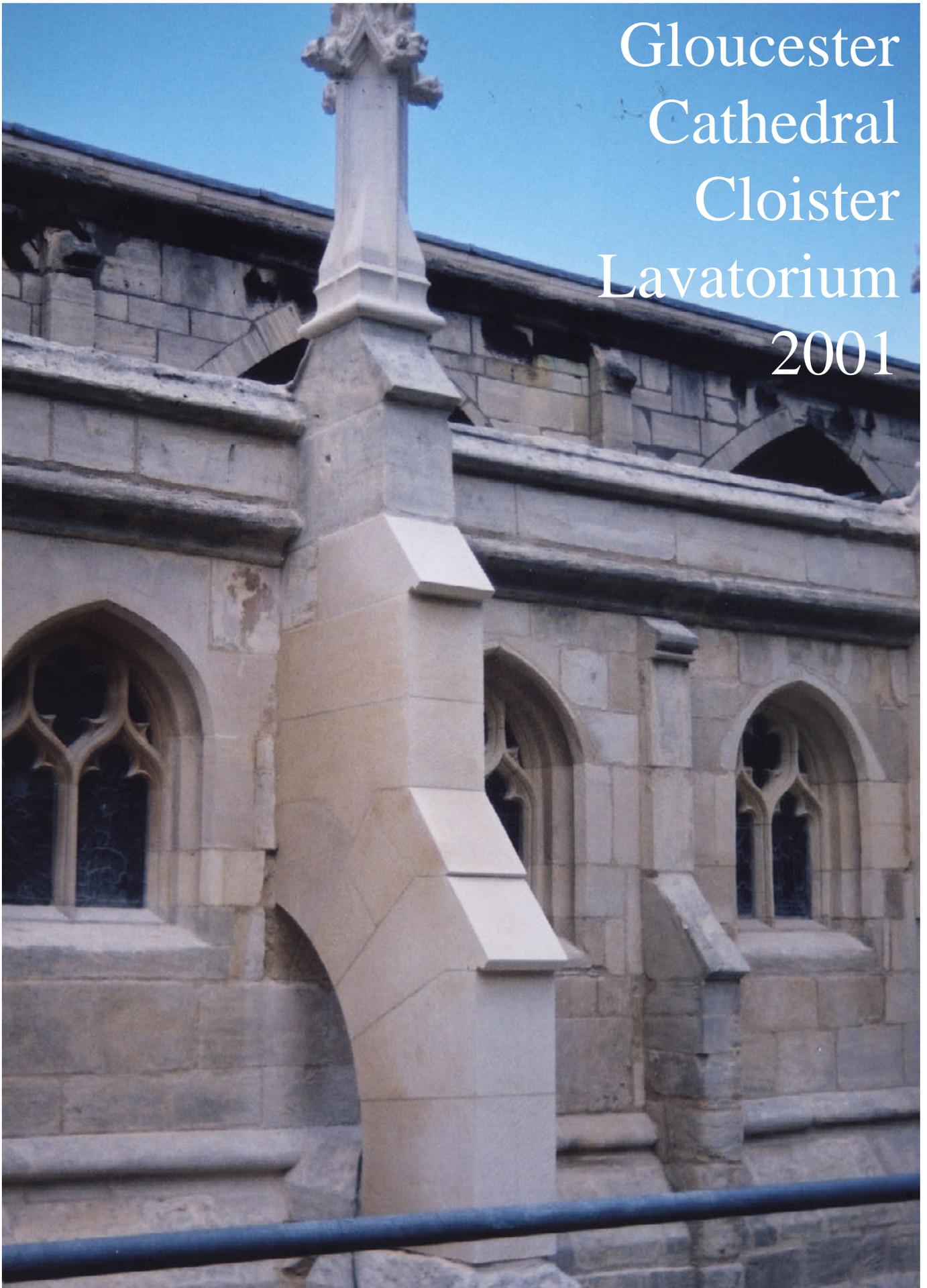


Gloucester
Cathedral
Cloister
Lavatorium
2001



GLOUCESTER CATHEDRAL CLOISTER
LAVATORIUM BUTTRESSES
2001-3

An archaeological report, incorporating archaeological assessment
by
Carolyn Heighway
and
Survey
by
Pascal Mychalysin

GCAR 99/G
Architect reference number 1900-5034
copyright: authors and Chapter of Gloucester Cathedral
3 March, 1999 updated 7 June, 2001; further edited July 2007.

GLOUCESTER CATHEDRAL CLOISTER LAVATORIUM BUTTRESSES

Summary

The original lavatorium or monks washing place in the north walk of the cloister was built in the late 14th century. In 2000 the lavatorium buttresses were in a poor state of repair and all pinnacles were missing. A programme of conservation and repair was carried out, revealing details of medieval construction techniques.

