.1.3 Several small drilled holes, together with a pair of roughly oval holes 4 cm wide x 3.5 cm high and 4 cm deep, also lying on the line of this screen, are probably associated with it.



The N transept chapels' south walls, the northern (left) with the scar of the piscina; the southern (right) with extensive traces of lime plaster bearing ashlar lining.

2.3.1.1.4 As well as these screens at the entrance to the chapel, there are suggestions of the former presence of screen-work on the western side of the east transept aisle in this bay, in the form of the trimming back of the north and east faces of the corner nook-shaft at the south-west angle of the southern bay of the north transept's east aisle. Here the north face of the roll has been cut to a flat face from 1.4 to 3.5 metres above the floor level, while above this for a height of 34 cm the east face of the roll has been cut away. This suggests a dado built up against the roll, with the southern tracery stones above seated against the cut-back face of the roll, and the base of the parapet cut into its east face.

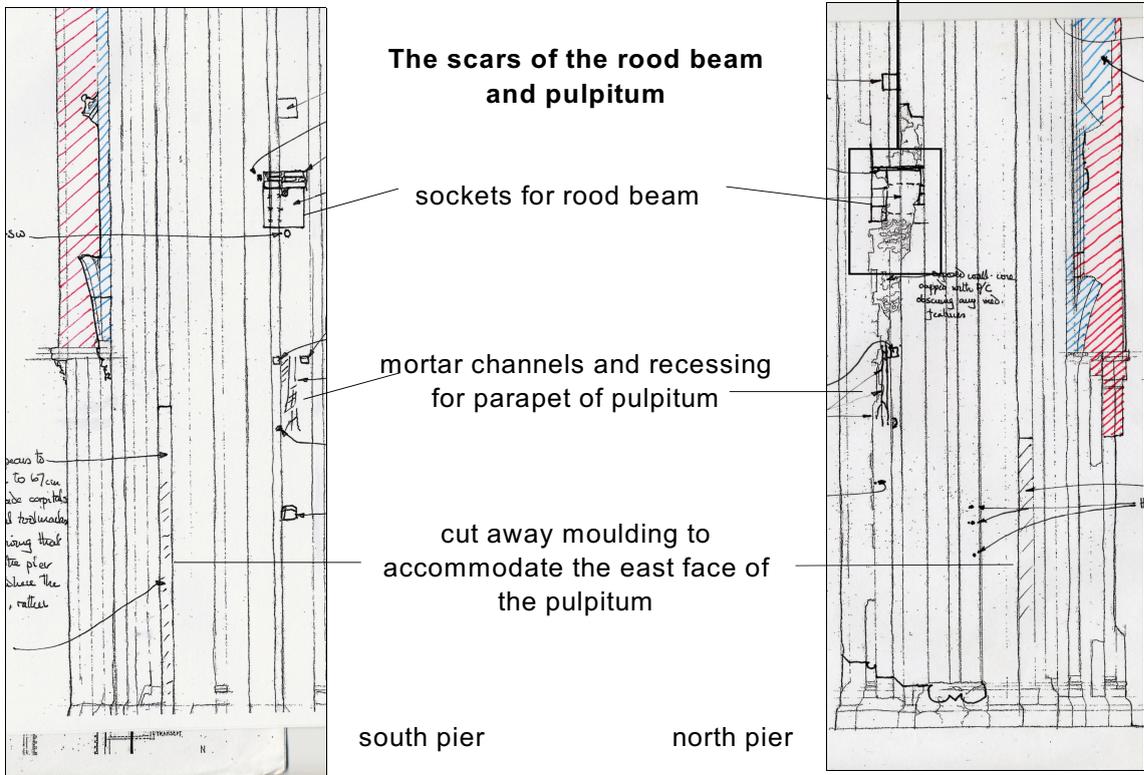
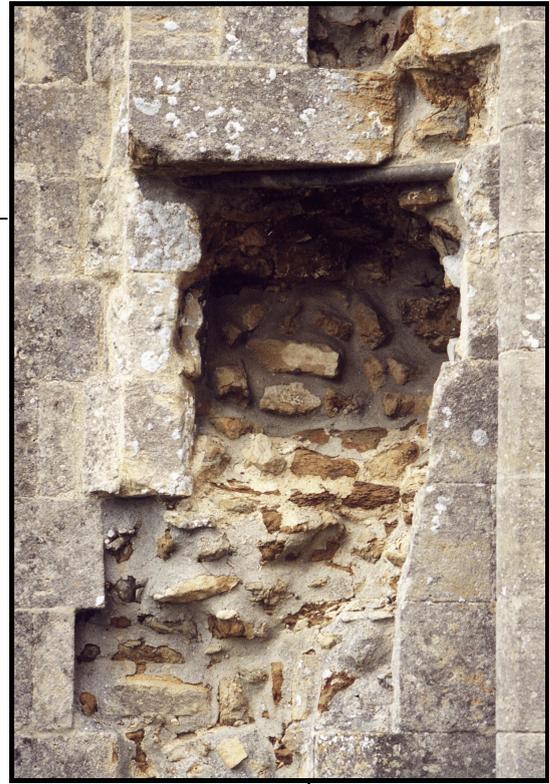
2.3.1.2 The north-east transept chapel

2.3.1.2.1 The southern respond of the western arch into the northern of the transept chapels has been heavily repaired over its upper metre, while the northern respond is gone; however, there are some indications of the former existence of screen-work here. The western roll of the respond is missing, and while it is possible that this is merely the result of breakage, it is possible that the shaft has been removed to accommodate a screen, particularly given the possible traces of mortar residues on the plain stonework to the west.

2.3.2 Abbot Monington's pulpitum

2.3.2.1 The southern face of the north crossing pier bears the corresponding scars of the pulpitum to those described in SCP 2005 Section 2.3.2.. On this side of the crossing the stonework of the pier is more damaged, but the same mortar channels for the projecting parapet survive, and the working back of the square moulding immediately to the east of the arch respond has been carried out in the same way to accommodate the back face of the screen. Here, too, are the hollow-chamfered cut at the probable position of the base of the parapet, and the eastern of the rectangular recesses (described in SCP 2005 2.3.2.6.) suggested as housings for features at the top of the parapet. The position of the expected western housing has been lost together with the facing ashlar in this area.

2.3.2.2 Of the other features described on the southern pier which might relate to the screen - the group of three drilled holes, and roughly cut recess 2.75





The cut away mouldings of the arch into the N Choir Aisle - the central roll moulding and base removed and the two side moulds cut back at parapet level to fix the C14 screen.

metres above ground level - no matching traces have been found.

2.3.3 The choir aisle screens [see also SCP2005 2.3.3.]

2.3.3.1 As on the arch serving as the entrance to the south choir aisle, the north aisle was also approached through a stone screen, the presence of which is shown by an identical set of markers. From 0.77 m. below the neck of the capital to 1.29 m. (S) and 1.33 m. (N) the two flanking roll mouldings of the responds of the arch have been roughly trimmed back; while the central projecting roll moulding has been cut back over its whole height beneath this, leaving rough toolmarks on the face. Here, too, the bases beneath the central roll have been trimmed back to the same line, also leaving a tooled face. Mortar traces remain on the reworked surface (most clearly visible around 3 m. up on the south side), demonstrating that the screen was of masonry.

2.3.3.2 On the southern jamb of the arch, centred 1.25 m. up from the present ground level, a large hole has been cut (12 cm wide by 5 cm high and 10 cm deep) using a drill from the north, possibly to accommodate the ring for a hook to hold the screen door open. A similar socket may exist on the east face of the south aisle archway, where there is a weathered recess centred 1.35 m. up, and 11 cm. square by 7 cm. deep on the north jamb.

2.3.3.3 The similarity of the scars left by this screen, both in their form and their position, with those in the south choir aisle prove that the two choir aisle screens were contemporary creations, and were almost certainly erected with the pulpitum as part of the general reorganisation of the eastern arm contingent upon Abbot Monington's extension of the choir.

2.3.4 Screens behind the choir stalls

2.3.4.1 As on the south side of the choir, no unequivocal signs of the screen-walls which probably existed behind the stalls have so far been identified.

- 2.4 Other decoration and fittings
- 2.4.1 The rood beam
- 2.4.1.1 The void left by the withdrawal of the rood beam from the northern face of the east crossing arch is not as clearly defined as that on the south side of the crossing, a large area of the ashlar having been stripped out around the original socket - perhaps partly as a result of the cutting out of the end of the beam at (or just before) the Dissolution. The upper part of the void has a 1½ inch diameter copper alloy bar (probably of 1909) serving as a support for the masonry above, while below this for 23 cm the lime-mortared marlstone rubblework of the wall core is not as deeply cut back. Below this area, lying at the same height on the jamb as the blocked hole on the south pier, is a 50 cm wide and 41 cm high void which runs back into the wall-core for up to 55 cm, where the core has been capped with Portland cement - suggesting that the void originally ran deeper into the pier.
- 2.4.1.2 Below this, almost to the top of the scarring from the pulpitum, the ashlar surface has been disrupted, destroying any traces of the seating for the curved brace beneath the beam tentatively identified on the south pier.
- 2.4.1.3 88 cm above the top of the rood-beam void is a rectangular filler-block 23 cm square, occupying a similar position to the probable filled hole on the south pier, which lies 70 cm up from the top of the blocking. There is a (relatively modern) slate filler at a similar height to the tufa insert noted on the south pier - though the former appears to lie at a slightly lower level. The fact that three of these holes are carefully filled suggests that they may not belong to systems of fixings associated with the great rood.
- 2.4.1.4 The northern pier, however, possess two roughly-tooled back areas centred on horizontal chisel-cut slots running east west which appear to have once housed fixings, and it is possible that these were associated with ties set up to stabilise the rood and its attendant figures; cut recesses were also noted beneath the tufa insert on the south pier.
- 2.4.2 Fixings above the north choir aisle screen
- 2.4.2.1 On the east face of the western arch of the north choir aisle, at approximately 60 cm above the springing of the arch, a shallow semi-circular



There are seatings for two lost transverse elements above the screen closing off the north choir aisle from the crossing.