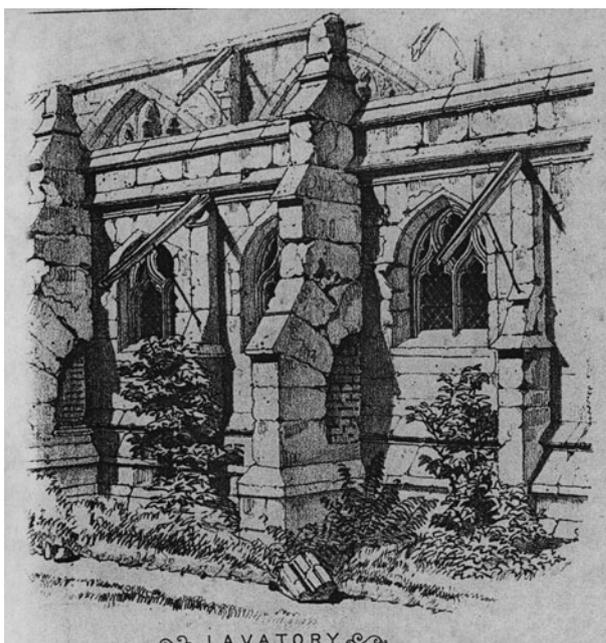
History

The Great Cloister was begun by Abbot Horton before 1364. The southern half of the east walk represents the earliest example of fully developed fan vaulting, dating to the earlier years of the 1350s (Wilson 1980, 260). The cloister was completed in the time of Abbot Frocester 1381-1412; the lavatorium in the north walk was presumably also built at that time.

The lavatorium, the monks' washing place, is a vaulted rectangular space opening out of the north walk of the cloister. In it against the south wall is a stone channel in which the monks washed their hands: the water derived from lead tanks which would have stood on the ledge behind the channel. The tanks were fed by lead pipes from a spring on Robins Wood Hill. Outside in the cloister was an underground stone tank which predated the lavatorium; this tank, possibly originally part of the flushing system for the drains, served as a drain for the waste water which exited via stone channels (Welanders 1991, 223, 229; Heighway 2000).

The original lavatorium was built with modest-sized strip buttresses (FIG 1). It may have been the presence of the buried tank to the south which caused instability: but in due course (early 15th century?) larger arched buttresses were added.

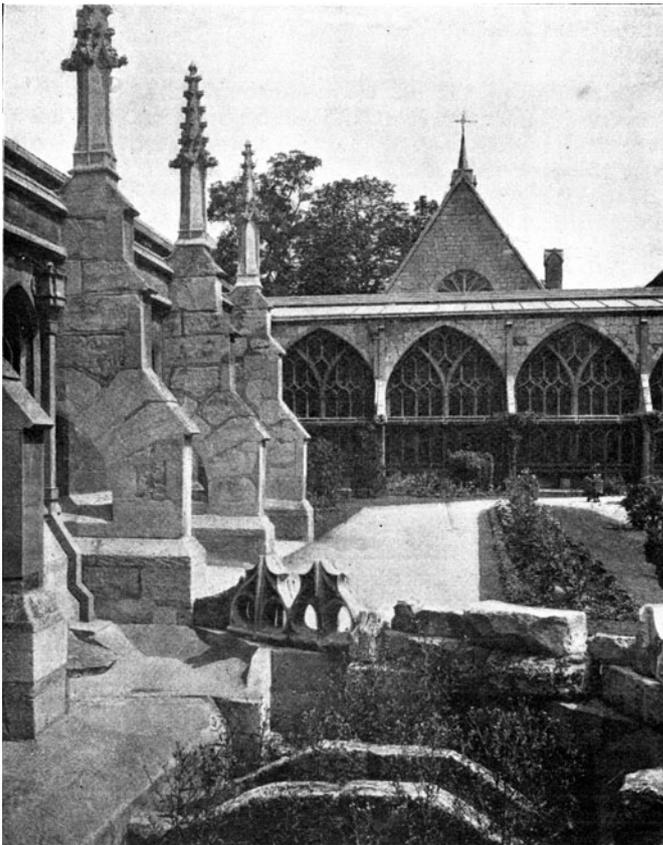
Before the 14th century there would have been another washing-place, possibly not in this position, possibly in the middle of the cloister garth (Heighway 2000).



1 Gloucester cathedral: the lavatorium, drawn by Waller (1856)

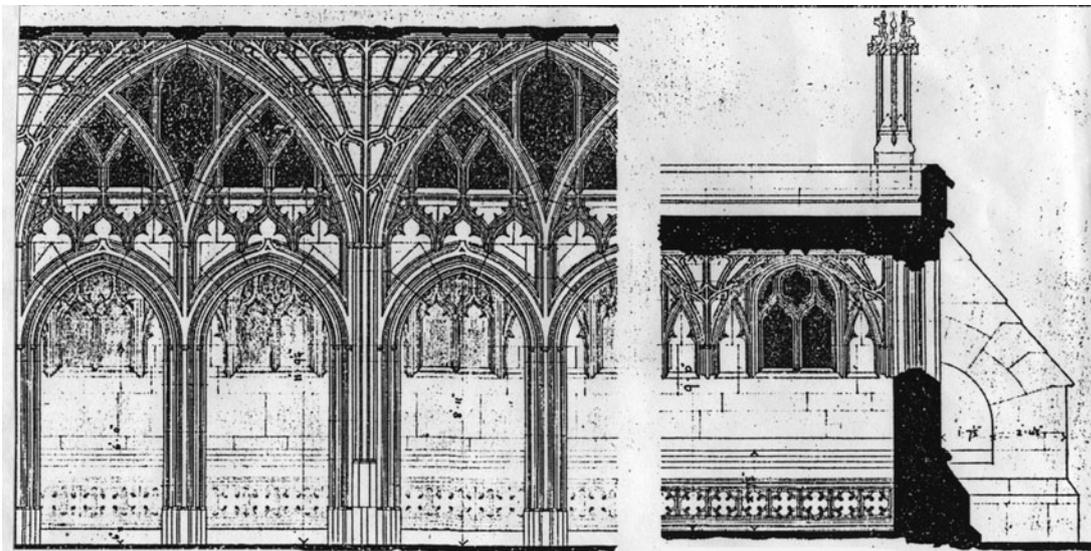
Documentary evidence

The documentary evidence for previous repairs is summarised below (Appendix A). The architect F S Waller drew the buttresses in 1856 (FIG 1); the pinnacles were mere stumps and the buttress arches were filled with brick. In 1877 one buttress was replaced (Appendix A) to act as a guide for the replacement of others, which were not expected to last for long. The lavatorium windows and buttresses were further repaired in 1885. A photograph published in 1898 (FIG 2) shows the buttresses carrying new pinnacles, showing clearly in lighter-coloured stone than the buttress stonework beneath. Morley's internal elevation (FIG 3) of 1910 also shows a complete pinnacle on the first southern buttress. More repairs were done in the 1950s and 1960s.



2 The lavatorium buttresses in 1898 (Masse 1898, opposite page 106). In the foreground is the medieval flushing tank, with cover ribs exposed, which had been uncovered a few years before this photograph was taken.

3 Part of a survey of the cloisters by Morley (*Building News*, 1910)



Preliminary survey of petrology and condition

Petrology and archaeology

A survey of the petrology and archaeology of the buttresses (FIGS 4-7) was carried out by Pascal Mychalysin. A high proportion of the medieval fabric was executed in Minchinhampton Weatherstone, presumably because this small building was expected to withstand a good deal of weather and damp.

There was evidence of extensive repair of the windows in Bath stone: this would have been done when the lavatorium windows were glazed in the late 19th century.

Repairs had been carried out in a light-coloured Painswick stone whose detail still appears fairly crisp. The stone has some soft beds. The joints are distinctive, being neat and close-fitting and using grey cement pointing. This work is very similar to work on the turrets at the west end of the cathedral nave, which is thought to date to 1905-6.

A major phase of piecing repairs was carried out in the 1950s-1960s. The work is mainly distinguished by the great variety of stone used, and by the type of mortar. Much of this phase is in Bath/Tetbury stone (Tetbury Brown is fairly similar to Bath and it is difficult to differentiate them). Minchinhampton stone was also used. There is also reused material, medieval Painswick, Victorian Bath re-cut, and some limestone that cannot be identified. (In the 50s and 60s supplies of stone were hard to obtain, and re-used material from other buildings was used, as well as a quarry at Minchinhampton whose stone was not satisfactory: Ashwell n.d. ii, p 5).

It is a feature of this phase of repair that it pays no regard to the medieval coursing or design but pieced in stone randomly wherever it was decayed. Some of this patching, though of large stones, is very thin facing, sometimes only c. 40mm. This phase also includes plastic repairs with a brownish fairly soft mortar.

The 1898 photograph (FIG 2) shows that some of the piecing assigned to the 1950s work had already been done in 1898; a portion of the work assigned to the 1950s may thus be replacement of repairs of the 1880s.

Condition (summarised from initial report by A Norton and P Mychalysin)

Buttress 2 The 1960s repairs on the underside are poorly cut and do not form a curve. The medieval coursing can be reconstructed.