Above is one of the two slots cut into the C12 abacus which housed a beam, either for the top element of the predecessor to Monington's screen, or for a beam to support sculpture.

At left is the northern of two recesses with curved profiles (matching the pair on the southern arch into the choir aisle) which also appear to have housed a cross-beam.

recess has been cut into the inner angle of the vault-rib. This appears to be of the same type as the pair of recesses recorded on the western arch of the south aisle, which were interpreted as having supported a feature spanning the arch at approximately one-third of its height above the springing, and as having been either a decorative feature in its own right or the support for a decorative feature. In the case of the northern arch the loss of the northern vault rib has removed the northern socket, but the similarity of the surviving recess to those in the south aisle indicates that this was an identical arrangement.

2.4.2.2 At the apex of the arch there is a roughly cut recess in the soffit, which could conceivably have served to receive the top of some element standing on this transverse beam.

2.4.2.3 On the west elevation, just above the apex of the arch mouldings, there is a 6 cm deep hole 3.5 cm wide and 5 cm high, partly filled with twentieth century mortar.

2.4.2.4 It seems likely that at a different phase to the transverse beam to the east of the arch another, heavier, transverse beam was installed across the archway at a lower level. This lay directly on the tops of the abaci, where 5 cm deep rectangular slots have been cut to accommodate its underside. These slots are relatively variable in size - that to the north 25 cm wide x 7 cm north-south, the southern 20 cm wide x 11 cm north-south - but indicate the former presence of a horizontal beam up to 20 cm wide, certainly capable of bearing a rood or other sculptural elements.

2.4.2.5 The site of the late 12th century corbel at abacus level on the west elevation of the arch into the south choir aisle has been renewed in 1910 masonry on the north side.

2.4.2.6 There are a number of other drilled or cut holes around this arch on both elevations, the functions of which are now obscure.

2.5 Abbot Monington's Choir

2.5.1 From the evidence surviving on the north side of the choir there is little to add to the consideration in SCP2005. For the form of the remodelled triforium roof of Monington's choir see section 2.2.2..

2.5.2 Less survives of the blank panelling of Monington's choir on the north side,

with only six tiers remaining here as against the seven on the south. The panelling is cut into the late twelfth century in much the same way, with more of the early mouldings surviving up to the base of the third tier of panels; there are also parts of the position of the eastern high capital and its abacus, though here the trimming away of this feature has been done more carefully than on the south, and there is no trace of the bell of the capital or the moulding of the abacus remaining.

2.6 Abbot Bere's fan vaulting and scissor arch

2.6.1 Section 2.6.3. of the SE pier report noted an area of the west face of the pier which had been slightly recessed to accommodate the stonework of the scissor-arch, lying between 7 and 9.5 metres from the ground, and with its northern edge 20 cm south of the northern edge of the step at the edge of the respond. The similar scar on the northern pier lies between 5.7 and 9.575 metres above the ground overall, while the northern part of the scar ends at 7.13 metres from the ground - making the dimensions of the latter very similar to those for the southern pier.

2.6.2 The upper margin of the scar (which is consistent to both north and south of the slighted mouldings at the centre of the respond) lies at the height of the springing of the triforium super-arch, suggesting that Abbot Bere's architect was utilising the architectural divisions of the twelfth century church in the design of his scissor arches.

2.6.3 The lower margin of the scar to the south of the slighted central mouldings runs much lower than it does to the north (by a further 1.4 metres). The form of the southern edge of the scar suggests that it may perpetuate the profile of the mouldings of the stones which were set against the pier - three blocks each of 45-50 cm in height, the upper two with a curved profile at the lower edge, the lowest stepping inwards somewhat.

2.6.4 The projection of the slighted central moulding (up to 14 cm at 1.8 metres above the ground) suggests that the arches were built up with ashlar skins facing a central wall-core, rather than being solid ashlar as the remaining base to the west of the south-eastern crossing pier might suggest.

2.6.5 Positioned some four courses (approximately 1 metre) above the abacus level of the crossing piers (which mark the springing-point of the arches) is a late 12th or early 13th century head-stop, while immediately above it is a 15th or early 16th century demi-octagonal moulded corbel. These two lie in

approximately the same configuration as the 'spine' of a head-stop and worked-back or broken face of the corbel on the south pier, and probably represent the early 13th century and 16th century vaulting springers for the successive crossing vaults. The medieval fabric terminates immediately above this point on the northern pier.

2.7 Polychromy

2.7.1 The north transept chapels

2.7.1.1 The Chapel of St Thomas the Martyr retains important traces of late twelfth or early thirteenth century painted decoration in the form of ashlar lining on the south internal elevation, and decoration on the mouldings of the western arch and the head of the east window. Bond, writing at a time when it is likely that more paint survived, wrote that

‘The stone walls [of the transept chapels] were covered with a thin film of plaster, painted over with an uniform rectangular jointing, each rectangle containing a small red rosette at the centre.’¹⁰

2.7.1.2 Plentiful paint traces were recorded by the present author and by Sue and Lawrence Kelland during the conservation of the chapel in 1991-2, particularly on the south wall:

‘Here not only is there an almost complete area of ashlar-lining within the piscina to the south of the position of the altar, but the upper parts of this wall bear substantial remains of wall plaster with the late 12th or 13th century pattern of red ashlar-lining rising to arched lines at the top.

‘There are red patches which may be flowers, with one patch of blue on the east side.... Much of the red has discoloured to black on the surface, indicating that it is vermillion.’¹¹

‘The Becket Chapel had further traces of ashlar-lining on the capitals of the east window running onto the ashlar, and on the inner faces of the chevrons and the hood-mould over the east window. Behind the south-east corner shaft of the chapel (running up beneath the vault rib) were found plentiful traces of dark red; and similar red lines and red ‘striping’ or ashlar-lining was located

¹⁰ Bond 1910a, p.70.

¹¹ S & L Kelland 1992, p.1.



Paint traces in St Thomas' Chapel

Above: S wall, showing extensive traces of white painted plaster with ashlar lining in red (left), and remnants of red semée ornament (above).

Left: the soffit of the entrance (west) arch of the chapel has yellow ochre paint with red ashlar lining



Bottom left: the zig-zag moulding of the east window retains significant areas of red paint, usually preserved in the angles.

on all the vault wall-plates.¹²

- 2.7.1.3 It would appear that the western arch of the chapel may not have been fully scaffolded in 1991-2, since extensive paint traces survive on the mouldings and plain soffit of this arch, which seem to have passed unnoticed in the previous conservation programme. Here the painted decoration appears to have been based around a combination of white, red and yellow ochre, perhaps with some blue (which is represented by a single possible trace).
- 2.7.1.4 On the west elevation of the arch the paint is concentrated on the interlocking chevron mouldings of the outer order, and here dark red is found over white ground, apparently restricted to the narrow step moulding between the pairs of rolls which form the zig-zag, to outlining the triangular panels at the centres of the plain faces of the chevrons, and to the ashlar lining of other parts of the arch. The plain triangular panels at the centres of the chevrons not only bear outlining in dark red (most clearly preserved on the second and third panel down on the north side), but there is evidence that the centres of these panels were painted in a paler red, perhaps itself bearing additional decoration - probably a painted imitation of the sorts of carved ornament found in the decoration of the mouldings above the choir windows.¹³ The apparent absence of pigment on the roll-mouldings of the chevron-work suggests that these were simply painted with the white ground, or with a pigment which has proved more fugitive than the reds. The inner order of the arch appears weathered and relatively free of paint, but the roll and hollow of the eastern face towards the apex retains plentiful traces of white ground, tending to confirm the assumption that the mouldings were generally white, highlighted in red, and framed by red ashlar-lining on an ochre background applied to the plain arch.
- 2.7.1.5 Red ashlar-lining on ochre appears on the western hood moulding of the arch, the hollows, outer roll and soffits, including large areas preserved on the eastern soffit of the arch, and on the north side of the western face of the arch, where the lines are 7-8 mm wide, and the fictive coursing imitates the 12th century coursing heights, at 17, 17, 21 and 18 cm. On the eastern soffit a wider red line (1.2 cm) runs vertically down the angle of the junction with the arch mouldings, and the three horizontal joint lines are between 3 and 6 mm wide and spaced 15, 18.8 and 16.6 cm apart.
- 2.7.1.6 Ashlar lining on an ochre ground is found not only on the western rolls of this

¹² Sampson 1996, p.63.

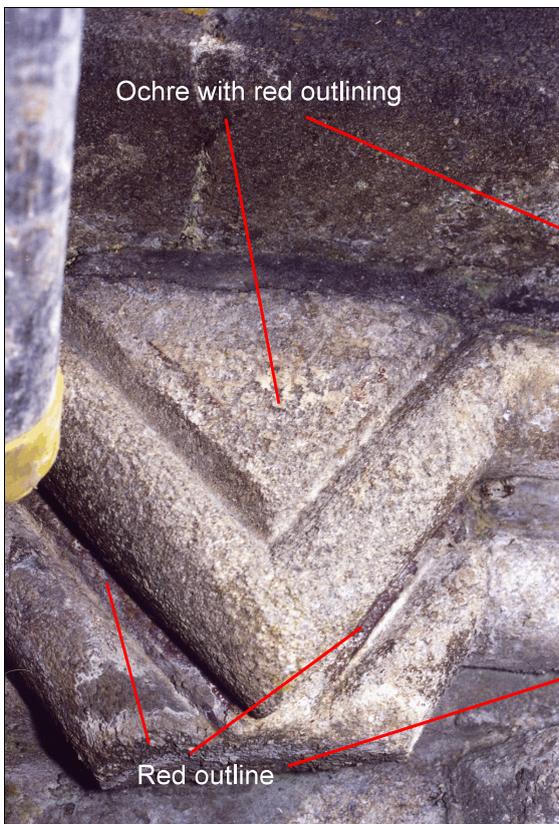
¹³ Under bright illumination there are suggestions of foliate ornament discernable on the surface of the lower of these two examples (see photographs 69/17 and 18).



Paint traces on the West elevation of the western arch of St Thomas's Chapel

Left: trace of a blue line on the soffit west of the mouldings, south side of arch.