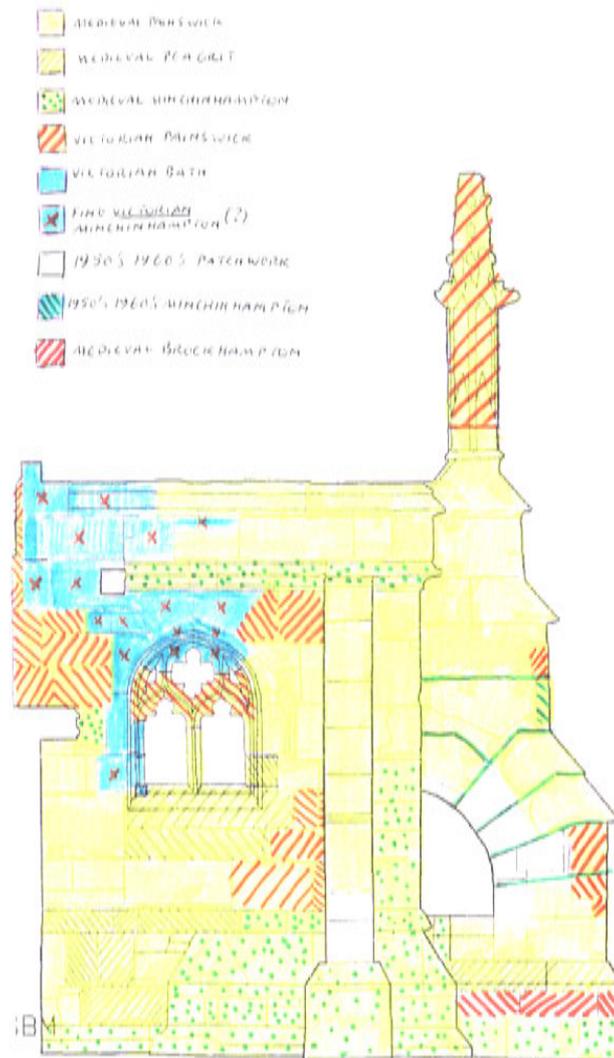
Buttress 3. This is the one replaced as a model in 1877, apart from the plinth. It therefore ought to be the buttress that best preserves the medieval design; the large size of the elements suggests this is the case.

Buttress 4. A great deal of 1960s piecing, some very shallow (52 mm). Left side in 1898 photograph.

Buttress 5. Medieval design severely disturbed; not much of medieval coursing survives. Compare with 1898 photograph. Fracture on upper part of buttress.

Buttress 6. Medieval design severely disturbed. not much of medieval coursing survives. Compare with 1898 photograph.

The Painswick stone used in the late 1800s is beginning to split on the line of the soft beds; this causes weakness on the more slender elements such as the pinnacles. The problem does not arise with the lower, heavier courses as the soft beds are effectively kept closed by compression of the weight above.

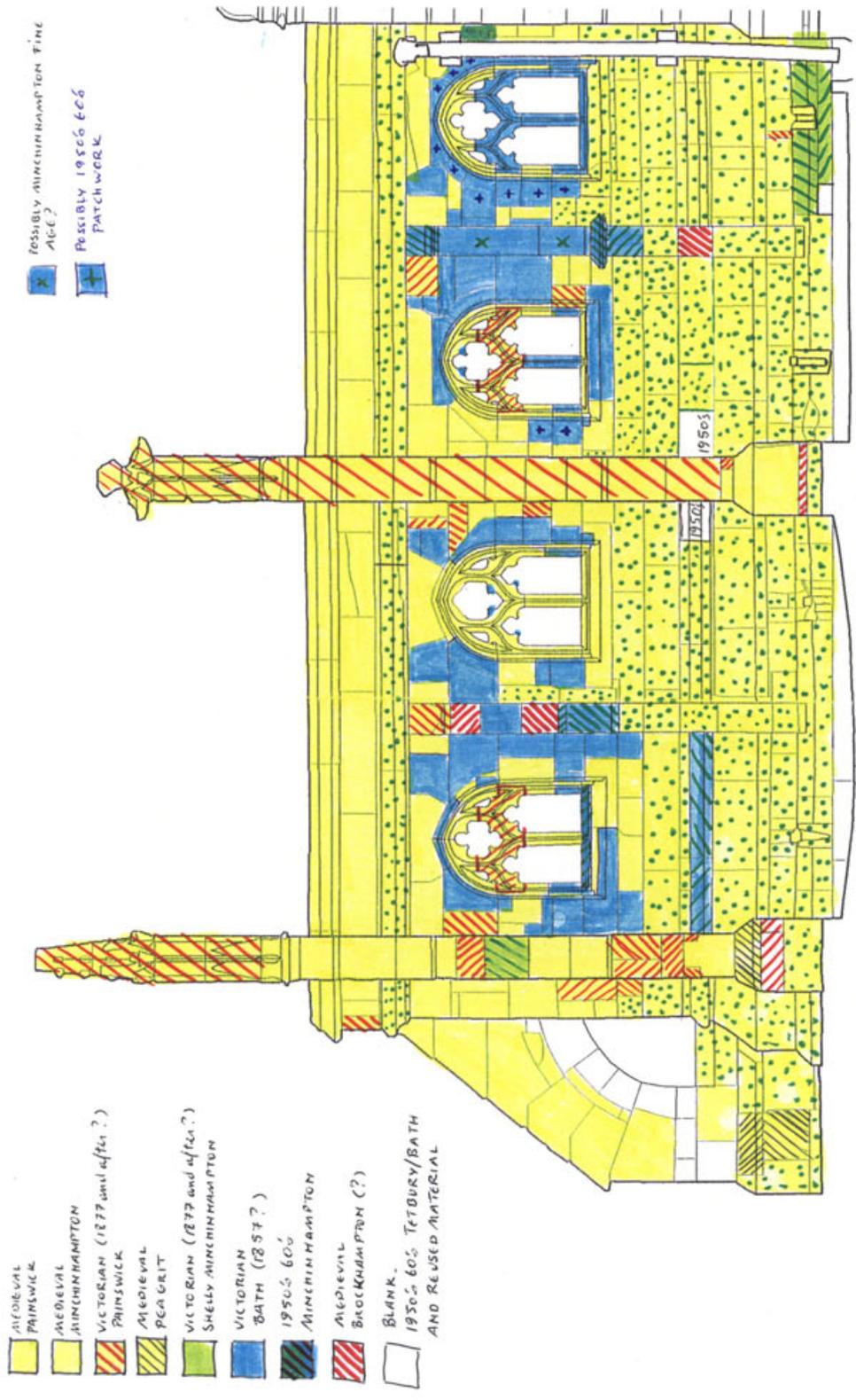


4 Gloucester Cathedral: cloister lavatorium: elevation of west face including Buttresses 1 and 2. Petrological survey by Pascal Mychalysin.

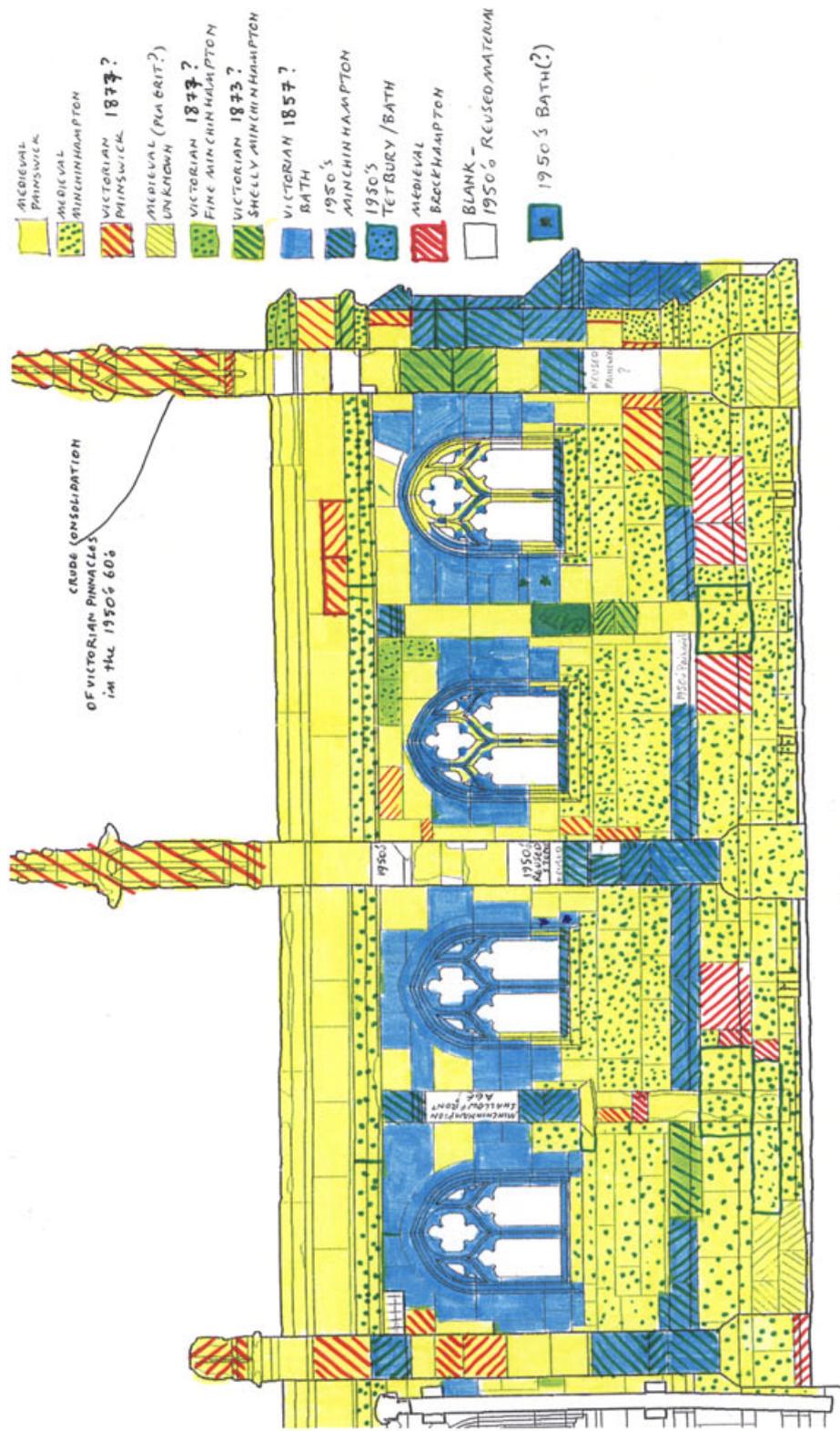
The campaign of repairs during the 1960s has considerably damaged the integrity of the structural design; this applies to all the buttresses except no 3. It is difficult to assess the structural stability, since the patchwork is hiding what lies behind, but its long-term stability is questionable.

Most of the stone used in the 1960s is already starting to decay. The Minchinhampton stone is beginning to reveal iron oxide pockets; this is typical of this stone type and may not be a serious deficiency.