Below: paint traces on the zig-zag mouldings of the arch. The triangular grounds occasionally retain traces of yellow ochre with red outlining just inside the angle with the roll. The deeper mouldings between the latter and the outer rolls usually retain traces of dark red, and there are dark red lines along the margins of the moulding against the wall-face.



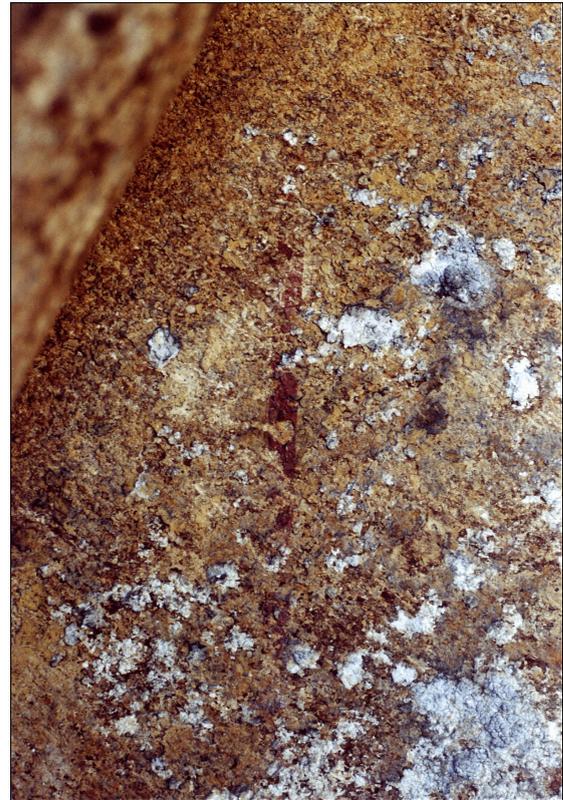
Ochre with red outlining

Red outline



arch, but also on the rolls which frame the side elevations of the chapel, a 7 mm wide line surviving on the north elevation a little to the east of the apex. In the northern transept chapel, on the surviving south wall, there are traces of a red line running parallel to the wall-rib immediately below it, and further patches of ochre ground with odd, irregular flecks of red paint suggesting something other than red lines, but also clear traces of a 5 mm wide ashlar line. The use of ochre background on the wall face itself may have been limited to the northern chapel, since the south wall of St Thomas's chapel was certainly white with ashlar-lining and semee ornament, and fragmentary white lime ground remains in the apex of the wall on the north side of the chapel.

- 2.7.1.7 As has been noted elsewhere (e.g. the vaulting of the south transept's north-eastern chapel) the paint on the south wall of St Thomas's Chapel has been applied over a thin skim of plaster generally 1-2 mm thick, which is lifting off the wall in places.
- 2.7.2 Paint traces on the north-eastern crossing pier
- 2.7.2.1 Elsewhere on this part of the building the remains of pigment are less extensive, but more ashlar lining (on a white background) is preserved on the east elevation of the arch from the north choir aisle into the transept, where parts of three fictive courses survive, again with a spacing reminiscent of the late 12th century masonry.
- 2.7.2.2 Plaster residues from the internal decoration survive in the protected angles of many of the mouldings, particularly on the west and south elevations, and in the angle between the wall-face and the inner moulding of the super arch in the triforium there are numerous traces of red paint laid over white.
- 2.7.2.3 The southern opening of the triforium arcade bears a single fragment of what appears to be ashlar lining on its southern jamb. The arched head of the same opening retains green paint on the chamfer at the base of the foliate spandrel (cf. SCP2005 Section 2.7.7.).



NE Crossing Pier - paint traces

Above left: W elevation, red paint in the angle of the southern wall-shaft between transept and crossing pier at clerestory level.

Above right: E elevation, red ashlar lining on the tympanum above the western arch of the N choir aisle

Left: W elevation, arch of the triforium openings, copper green pigment on the inner chamfer, with close up at lower left.

3 The North Transept Chapels

3.1 Construction

3.1.1 The matching course-heights and other technical features discussed in earlier sections of this report demonstrate the contemporaneity of the transeptal chapels with the choir aisles, and this is confirmed by the distribution of the masons' marks and the constructional putlog holes.

3.1.2 For the latter, whereas on the exterior and in the aisles they tend only to be left visible on the line of the window springing, on the interior of the transept chapels the tier of holes below this is also present, lying at 1.6 m. above the sill-level string-course, and around 2 metres below the upper series.

3.2 The decoration of St Thomas's Chapel

3.2.1 Introduction

3.2.1.1 The chapel of St Thomas represents (with the western Lady Chapel) the most complete interior space remaining in the Abbey, lacking only its vault, the inserted tracery of the east window, and the screenwork and fittings with which it was adorned. Of the latter, however, many of the bonding positions by which they were fixed to the walls have survived and here, too, the most extensive traces of the painted finishes of the twelfth century abbey survive, so that here, if anywhere in the ruin, some impression of the richness of the great church can be reconstructed.

3.2.1.2 In analysing the imprints left by fixings into a wall it is always difficult to be certain whether all of the marks belong to a single structure, two or more disparate phases of an attached structure, or two or more separate erections. The symmetrical regularity of the cramping systems on the north wall of the chapel, and the apparent similarity of the style of fixing (probably ferrous cramps) suggests a single phase; but the varied elements of the fixings to the east wall - with cramps, stone corbels, mortar pads and cut-outs in the window-shafts - could represent either successive adaptations of, or one or more renewals of an altarpiece. Alternatively this altarpiece, with

varied niches and panels provided for its decoration, could simply have been a structure erected at a single date but having (as might be expected) a more complex architecture than the decoration of the north wall.

3.2.2 The altarpiece(s)

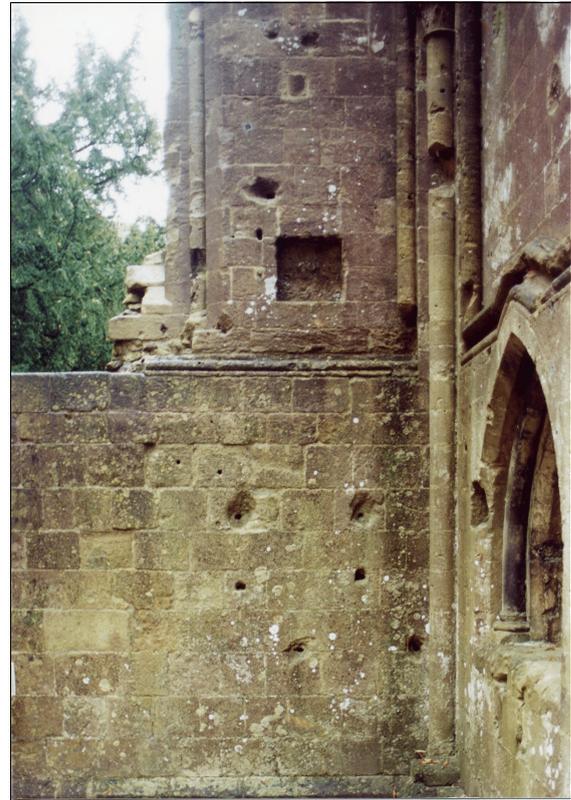
3.2.2.1 The east wall bears the scars of a series of fixings, concentrated in large part over the lower elevation of the structure beneath the string-course which encircles the chapel below the level of the window sill. These fixings are arranged in a symmetrical pattern, the symmetry being applicable not only to their placing but also to their type, so that (for instance) there is a pair of rectangular cut-outs at mid-height on the wall near the corners, and these holes form the approximate centres of triangular arrays of cramp-holes all of which have spalling around them indicating the rusting of embedded iron cramps. The central part of the wall, beneath the east window appears to be relatively free from such traces, and over the lower part there is a central gap of more than 2 metres, which probably represents the presence of the altar and gives some clue as to its size. Above this, towards the top of the plain section of wall, fixings are found inside this line, perhaps representing the pinning points for the outer part of this structure above the altar, with the remaining, central, parts supported directly on the back of the altar table.

3.2.2.2 The consistent symmetry of the fixings and their clear provision for the presence of the altar strongly suggest that these represent the traces of the securing points for applied stonework bearing a richly carved surround for a central 2 metre wide altar, the lower parts of the decoration probably largely architectural, with an upper tier of tabernacle and figure sculpture work. That this reredos extended across the full width of the wall is demonstrated by the way in which the southern face of the base of the northern nook-shaft has been worked back to a flat surface flush with the face of the shaft.

3.2.2.3 Probably related to this phase of decoration are the adaptations to the horizontal sill-level string-course and the corner nook-shafts of the east wall. Right across the east wall the heavier upper roll of the horizontal string has been worked back to provide a narrow seating on top of its lower element. There are slight rectangular recesses near the centres of the blind areas of wall to either side of the window sill on this line, and next to each of the window jambs there is a cramp seating with associated spalling, which sufficiently resembles the cramp seatings of the wall below as to suggest that they are contemporary. The vertical returns of the slighted string-course moulding at the corners of the elevation are also missing over the height of the lowest course - though whether because of accidental damage or

deliberate cutting-out is unclear.