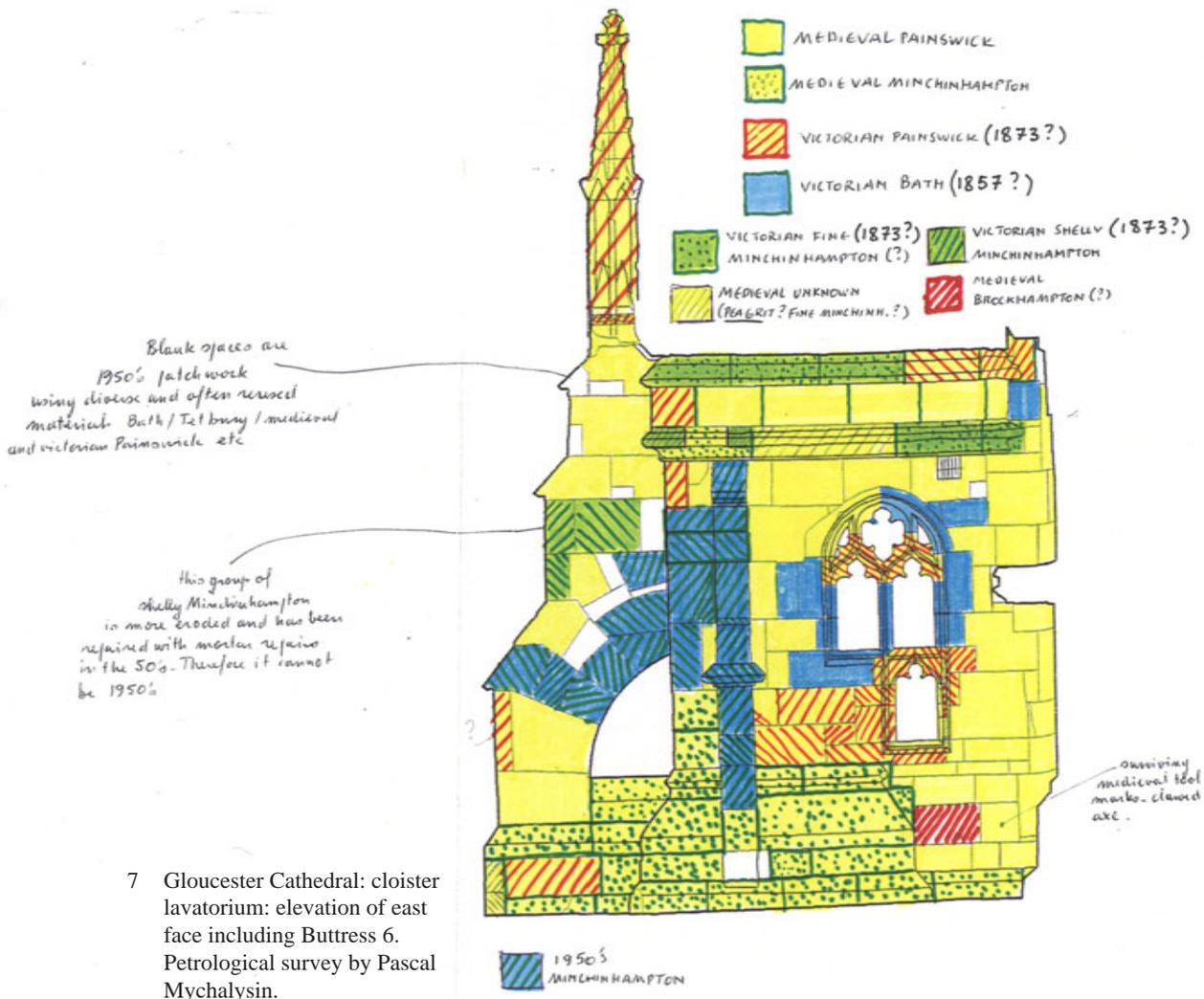
There are vertical fractures on the medieval upper stones in at least two buttresses; there are phase 2 repairs following the same fracture line; this indicates a structural problem which at the moment is not understood.



5 Gloucester Cathedral: cloister lavatorium: elevation of south face (west part) including buttresses 1, 2 and 3. Petrological survey by Pascal Mychalysin.



6 Gloucester Cathedral: cloister lavatorium: elevation of south face (east part) including buttresses 4, 5 and 6. Petrological survey by Pascal Mychalysin.



7 Gloucester Cathedral: cloister lavatorium: elevation of east face including Buttress 6. Petrological survey by Pascal Mychalysin.

The evidence of the fabric

None of the buttress coursing matches with that of the lavatorium itself, and it is clear that the large buttresses (as opposed to the smaller ones which are clearly bonded with and contemporary with the lavatorium) are additions to the original design. This was further confirmed during repair work when it was apparent that the buttresses are only very shallowly bonded to the wall they support (FIG 8).