- 3.2.2.4 The fixings which survive above this point are somewhat different in character to those described so far on the lower part of the elevation. There are traces of iron cramps which have rusted and spalled the surrounding stone, but these are less likely to belong to the fixing of thin decorated stone panelling or architectural tabernacle-work, than to be the remains of fixings for freestanding figure sculptures standing upon a pair of massive corbels which were accommodated in rectangular cut sockets at the level of the top of the screenwork already described.
- 3.2.2.5 These sockets are 35 cm square (the southern slightly wider), but are relatively shallow, which suggests that they formed part of the projecting reredos below, using its top stones to provide additional support, but, because of the more significant weight of sculpture which they carried, needing to be excavated into the ashlar of the wall behind. If these are contemporary structures (or additions to the pre-existing reredos), then it would appear that a narrow string-course existed immediately beneath the corbels (of the same height as the lowest course of 12th century ashlar above the architectural string), since the cramp at the top of the worked-back sill-level string probably represents the top of a course of the reredos.
- 3.2.2.6 The size of the corbels suggests that the figures which they supported were large and heavy, and there appear to be provisions for the fixing of near life-size sculptures in the wall above. On the north side there are two cramp sockets with associated spalling placed one above the other, the upper centred 1.15 m. above the top of the corbel scar; on the south there is one central socket with another 25 cm to its north at a similar height. The positioning of the southern pair side-by-side, rather than one above the other, suggests that these were not cramps set into the top of the head of the sculpture, but rather (initially) cramps set into the back of the shoulders using the hook-and-ring system seen in the west front figures of Salisbury Cathedral (c.1325), with the southern figure subsequently being refixed with a cramp into the dexter shoulder. This would imply that the full height of the figures would have been around 1.7 metres - effectively life-size. The fact that two (presumably successive) sets of cramps were installed also suggests that the figures stood here for a long time, and are therefore probably attributable to a fairly early phase of the chapel's history.
- 3.2.2.7 What is unclear is whether these two niches had canopies, and whether the final series of adaptations of the architecture of the east wall belong to the same phase of decoration or not.
- 3.2.2.8 The cutting back of the horizontal sill-level string-course implies the intention to place a fairly heavy superstructure upon the prepared seating, and, since



East wall of St Thomas' Chapel - marks of the lost reredos

The two large rectangular cut-outs were probably for corbels beneath life-size sculptures; below them the string-course has been cut back to locate a course of the stone reredos, and there is a symmetrical set of fixings to either side of the lost mensa (its position indicated by the absence of fixings). Symmetrical slots cut into the angle roll-mouldings of the window and the side wall-shafts also indicate the position of elements of the structure.

Left: detail showing the cutting away of the mouldings and one of the square slots cut for cramping the stones in position.

only a single narrow course intervenes between this and the base of the corbels for the figures above, it seems likely that further carved panels were to have been attached to the wall on either side of the corbels, probably bearing the projecting buttressing for the enclosing tabernacle work of the niches. There are fewer indications of cramp seatings in these areas, however, the only cramp of the same type as those found on the wall below being a little above and just to the north of the southern corbel, and with no corresponding fixing associated with the northern corbel. There are some small pinning points (four of them positioned symmetrically) midway between the window jambs and the inner lines of the corbels, and above these on the north jamb, at the level of the abacus beneath the vault springer, another pair of pins which could mark the position of the springing of the niche canopy.

3.2.2.9 Also a little above and within the line of the corbels is a pair of symmetrically placed mortar pads, roughly rectangular in shape, which evidently remain from the fixing of a stone cladding erected against the wall. The mortar is of a pinkish-brown colour similar to that associated with the cloister erected by Abbot Chinnock, but this colour is probably no more than the result of using marlstone dusts as aggregate, and the mix could belong to any period where this stone was in use on site. The top edges of these mortar pads more or less coincide with the upper extent of trimming away of the nook shafts in the angles of the east elevation - on the north side the shaft has been deliberately removed from the top of the sill-level string-course to a height of 93 cm, while on the south the upper line of the trimming lies at the same height, but only the top 20 cm has been cut away. It would appear either that the tabernacle work of the first reredos has been keyed into the corner shafts, or that the niches were superseded by a second, flat topped reredos rising a metre above the window sill, and it may be impossible at this remove to establish which is the case.

3.2.2.10 It is also difficult to determine the purpose and relative dating of two further slots deliberately cut into the nook shafts of the east window a little over half-way up. These suggest the former presence of the reredos rising to (or above) the height of the springing of the putative canopies of the flanking niches, and probably effectively obscuring the lower half of the window. Assuming that the window was furnished with painted glass it seems unlikely that this would have been done in the early period of the chapel's existence, and it may be that this represents a late alteration, perhaps carried out when the Perpendicular tracery was installed in the twelfth century window - probably in the fifteenth century. It may be, therefore, that adaptations to the reredos were carried out at this time involving the removal of the tall figure sculptures flanking the window, and involving the creation of a flat-topped image screen with a taller central section obscuring the base of the glazing. If so it seems likely that the iron fixings associated with the fixing of the figure

sculptures were simply sawn off flush with the wall, since the spalling around them suggests that they were still there at the Dissolution, and that they rusted and split the surrounding stone after the collapse of the vaults exposed them to rainwater.

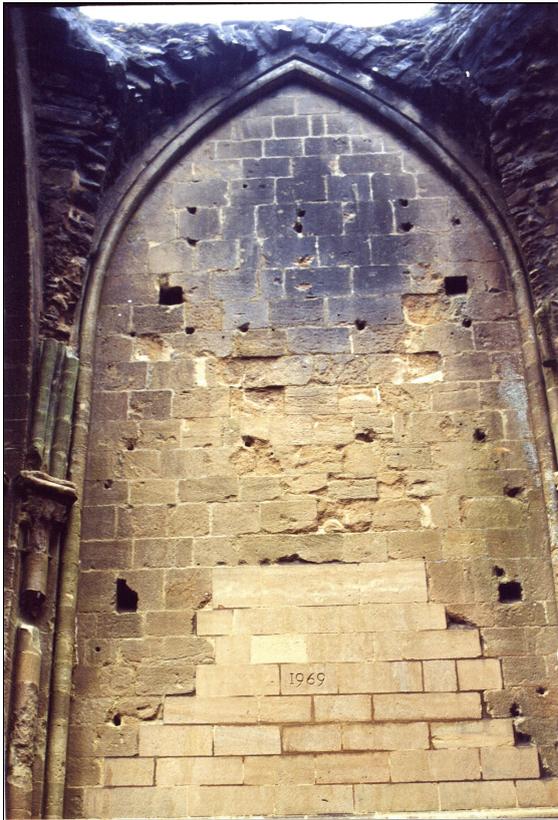
3.2.3 The lost monument

3.2.3.1 The north wall of St Thomas's Chapel bears a large scar, filled with repair ashlar in 1969. This begins on a single horizontal course at 1.1 metres up from the existing ground level, and affects six courses below and eight courses above the horizontal sill-level string-course, rising to a height of 4.4 metres above the ground. Above the string-course the area of disruption gradually narrows from the full width of the wall at the string (3 metres) to 1.2 metres in the topmost course. This gives the scar a shape consistent with the withdrawal of an arched tomb-recess, and the overall horizontal dimensions of the lower part of the scar would probably allow the presence of an effigy slab up to 2.1 metres long.

3.2.3.2 This recess is not part of the original structure of the wall, but appears to have been formed by the removal of the original late twelfth century ashlar blocks. The overall shape is consistent with an arch-and-gable topped recess of fairly tall form, probably resembling that of the tomb of Archbishop John Peacham (d.1292) at Canterbury Cathedral. That the canopy possessed flanking pinnacles is indicated by the presence of brown mortar fillings behind the inner faces of the nook-shafts framing the elevation, rising on the west to the base of the top course of the recess (some 1.6 metres above the top of the string-course, which probably represents the springing of the arch). This mortar seals remnants of the thin plaster coating which supports painted ashlar-lining elsewhere in the chapel, also indicating that it is secondary.

3.2.3.3 A tomb of this type would also probably possess a series of projecting panels at the base decorated with saints or weepers, but there is no evidence of cramps to retain these, and they may have been fixed back into the top bed of the upper complete course of ashlar, the evidence now concealed beneath the 1969 stonework. On top of this would have lain the effigy, with the recess flanked by the buttressing beneath the pinnacles and the lower cusps of the arch.

3.2.3.4 The scar from the destruction of the similar arch and gable wall monument of Bishop Adam Houghton (d.1389, tomb by ?1372) at St Mary's College Chapel, St Davids Cathedral (Pemb.) shows a similar overall form, but,

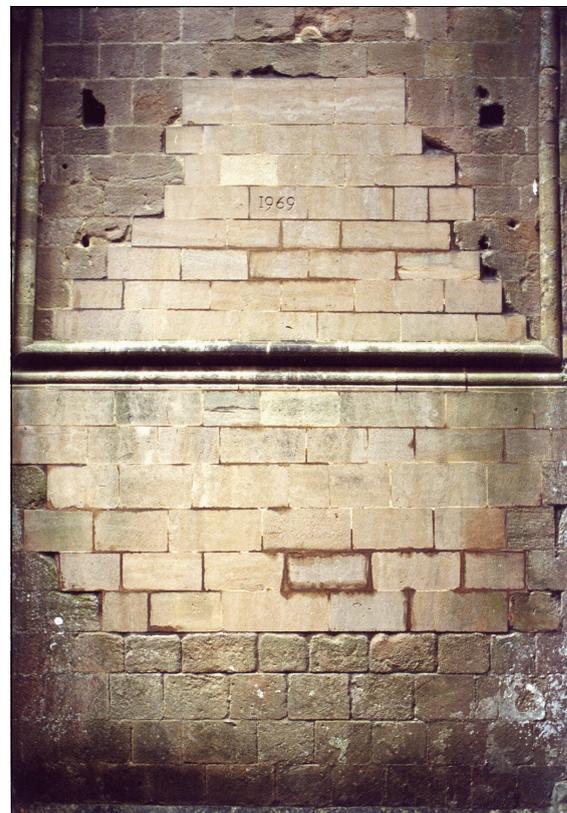


North Wall of St Thomas' Chapel - monument of ?John of Taunton (d.1291)

Left: Sockets of lost iron cramps which may originally have held decorative stone panelling above the monument (the four large holes are constructional putlogs).

Below right: the 1969 patching of the recess of the lost monument

Below left: the comparable scar of the lost monument of Bishop Adam Houghton (d.1389) in St Mary's chapel at St Davids Cathedral (Pembs.).



because the monument was built up with the wall, the form of the lost ashlar can be seen, giving a much more complete idea of the shape and construction of the tomb. In St Thomas's Chapel the only clue as to the form of the superstructure of the monument is provided by the presence of a series of seatings for iron cramps. The majority of these lie in three horizontal registers, each roughly a metre apart, at 2.95, 3.9 and 5 metres above the sill-level string-course, and rather than being associated with the triangular superstructure of the gable, they appear to relate to courses of applied stone panelling fixed to the wall above and to either side of the tomb canopy.

- 3.2.3.5 Of the horizontal registers of cramp-holes the uppermost set is the most irregular, there being a group of eight rectangular slots (one of which, centred on an incised 'X', has been filled) forming two lines. Below this is a single register of five rectangular holes, with seven smaller holes roughly on the same line and two below. The third horizontal line consists of four rectangular holes, with five smaller drilled holes at a similar level. These lines lie roughly a metre apart, and it is important to note that further rectangular holes exist in the spandrels to either side of the arch scar: two a metre down at a point coinciding with the top of the repaired scar, and another pair (with an outlier at east) a metre further down the wall, probably lying at the point where the arch diverged from the pinnacle. Five regular tiers of cramps suggests the fixing of five courses of metre-high stone panelling bearing decorative carving - though whether diaper-work or richer architectural or sculptural decoration cannot be inferred. It is of interest to note, however, that the putative tomb chest (which at this date may have borne weepers or saints) would have been of approximately the same height as each course of the panelling.¹⁴

3.2.4 Dating and attribution

- 3.2.4.1 At least three major tombs appear to have been erected in or near St Thomas's Chapel in the second half of the thirteenth century. Michael of Amesbury (1235-52), whose legal skills restored much of the alienated property of the abbey, and whose administrative abilities much improved the

¹⁴ Of the comparable tomb of Bishop Houghton the Elizabethan Tomkyn Manuscript mentions '*paintings of the windows of his college, & about his tomb*', suggesting that such decoration above and around tomb canopies may have been an established practice.

profitability of its agricultural holdings,

‘...was the first abbot to be buried in the new church, before the altar of St Thomas in the north transept. His epitaph laid particular stress on his accomplishment in breaking the chains of Glastonbury’s bondage to the episcopal see [of Wells].’¹⁵

In 1272 Robert of Petherton (1261-72) was buried shortly after Easter ‘*at the feet of Michael of Amesbury before the altar of St Thomas Becket in the north transept*’,¹⁶ while his successor, John of Taunton (1274-91), in 1291

‘...left Glastonbury to attend the funeral of Queen Eleanor and caught a cold which led to serious complications. Soon afterwards he died and was buried near his immediate predecessor on the south side of the north transept.’¹⁷

3.2.4.2 It is tempting to suggest that the popularity of the Chapel of Thomas as a place of burial in the second half of the thirteenth century may have been the result of Michael of Amesbury creating the sumptuous decoration of the north and east walls as part of his own funerary arrangements, and that his two immediate successors chose to avail themselves of these surroundings to vicariously aggrandise their own burials. However, the form of the scar for the recess on the north wall suggests a date around 1290, and it is likely on art historical grounds that the tomb belonged to John of Taunton.

3.2.4.3 Arch and gable tombs are a hallmark of the Decorated style. Beginning with double (Bishop Bridport (d.1262), Salisbury Cathedral) or triple gabled designs, as in the tomb of Archbishop Walter de Gray (d.1255) at York, or Bishop Peter of Aigueblanche (d.1270) at Hereford Cathedral, by the 1280s the single-gabled wall recess or freestanding monument flanked by pinnacles had developed, as in the tomb of Bishop John de Bradfield (d.1283), at Rochester Cathedral. ‘*Archbishop Peacham’s tomb, with its arch-and-gable, pinnacles and weepers, was the first in the series of so-called Court tombs that were made for the next fifty years*’¹⁸, however, so close to the form of Peacham’s tomb is that which seems attributable to John

¹⁵ Carley 1988, p.32.

¹⁶ Carley 1988, p.35.

¹⁷ Carley 1988, pp.37-8.

¹⁸ Coldstream 1994, p.138 and fig.84. See also Williamson in Alexander and Binski 1987, p.104.

of Taunton that his monument may actually have had that status. The addition of applied diapered or sculpted facing blocks filling the wall above the canopy would have put Abbot John's monument in a class of its own.

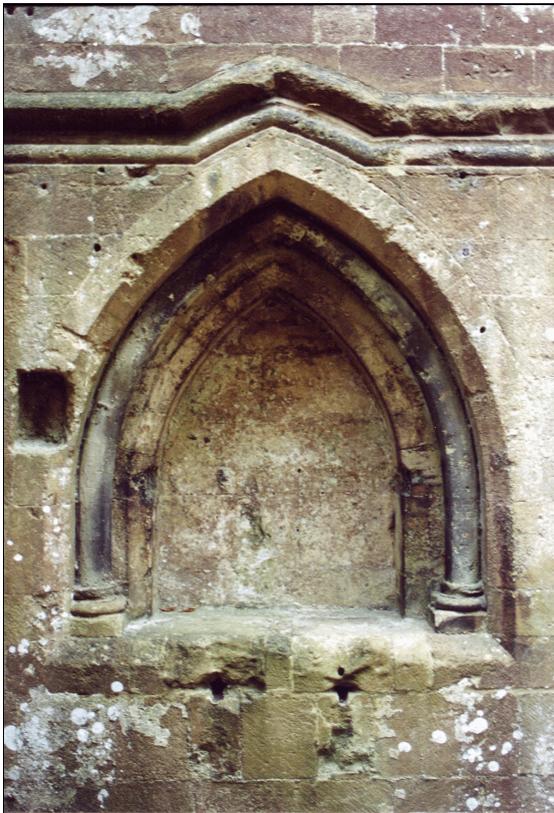
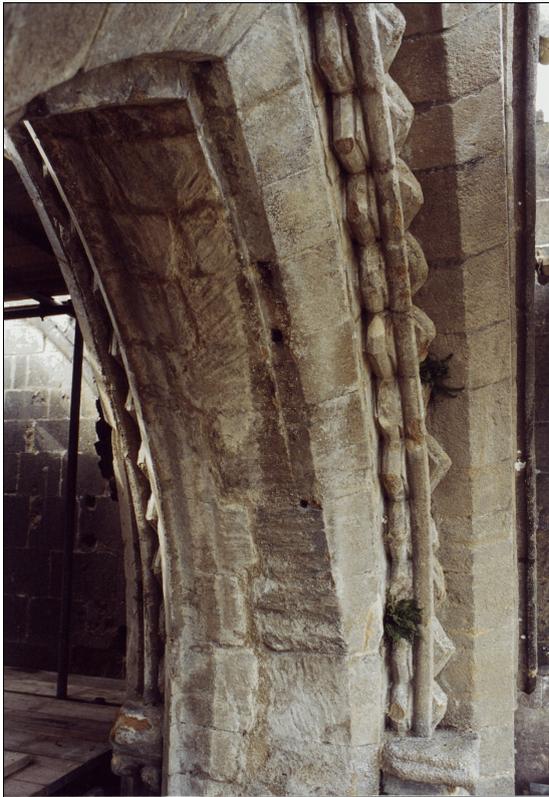
3.2.5 The piscina and associated fittings

3.2.5.1 The south wall of the chapel of St Thomas has as its main surviving feature the double piscina which served the altar. This, in addition to a series of fixings which surrounded it, appears to have been substantially remodelled in the middle ages.

3.2.5.2 The piscina in the northern chapel, like that in St Thomas's chapel, had a double drain, but the remaining fragments show that the former had its drains located in the thickness of the wall, and probably discharging vertically. The remaining drains in St Thomas's chapel, however, appear to have been positioned on corbelled projections set out beyond the wall face, with the drainage channels running back southwards into the wall at approximately 15°. There is evidence that this piscina has been altered, since the stones on which the drains appear to have been located seem to have been cut into the 'shelf' at the base of the piscina arch, leaving narrow north-south 'strips' of stone at the two outer edges and the centre. Beneath the drains the two stones have been worked back, leaving the eastern with its lower sinister corner projecting slightly from the wall face, and with traces of rough-tooling of the face and of mortar infill to deeper cutting-back at lower dexter; the western drain corbel shows traces of a ridge at its western edge, with deep breakage at the lower margin.

3.2.5.3 Thus it would appear that subsequent to its creation the two drains were replaced with drains projecting forward from the wall face, and it may be that the impetus for this alteration was the installation of an aumbry cupboard in the arched recess above, encroaching on the position of the earlier drains. The evidence for this is only slight, but there are shallow square-cut recesses on the jambs of the piscina arch a little below the springing point which seem to have been designed to accommodate a shelf, and it is possible that this is part of an inserted wooden cupboard which occupied the rear part of the arch. This may be part of the general refurbishment of the chapel around 1291 when the tomb of Abbot John of Taunton appears to have been created on the opposite wall, and new vessels supplied for the chapel may have been stored here.

3.2.5.4 The arched recess retains plentiful traces of medieval paint, with green pigment remaining on the north face of the inner moulding of the arch



Above: The late twelfth century east window of the chapel of St Thomas, like the windows of the south nave aisle, shows signs of having been adapted to receive tracery at a later date, with the trimming-off of the chamfer towards the outer elevation removing much of the original step into which the early glazing was secured.

Left: the surviving piscina in the south wall of St Thomas's Chapel (retaining plentiful traces of painted ashlar lines on the background) has had its projecting drains cut back exposing the drainage channels. The scar of a similar piscina survives in the chapel to the north.

(particularly on the eastern side of the arch), and major traces of white limewash / plaster grounds on the background, where traces of ashlar lining in black (?discoloured vermilion) and dull orange survive. In the back of the recess four iron pins have been set, with a void perhaps for a central fifth, set in a quincunx formation. The top central pin is certainly a nail with a more or less circular head, and this suggests that these secured a plate of some sort.

3.2.5.5 Above and around the arch of the piscina there are no fewer than 14 drilled holes of various diameters. Some of those to the east may relate to the reredos, or to features which preceded its erection; others may relate directly to the piscina itself, amongst which are the three small (apparently filled) fixings into the mouldings at the apex where the string-course rises slightly over the top of the arch, which could have secured a small ?metal plate. It seems likely that the three holes set almost vertically one above the other to the west of the arch head have counterparts in the holes to the east of the arch head, and that these may have secured decorative adjuncts to the spandrels on either side of the arch.