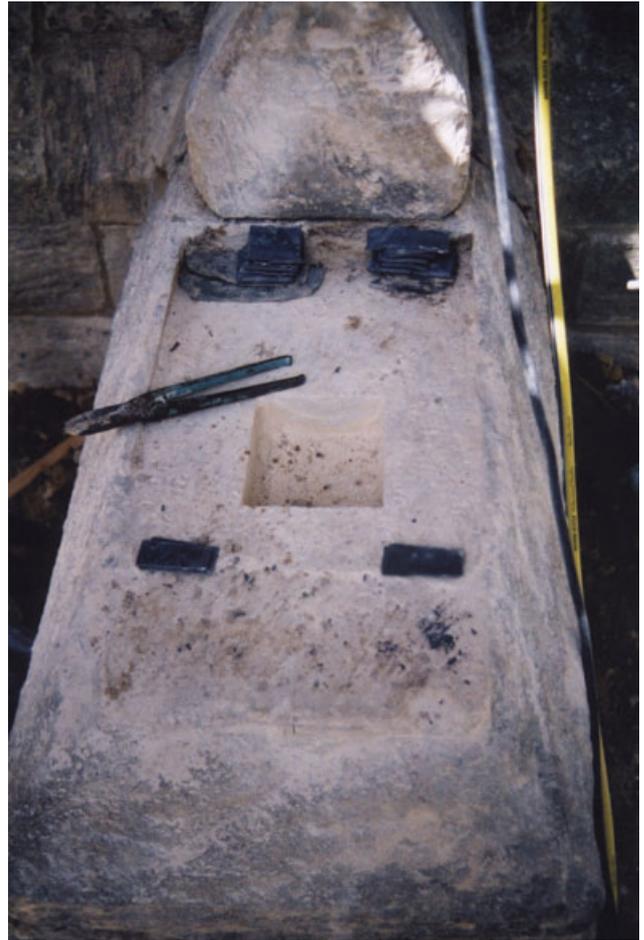
8 Cloister lavatorium buttresses: most of buttress 5 removed except for plinth, showing shallow bonding with lavatorium wall. View from south (AY/4A).

Dismantling of Buttress 5 revealed that the medieval masons had used stone mortice-and-tenon to tie the buttress both to its base (FIG 9) and to the wall (FIG 10).

Repairs 2001-3

The repair programme was drawn up by Ian Stainburn, Cathedral Architect, in 2001 (project number 1900-5043).

Buttresses are numbered 1 to 6 (or in Roman numerals I–VI), with 1 being the buttress at the west end of the lavatorium block. The aim of the repairs was to restore as far as possible the medieval design and jointing. Buttress 5 had been so structurally compromised by patching and alteration that it was considered appropriate to take it down and rebuild to the original joint lines to restore structural and archaeological integrity.

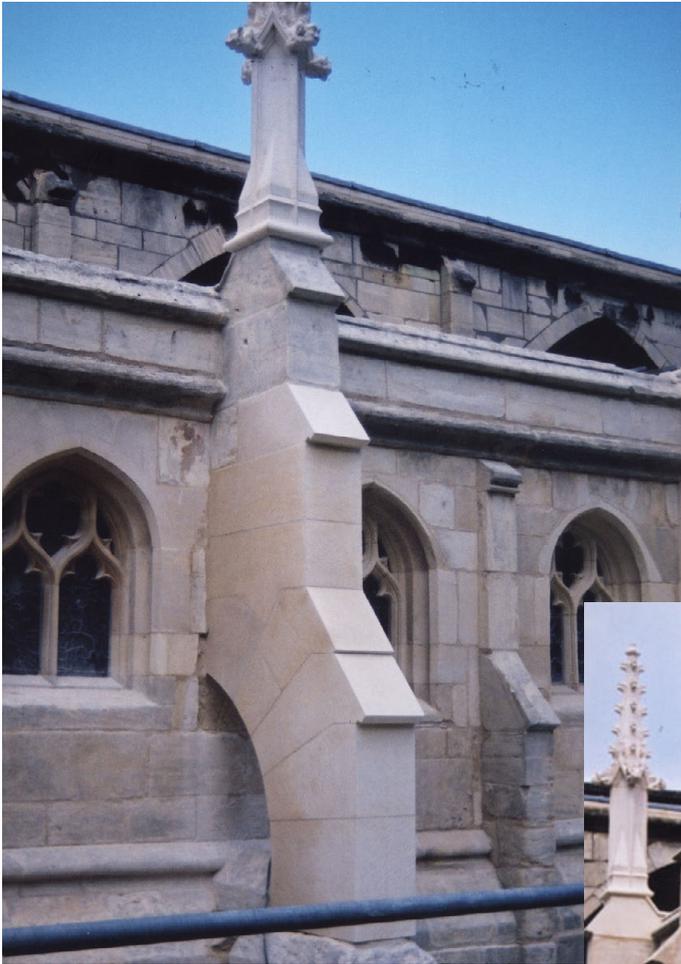


9 Cloister, lavatorium buttresses 4th buttress from west (buttress 5) base bed of buttress sunk at an angle into base and including mortice. Medieval coursing and method replicated on new stones (AY/6A)



10 Cloister, lavatorium buttresses. 4th buttress from west (buttress 5). Restoration of medieval mortice-and-tenon technique to tie buttress on to lavatorium. View from south (AY/16A)

The buttress pinnacles being all gone, new pinnacles were designed by Pascal Mychalysin. The central pinnacle (on buttress 4) bears faces carved from life: representing former Clerks of Works, Alan Norton and Tom Dorrington, the former Cathedral Architect, Basil Comeley, and on the north side, Canon Norman Chatfield, who was Fabric Canon in the 1990s.