3.2.6 Alterations to the window tracery of St Thomas's chapel

3.2.6.1 As in the windows of the south nave aisle there is clear evidence in the east window of St Thomas's Chapel that later tracery has been inserted within the late 12th century opening. The stonework of the reveals has been worked back leaving a pecked surface for increasing the adhesion of the mortar fixing the new inner orders; on the lower part of the north side a distinct ridge has been left at the outer angle where the new stonework was fitted against the jamb. On the outer jamb the whole of the squared rebate which would have held the 12th century glazing frame has been cut away (taking the fixing points for the ferramenta with it), while on the inner part of the jamb the reveal has been worked to a shallow hollow - presumably to carry the outer part of the new jamb moulding. The new stonework was sufficiently deep that the holes for fixing the saddle-bars have not cut through into the earlier jamb.

3.3 Traces of fittings in the north-eastern chapel

3.3.1 Whereas the chapel of St Thomas has scars on its eastern wall suggesting the former existence of a reredos which rose to at least 90 cm above the top

of the horizontal sill-level string-course, the chapel to the north has clear indications of an even taller screen against the east wall which rose at least 40 cm higher. Here the framing string-course which rises from the horizontal sill-level string has been worked back by 2 cm to form a flat face on its northern side, while the west face of the adjacent attached shaft in the south-east corner of the chapel has also been worked back by 4.5 cm to a vertical face, the latter extending to 1.3 m above and 1 m. below the string-course - an overall height of 2.6 m.. Two rectangular areas have been worked back more deeply, and it is possible that these represent significant architectural divisions of the reredos. There are a number of drilled holes adjacent to the corner on the south wall which may also relate to this feature.

3.3.2 The south wall of the chapel seems to have had an attached feature immediately above the sill-level string-course, since the inner faces of the angle shafts in the south-east and south-west corners have been broken or cut away for 20-25 cm, while there is a rectangular recess (resembling a putlog hole, but placed centrally, and well above the lift) centred 2 m. above the string which may be an additional fixing for whatever stood here.

3.3.3 At high level there are two pairs of drilled holes for lost fixings: the upper pair, which seem to have supported a bar running the whole width of the elevation, just below the level of the upper putlogs; the second pair, 30 cm below this, 3 cm in diameter and 10 cm deep, perhaps supporting a single object beneath this. Further drilled holes exist in the lower register of this elevation, some of which to the east of the arch over the piscina may have been associated with fixing a decorative element above the latter.

3.4 Exterior features

3.4.1 At the bottom of the exterior elevation of St Thomas's Chapel much of the facing ashlar has been lost exposing the core-work, but at the northern margin of the bay the ashlar survives, and at its junction with the buttress on the south side bears a small patch of mortar, suggesting that a structure may have been built up against the wall here in the middle ages.

3.4.2 The traces left by the rainwater disposal system are very similar to those on the exterior of the north-east chapel of the south transept. The gutter which fed the down-pipe has been lost on the north transept, but it evidently matched that surviving on the south transept, carrying water from the angle of the aisle and discharging above the south end of the transept aisle elevation. There is no direct evidence of the presence of a rainwater hopper

(the more complete south transept has not been scaffolded at this point during the present conservation programme), but the line of the drain pipe is preserved by the sequence of fixings for six lead straps which secured it to the wall. These were fixed to either side of the pipe with three pins set in 2.2 cm diameter drilled holes centred 5 cm apart and around 9 cm deep, the straps lying a little under 1 metre apart, the gaps between them, and the width of the slot cut through the window-head string-course suggesting that the pipe was around 15 cm wide.

- 3.4.3 The line of the pipe was slightly diagonal, running in a virtually straight line from the angle with the north choir aisle to the outside face of the latter's plinth.

4 Post Medieval Fabric and repairs

4.1 Seventeenth century graffiti

4.1.1 On the north-eastern angle of the main crossing pier (effectively the south-western corner of the west bay of the north choir aisle) the initials of at least three (and perhaps as many as six) individuals were incised on Dundry stone roll mouldings in 1638:

- The clearest of these three graffiti lies approximately 3¾ metres above the present ground level and has been cut into the southern of the two roll-mouldings of the north east angle of the pier, it comprises the initials 'MR', with the date '1638' beneath, each enclosed in a rectangular border.

- Similar in style is a second graffito on the roll moulding to the north and a little above, with the 'boxed' initials 'IC', the date '1638' beneath, and following the initials a numeral '6'. It is possible that the '6' indicates June.

- The least clear inscription lies on the same roll moulding as the first, and appears originally to have consisted of four lines with three sets of initials, the last being followed by the date and the third line now containing only a '+' sign, but perhaps having once included initials. The weathering and lightness of the incisions has rendered parts of this illegible, it appears to read: 'CK / J.[?] / + ...[?] / IG 1638'.

4.1.2 Both the height and the date of the inscriptions are intriguing. At 12 feet or more above the existing ground-level the graffiti imply either ladder / scaffold access, or a much higher ground surface in 1638. Is it possible that the vaulting of the north choir aisle had only recently collapsed, and that the resultant rubble enabled M.R. and his companions to scramble up and reach the top half of the arcade respond? Or were these the workmen who were engaged in the demolition of this part of the building, working from the first lift of a scaffold erected for the purpose of taking down the arcade and north aisle vaulting?

4.1.3 The fact of the inscriptions all being cut in the same year of 1638 tends to support the idea that a scaffolding may have been present, since, if the pier were simply surrounded by collapsed masonry, more varied dates might have been expected to have been cut into the stonework.



Three graffiti dated 1638 survive on the north-eastern crossing pier well above the height which could be reached from the present ground-level. Could they have been cut by men who were working on the demolition of the ruin?

The remarkable symmetry of the surviving ruin suggests that this is the result of the deliberate 'farming' of the stone in the great church while it was being used as a quarry, probably during the mid to late sixteenth and early seventeenth centuries - Hollar's distant prospect of the abbey in the mid-seventeenth and the early eighteenth century drawings of the ruins show that the greatest part of the destruction had already taken place.

It is also of interest that the two best preserved fragments of the church (the almost symmetrical eastern crossing piers) contain the main stairs and the passages to reach them - these were presumably used to give access to the areas under demolition, thus minimising the need for scaffolding. Ironically, if demolition on the north side of the choir was indeed underway in 1638, it may be that the disruption of the Civil War saved what little still remained of the ruin from further damage.

4.2 Pre-twentieth century repairs

4.2.1 On the north face of the choir triforium, occupying the lower 2.5 m of the elevation and bordered to the east by the Caröe capping of the eastern face of the choir masonry, is a strip up to 80 cm wide which has different coursing to the surrounding fabric, and whose surface morphology does not match the character of either the medieval or the 1910 fabric. At present it is cement pointed, but its lack of resemblance to the Caröe repairs shows that it is not part of that campaign of repair, and it seems likely that it is a survival from an earlier attempt to stabilise the eastern margin of the ruin.

4.2.2 On the east elevation of the arch from the north choir aisle into the transept the southern ashlar over the arch are displaced somewhat from the line of the wall face, and it seems possible that these stones have been rebuilt (probably using the original masonry) at some point prior to 1910. Above this, in the super-arch immediately above the vaulting, the voussoirs on the north side incorporate two ceramic spacers.

4.3 The Caröe repairs of 1909-10

4.3.1 A photograph taken by J.R.H. Weaver was published in PSANHS¹⁹ to illustrate the visit to the abbey made by the society in 1910 as part of their annual excursion. On this occasion,

‘...about 130 members, in spite of the inclement weather, assembled at Glastonbury Abbey for the purpose of viewing the excavations and the work of preservation of the ruins which were proceeding.’²⁰

4.3.2 Regrettably the summary of the event concentrates exclusively upon the excavations, but the photograph shows the view across the western bay of the choir looking north-north-west. The scaffolding had been taken down from the south-eastern crossing pier and had exposed the new stonework of the eastern corbelling and arcade springing; new stonework is not apparent elsewhere in the photograph, except for a single stone near the

¹⁹ PSANHS, vol.IV (1910), facing p.82.

²⁰ PSANHS, vol.IV (1910), p.82.

capital of the eastern jamb of the arch into the choir from the transept aisle. Beyond, to the north, the scaffolding of the north-eastern crossing pier can be seen, and running north through the transept arch is a temporary railway for transporting stone and other heavy items to the repair area; in the distance, just to the south of the scaffolding, a trolley bearing a large stone is visible.

- 4.3.3 This suggests that Caröe and Merrick had found it expedient to establish a workshop somewhere to the south of the crossing, and to bring finished stone up for fixing by a narrow-gauge railway. A similar railway was used in the construction of Truro Cathedral, where Caröe had worked for John Loughborough Pearson. By the time of the Frith photograph of the corresponding view looking south, taken in 1912,²¹ all of this had been cleared away, though the line of the railway can still be traced in the grass across the choir, and there are bare patches beneath the arch into the north transept as a result of the trampling of the grass during the repairs.
- 4.3.4 Caröe's repairs to the main pier resemble those on the south-east crossing pier, with the corbelled out supports in Doulling stone on the east elevation being particularly similar. The capping of the wall cores with coursed lias blocks, or with marlstone in Portland cement (which may actually be the 20th century hard-pointing of original corework) is also common elsewhere on the ruin.
- 4.3.5 The most intrusive repairs at this period were the cappings to the northern margin of the masonry, in which only the southern jamb of the clerestory window represents original fabric, and where areas up to 3 metres wide have been rebuilt or refaced. Throughout these repairs the form of the 12th century architecture has been imitated, so that the triforium super-arch is capped along the lines of the mouldings, the piers and northern spandrel of the blind triforium arcade have been perpetuated in Doulling stone, and the northern side of the west-facing arcade arch, and the capitals and abaci to the north have all been reinstated, though without their mouldings. Above the blind triforium arcade Caröe has reinstated the lozengewise foliate panel as a plain projecting diamond of Doulling.
- 4.3.6 In general Caröe left the renewed stonework with the striations of the toolmarks indicating its date, but a century of weathering has tended to erase this sign of renewal, and it tends to be the openness of the texture of the new Doulling stone which is its clearest indicator (together with the incised dates of 1909 (on the east elevation of the termination of the choir at arcade level) and 1910 (on the north elevation and the west face of the

²¹ Frith Archive No. 64486.

capping at the north of the archway into the aisle). At low level on the northern end of the ruin the restorers appear to have incorporated fragments of original roll-mouldings into the work of the arcade pier - some of them in Dundry stone - and this suggests that pieces either retrieved from the standing ruin or from excavation have been reused in the repair.

- 4.3.7 Caröe has used copper alloy reinforcements (probably Delta metal) in a number of repairs: a bar of this material supports the masonry above the hole left by the removal of the rood beam; copper alloy straps retain the lias shaft on the south jamb of the southern clerestory window of the north transept, and a horizontal bar supports the adjacent capital on the north side of this opening. A Delta metal band has been inserted above the apex of the super-arch over the vaulting of the west bay of the north choir aisle, and cement flashing has been introduced here (possibly at a later date than 1910) to shed water from above this projection.
- 4.3.8 The brick filling of the clerestory level passageway into the north elevation of the pier is of the same type as that on the south transept, and this tends to suggest that the work was carried out as part of the 1908-10 restoration, rather than being of the 1930s. Other work associated with the capping of the stair turret certainly belongs to this phase.

Addendum

Since writing the two previous reports in this series further observations have been made which shed light on the history of the ruins.

Musketry practice in the Abbey precincts

Many instances of damage from musket shot have in the past been identified on historic buildings, but on close examination many of these have proven to be mistaken - the result of other phenomena, usually natural decay - or illusory, often the result of legendary reports rather than bona fide physical traces.

The exceptions are sites where engagements during the Civil War are known to have taken place, as at Malmesbury Abbey, where the west front had a heavy canon installed on the top of the south turret, and a skirmish took place in the churchyard beneath. Here there are numerous shallow circular depressions on the limestone ashlar of the western bays of the nave and the lower part of the west front, and, interestingly, these all lie above a height of a little over a metre and a half, indicating the height of the barricade behind which the defenders sheltered.

Very similar shallow circular depressions, generally around 8-10 cm in diameter, can also be seen at Glastonbury Abbey on the south elevation of the Lady Chapel and the South Nave Aisle, but their distribution suggests musketry practice rather than the more random fire of a military engagement. The marks on the south elevation of the South Nave Aisle are largely absent from the two western bays of the fifteenth century cloister (the half bay containing the western doorway and that to the east of it), form a random scatter in the next two bays, are largely absent from the next (maybe three or four being seen), and then are found in a second scatter in the sixth and seventh bays. It almost appears as if two companies, with a gap between them, were formed up in front of the wall - perhaps ten men across, possibly in more than one row - and ordered to fire their muskets.

The situation on the south side of the Lady Chapel is similar. Here there are shallow circular depressions in the ashlar of the bay to east and west of the south door, with more occasional marks on the buttresses to either side of the doorway. Both here and on the south nave aisle the marks are generally between 1.5 and 3 metres above the present ground level. The shots are not apparently concentrated in one particular area, but rather



Marks of musket fire

Small hemispherical indentations in the ashlar of the south elevation of the nave aisle (above) and Lady Chapel (left) are very similar to those at Malmesbury Abbey, where a skirmish took place during the Civil War, and are probably the result of musket fire.

Their restricted distribution suggests that they were caused by a group of men training - perhaps during the muster of 3,000 militia under Popham and Strode in June 1643.

give the impression of a general fusillade; nor are there particular areas where the depressions are absent, as might be expected if targets had been set up. The use of the abbey's masonry in this way appears to have been fairly restricted, since there are no such marks on the north elevation of these walls, and they have not been noted elsewhere on the building.

The likeliest period for musketry in the Abbey precincts seems to be the Civil War, in which Glastonbury was only peripherally involved.

On 9th June 1643 Edward Popham and William Strode assembled 3,000 militia at Glastonbury to halt the advancing royalists under the Marquess of Hertford, but in the face of his superior force they withdrew, falling back to Bath by the end of the month.²² During Hertford's advance Richard Atkyns, one of his cavalry captains was billeted in the town,

‘That day I went to my quarters at Glastonbury, where there was a handsome case of a house, but totally plundered, and neither had bread or beer in it; but only part of a cheddar cheese, which looking blue, I found my foot-boy giving it to my greyhounds, and reproving him for it; he cried, saying there was nothing else to give them.’²³

In early April 1645 Lord Goring's royalist army, falling back under a counter-attack from Sir William Waller, moved into Glastonbury and Wells, but by the 10th April Goring was at the siege of Taunton.²⁴

On either occasion the central open space of the Abbey precinct would have been an obvious venue for drilling and practice, and probably also for the tented encampment of the various forces. Goring's men, however, were in large part cavalry, and in the spring of 1645 were also unpaid and out of control, subjecting those parts of Somerset through which they passed to a reign of terror, and, as John Oldmixon writing 90 years later observed,

‘...committed so many acts of cruelty and rapine that his name is infamous there to this day, especially about Taunton, which town he besieged; and during the siege, his soldiers made themselves terrible by continual butcheries, rapes and robberies, insomuch that the name of Goring's Crew is even

²² Wroughton 1999, p.272.

²³ Peter Young and Norman Tucker (eds.) *Richard Atkyns and John Gwynn*, 1967, p.13. quoted in Wroughton 1999, p.135.

²⁴ *ibid.* p.279.

now remembered with abhorrence.²⁵

The scatter of musket shot on the Abbey walls seems much more appropriate to a trained and disciplined group of soldiery, such as the militia assembled by Popham and Strode in June 1643.

²⁵ Oldmixon 1735, p.278. See also Wroughton p.147-8 for a contemporary report of the depredations in the wake of Goring's passage across Somerset in May 1645.

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No.	Site	Description	Technical information	
Film title: 2005/53/31 to 36				
53/31	Glastonbury Abbey	NE choir pier: southern respond of arch at W end of N choir aisle - cut-away sections to house screen	50mm macro lens	P
32		ditto, northern respond of arch at W end of N choir aisle - cut-away sections to house screen		P
33		NE choir pier: mortar channels and cut-away at base to house parapet of pulpitum		P
34		SE choir pier: lower section of north elevation from N pier scaffolding to show traces of pulpitum		P
35		NE choir pier: traces of cutting-back for screenwork on N respond [W side of N Transept E aisle]		P

Film: Kodak Professional Elite UC200-135-36

Date: 3-7 June 2005

Camera: Olympus OM4 with 28mm f.3.5, 35mm shift f.2.8, 50mm macro f.3.5 Zuiko lenses and Olympus T32 flashgun

No.	Site	Description	Film title: 2005/54/-1 to 21	
54/-1	Glastonbury Abbey	NE choir pier: southern respond of arch at W end of N choir aisle - cut away in abacus to house cross-beam	50mm macro lens	L
0	NE crossing pier	ditto, semi-circular cutaway recess in S side of vault rib against E face of N choir aisle W wall		P
2		SE crossing pier, N elevation, from pulpitum parapet to above rood beam, general view from NE pier scaffold		P
3		NE crossing pier: Monington period springer at base of C14 panelling		P
4		St Thomas' Chapel, E window, S reveal showing adaptation of C12 jambs for renewed tracery	35mm shift lens	P
6		ditto, E wall, showing holes for attaching medieval rainwater pipe		P
8		St Thomas' Chapel, upper part of north wall, showing regular fixings points	28mm lens	L
10		ditto, south wall, traces of red semée ornament	50mm macro lens	L
11		ditto, ashlar lines		L
15		ditto, ashlar line		?
16		ditto, detail of red semée ornament		?
17		ditto, east wall, traces of mortar from lost feature, north side of E window		P
18		ditto, east wall, traces of mortar from lost feature, south side of E window		P
20		ditto, east wall, traces of mortar from lost feature, north side of E window, more general view than frame 17		P

Film: Kodak Professional Elite UC200-135-36

Date: 17-18 June 2005

Camera: Olympus OM4 with 28mm f.3.5, 35mm shift f.2.8, 50mm macro f.3.5 Zuiko lenses and Olympus T32 flashgun

No.	Site	Description	Technical information
Film title: 2005/60/13 to 37			
60/13	Glastonbury Abbey	St Thomas' Chapel interior, S wall, upper lift: masons mark	50mm macro lens P
15		ditto, western entrance arch soffit, north side, remains of ashlar lining, upper section	+ T32 flashgun P
18		ditto, slightly higher to show both lines	P
19		ditto, south side of arch, apex	P
21		ditto, detail of area halfway down on upper north	P
24		ditto, eastern arch head, interior, north side, survival of red paint on angle of tooth	L
26		NE crossing pier, NE angle: 1638 graffito - MR	P
27		ditto - IG	P
28		ditto - with list of initials	P
33		S transept, NE chapel, general view of N elevation	35mm shift lens P
34		ditto, detail of marks left by wooden screen on western pier	50mm macro lens P
35		SE crossing pier: western elevation, showing base of Bere's scissor arch	35mm shift lens P
36		ditto, base of scissor arch looking down	L

Film: Kodak Professional Elite UC200-135-36

Date: 18-21 July 2005

Camera: Olympus OM4 with 28mm f.3.5, 35mm shift f.2.8, 50mm macro f.3.5 Zuiko lenses and Olympus T32 flashgun

No.	Site	Description	Technical information
Film title: 2005/61/0 to 22			
61/5	Glastonbury Abbey	S transept triforium, east elevation, lower stonework	135mm lens L
6		ditto, upper stonework	L
7		ditto, clerestory, east elevation	P
8		East end of choir, exterior, southern baulk of masonry looking west, showing rainwater channel	35mm shift lens P
10		South Nave Aisle, south elevation, western section	P
11		ditto, next cloister bay east	P
12		ditto, next cloister bay east	P
13		ditto, next cloister bay east	P