11 Cloister, lavatorium buttresses. 4th buttress from west (buttress 5), completed. (AY/20A)



12 Cloister, lavatorium buttresses. Third buttresses from west (no 4): joints cut out exposing 1950s patchwork repairs. View from east. (AY/22A).



13 Cloister, lavatorium buttresses, 3rd from west (buttress 4); joints cut out. View from west also showing renewed buttress 5 and repaired buttress 6.

Archive

GCAR 99/G: copies of report; architect's drawings of the repair specification; copies of original reports by Pascal Mychalysin and Alan Norton.

Colour slides of buttresses before repair: Archaeological Archive (GCAR slide collection, uncatalogued, filed under 'Cloister').

Colour photographs in the Alan Norton Collection (GCAR appendix 5), films AS, AY, AZ.



14 The finished buttresses, from the south (AS/20).

APPENDIX A : DOCUMENTED REPAIRS

Repairs were made to the lavatorium in 1624 (Eward 1985, p 26).

Waller (1855) says, 'the stonework of the cloisters is very dilapidated'; he proposed cleaning and restoring the inside stonework.

Waller (1856) shows the pinnacles as mere stumps. The buttresses were very worn and propped with brick infill.

Architect's report, 13 Jan 1858: a portion of the cloisters, one bay on the S side and 2 of the 'Scriptoria' windows...were repaired (Gloucester Cathedral Library MS53, p 21).

Architect's report, January 1865. Two windows in the E walk of the cloisters repaired to take stained glass (MS53, p 72).

New stonework was introduced in the N walk of the cloisters (MS53, p76)

Architect's report, January 1866. In 1865 stonework of the windows had been repaired. drainage of the large cloisters, concreting and cementing of the spaces between the buttresses with edges of Forest stone; ...gravelling the walks.. a new arrangement of down-pipes (MS53, p 81-2). One buttress at the N end of the E walk was repaired (ibid., p 83).

Architects report November 29 1877...Removal of one of the buttresses of the Lavatory in the cloisters, the object of which was to preserve one of these as a guide for the restoration of the others hereafter – the work being so much perished that all traces of the original design would soon have been lost (Gloucester Cathedral Library MS54, p 76).

Architects report, 30 Nov 1885. 'I have nothing to report as connected with the fabric itself excepting as regards the condition of the two of the buttresses of the North wall of the internal quadrangle of the Cloisters, which during the time we were engaged in generally repairing and pointing the walls of the Cloisters themselves I discovered to be in a very perilous condition some of the most important stones being dangerously crushed and broken. Having obtained the consent of the Canon in Residence I carefully shored these and commenced the necessary repair; one has been completely underpinned and made secure, and the other is now in hand. I have little doubt but that great damage has been done to these cloisters by the intra-mural interments which were allowed years ago.' (MS54, p 106.)

The Clerk of Works books (CWB) record that the cloisters were repaired in 1885, 1886 (north walk; buttress and windows), 1895 (lavatorium windows and buttresses), 1896 (west walk, buttresses and windows), 1902 (east walk, repairs to vaulting and south bay buttress) 1906 (west walk, repairs of panelling); 1911 (east walk buttresses); 1932 (west walk) and on further occasions in the 1950s and 1960s.

References

- Ashwell, B. n.d. *Cathedral Church of St Peter Gloucester.....Chronicle of the Works of Repair begun AD 1953* (unpublished, Cathedral Library)
- CWB *Clerk of Works Day Books*, Cathedral Library
- Eward, S 1985 *No Fine but a Glass of Wine* (Salisbury)
- Heighway 2000 'A medieval water tank in the Cloister Garth of Gloucester Cathedral' *Transactions Bristol and Gloucestershire Archaeological Society* 118, 190-200
- Massé, H J L J 1898 *Gloucester: The Cathedral and See* (London, Bells Cathedral Series)
- Morley E. 1910 [Measured drawings of Cloister and Lavatorium at Gloucester Cathedral] *Building News* no 2894, June 24, 1910
- Waller, F. S. 1855 [Report by Thomas Fulljames to the Dean and Chapter on the fabric of Gloucester Cathedral; commissioned in 1855 and carried out in 1855 by Waller] *Chapter Act Book 7*, 2 July 1863.
- Waller, F. S. 1856 *General Architectural Description of Gloucester Cathedral*
- Welander D 1991 *The History Art and Architecture of Gloucester Cathedral* (Stroud)
- Wilson, C 1980 *The origins of the Perpendicular Style* unpublished PhD thesis, University of London