No.	Site	Description	Technical information
14		ditto, next cloister bay east	P
15		ditto, next cloister bay east	P
16		ditto, next cloister bay east	P
17		ditto, next cloister bay east	P
18		ditto, area of cloister most affected by musket shot (east of bench)	L
19		Lady Chapel, south elevation, western bay, arcade area showing musket shot marks	P
20		ditto, lower part, showing musket ball marks	L
21		ditto, bay to east of south door, arcade area general view	P
22		ditto, lower part, showing musket ball marks	L

Film: Kodak Professional Elite UC200-135-36

Date: 21-22 July 2005

Camera: Olympus OM4 with 28mm f.3.5, 35mm shift f.2.8, 50mm macro f.3.5 Zuiko lenses and Olympus T32 flashgun

No.	Site	Description	Film title: 2005/65/4 to 37
65/4	Glastonbury Abbey	NE crossing pier: SE angle, looking up to apex - springing of Monington's choir vault	50mm macro lens P
7		ditto, S elevation: springer of Bere's fan-vaulting, below	P
10		ditto, SW angle, lower roughly cut hole [?for restraint of great rood], looking ENE	P
12		ditto, upper roughly cut hole, general view of reworked area	P
13		SE crossing pier, upper central area from northern scaffolding	P
14		ditto, upper area from northern scaffolding	P
15		NE crossing pier, E elevation: E face of western choir window, showing 'outer glazing line'	P
17		ditto, N elevation of choir wall - showing triforium roof lines and associated corbels	P
19		ditto, W elevation: triforium foliate spandrels - centre	L
20		ditto, southern	L
21		ditto, including capital	P
22		ditto, southern arch head	L
29		ditto, southern opening, south spandrel, green paint on chamfer	L
30		ditto, second area	L

No.	Site	Description	Technical information
31		ditto, general view to show areas of pigment retention	L
32		ditto, southern jamb of opening, 2nd joint down, red paint on joint [?ashlar lining]	P
33		ditto, southern wall-plate roll moulding - red paint in angle with wall	P
34		ditto, second area	P
35		SE crossing pier, upper centre area viewed from N scaffolding	35mm shift lens P
36		ditto, upper area	P
37		NE crossing pier S elevation, 4th lift down, Monington period panelling of choir	P

Film: Kodak Professional Elite UC200-135-36

Date: 2 August 2005

Camera: Olympus OM4 with 28mm f.3.5, 35mm shift f.2.8, 50mm macro f.3.5 Zuiko lenses and Olympus T32 flashgun

Film title: 2005/66/00 to 36

66/3	Glastonbury Abbey	N transept, E elevation, lower sector - worked back pair of corbels	50mm macro lens
4		W elevation, triforium arcade, southern arch head spandrels	
5		ditto, centre arch head spandrels	
6		ditto, southern arch head, southern spandrel and capital, looking SE	P
7		NE crossing pier, S elevation (W), marks in SW angle ?associated with restraints to rood	P
11		Choir, at base of triforium level, 1909 corbelling with ?earlier reinforcement to W	L
13		ditto, wider view	35mm shift lens P
15		N Transept, W elevation, triforium arcade, spandrel	L
16		ditto, traces of red paint in angle with roll moulding of super-arch, south side	50mm macro lens P
17		ditto, second area	P
18		ditto, triforium arcade, chamfer beneath southern spandrel of south opening - traces of green paint 1:2	L
19		ditto, second area	L
20		ditto, third area	L
21		ditto, fourth area	L
27		N Transept, E elevation, general view	35mm shift lens P
28		N Choir Aisle, W bay, remains of vault at western side	L

No.	Site	Description	Technical information
29		SE crossing pier, N elevation, upper part, general view from 4th lift of NE pier scaffolding	P
30		ditto, middle section	P
31		NE crossing pier, junction with Monnington panelling, coursing mismatch on 4th lift down between C12 and C14 work	50mm P
32		ditto, 4th lift down - hole drilled at apex of Monnington panel	P
36		N Transept, W elevation, rebuilt central and northern pier of arcade, looking NE	P

Film: Kodak Professional Elite UC200-135-36

Date: 2-8 August 2005

Camera: Olympus OM4 with 28mm f.3.5, 35mm shift f.2.8, 50mm macro f.3.5 Zuiko lenses and Olympus T32 flashgun

No.	Site	Description	Film title: 2005/67/0 to 37
67/5		NE crossing pier, large void in SW angle - from withdrawal of rood beam?, looking N	35mm shift lens P
8		SE crossing pier, blocking of hole left by withdrawal of rood beam?	135mm lens P
9		ditto, area around position of rood beam	50mm macro lens P
10		N Transept, W elevation, hole cut above apex of arch into N choir aisle	P
12		NE Crossing pier, traces of parapet of pulpitum - square recess and mortar channels at top	35mm shift lens P

Film: Kodak Professional Elite UC200-135-36

Date: 8 August 2004

Camera: Olympus OM4 with 28mm f.3.5, 35mm shift f.2.8, 50mm macro f.3.5 Zuiko lenses and Olympus T32 flashgun

			Film title: 2005/68/0 to 37
68/0	Glastonbury Abbey	North Choir Aisle, W bay, W elevation: traces of ashlar lining at southern margin of tympanum, upper set	50mm macro lens P
1	North-East Crossing Pier	ditto, closer view	P
6		ditto, N arch into transept, remains of medieval repair with leaded dowel, from dexter	50mm macro lens L
8		ditto, frontal	P
19	North-East Crossing Pier	E elevation, apex	135mm lens + doubler - under-exposed P
21		S elevation, apex, from SSW	P

No.	Site	Description	Technical information
22		N Transept, N wall: blocked doorway at N end of east aisle, from north	50mm macro lens L
26		ditto	28mm lens P
27		ditto, from south	L
28		ditto, from west	L
29	South-East Crossing Pier	S wall of choir triforium, general view	135mm lens P
31		ditto, S wall of choir clerestory	P
32		ditto, E jamb of Monington period window in W choir bay, looking W	P
37		Choir E wall, exterior, southern baulk of masonry showing internal water chute	P

Film: Kodak Professional Elite UC200-135-36

Date: 11 August 2005

Camera: Olympus OM4 with 28mm f.3.5, 35mm shift f.2.8, 50mm macro f.3.5 Zuiko lenses and Olympus T32 flashgun

No.	Site	Description	Film title: 2005/69/00 to 36
69/0	Glastonbury Abbey	Interior, S wall, mason's mark near apex of wall	50mm macro lens P
3	St Thomas's Chapel	Interior, W wall, E elevation: red ashlar line on roll-moulding	P
5		ditto, red ashlar lining on northern soffit W of mouldings, upper line	L
11		Exterior, W wall, W elevation: red edging on soffit zigzag	P
12		ditto, ochre and ashlar lining on plain soffit	P
13		ditto, red in stepped moulding between rolls	P
14		ditto	P
15		Interior, W wall, E elevation, red ashlar lining on northern soffit W of mouldings	P
16		Exterior, W wall, W elevation: outer zigzag with red edging and central pink/ochre motif	P
17		ditto, red edging on soffit zigzag	P
20		ditto, red in stepped moulding between rolls	+ T32 flashgun P
22		ditto, second area	P
26		ditto, soffit and roll west of zigzag mouldings: ochre and ashlar lining	P
28		ditto, red in stepped moulding behind zigzag	P
30		ditto, soffit and roll west of zigzag mouldings: ochre and ashlar lining	+natural light P

No.	Site	Description	Technical information
32		ditto, blue line on soffit west of mouldings, south side of arch	+ T32 flashgun P
34		South wall, interior, mason's mark	+ natural light L
36		North wall, interior, upper section - marks of fixings above ?monument	L

Film: Kodak Professional Elite UC200-135-36

Date: 11-12 August 2005

Camera: Olympus OM4 with 28mm f.3.5, 35mm shift f.2.8, 50mm macro f.3.5 Zuiko lenses and Olympus T32 flashgun

Film title: 2005/70/00 to 34

70/1	Glastonbury Abbey	East wall, interior, northern arch-head of window, looking NNW	28mm lens P
2	St Thomas's Chapel	ditto, southern arch-head of window, looking SSW	P
5		ditto, lower moulding of sill-level string-course, northern end, cut away for reredos?	50mm macro lens P
11	North-east crossing pier	Recess and mortar channels for parapet of pulpitum (upper part) looking north	P
14	North-east crossing pier	Mortar channels for parapet of pulpitum (lower part) looking north	P
15		ditto, looking east	P
22	South Transept	arch into south choir aisle, frontal	35mm shift lens P
23		east wall of northern chapel, frontal	P
30	N Transept N Chapel	South wall, interior, ochre with traces of red paint 1:2	50mm macro lens +natural light P

Film: Kodak Professional Elite UC200-135-36

Date: 12 August 2005

Camera: Olympus OM4 with 28mm f.3.5, 35mm shift f.2.8, 50mm macro f.3.5 Zuiko lenses and Olympus T32 flashgun

No.	Site	Description	Film title: 2005/96/0 to 19
96 /0	Glastonbury Abbey	N Transept, St Thomas's Chapel: area of 1969 repair on N wall	28mm lens P
1		ditto, upper part of elevation	P
2		ditto, piscina in south wall	50mm macro lens P
3		ditto, upper part of south wall	28mm lens P

No.	Site	Description	Technical information
4		ditto, SW respond of chapel looking S, with N choir aisle arch	35mm shift lens P
5		ditto, NW respond of chapel, looking N	P
6		ditto, E wall, southern area showing marks left by reredos	P
7		ditto, E wall, northern area showing marks left by reredos	P
8		N Choir aisle, N wall, two western bays, general view looking north	L
9		NE crossing pier, general view looking W	P
10		ditto, general view looking N	P
11		ditto, general view looking E	P
12		ditto, general view looking SE [tree]	P
13		ditto, general view looking SSW	P
14		N Transept, northern chapel, S wall, general view	P
15		NE crossing pier, general view looking W	135mm lens P
16		SE crossing pier, general view looking WSW	P

Film: Kodak Professional Elite UC200-135-36

Camera: Olympus OM4 with 28mm f.3.5, 35mm shift f.2.8, 50mm macro f.3.5 Zuiko lenses and Olympus T32 flashgun

Date: 24 November - 2 December 2005