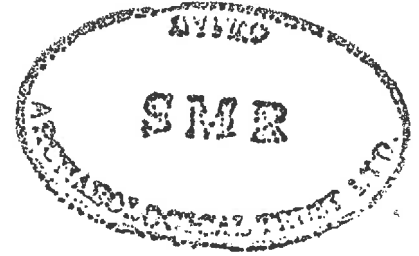


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St Davids Cathedral

The Cloister Project

The Archaeological Implications

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St Davids Cathedral: The College of St Mary

General Introduction

The purpose of this document is to draw together the known documentary evidence relating to the cloister and college of St Mary at St Davids Cathedral, to provide a detailed architectural description of those parts of the complex which are affected by the current proposals for the Cloister Project, and to summarise the current state of knowledge of the archaeological substrate of the cloister and its buildings. This material is presented in order to inform decisions which will need to be taken in the design of a strategy to respond to the requirements of the new cloister buildings, both from the point of view of mitigating their impact upon the historic fabric of the standing buildings and upon the archaeological deposits beneath the college, and in determining the most appropriate response to unavoidable intrusions into the fabric and its substrate.

The main divisions of the text, therefore, conform to this outline. Firstly a history of the college from its foundation to the present using mainly the secondary published sources, but incorporating historic drawn and photographic resources. This is followed by a detailed description of the cloister and the Chapel of St Mary (now known as St Mary's Hall) and its undercroft, but excluding the domestic buildings of the College to the north which are not directly affected by the Cloister Project. Thirdly the findings from the known excavations on the site are summarised - chiefly those of W.D Caroe in 1933-4, the work associated with the building of the Song School in 1992, and the test pits dug for the structural engineers in 1998.

The final part of the text consists of a brief discussion document outlining a possible strategy for archaeological recording in advance of, and during the construction of the new buildings and the conversion of the medieval fabric. This is intended as a basis from which may be evolved a detailed specification for archaeological excavation and monitoring of the Project.

1 Historical summary - the documentary evidence

1.1 Foundation and construction

- 1.1.1 Adam Houghton, Bishop of St Davids from 1362-89, founded and built on the north side of the cathedral a college for a Master, seven priests and two choristers, ostensibly because in his time

‘...Priests were difficulty procured out of England, at great charge, to officiate in St Davids Cathedral...’¹

- 1.1.2 A complete body of statutes was given for the governance of this foundation in 1372.² Dugdale states that these ordinances enjoined,

‘...that the Master and (seven) Priests should live together in a collegiate manner, and perform the Divine Offices in their Chapel according to the Salisbury Missale; & ordered that the Master & Chaplains should assist on Sundays and double festivals at High Mass & Vespers in the Cathedral among the Vicars there; & enjoined them not to go into St Davids Town, nor frequent ale-houses or taverns; & that they should be daily clad in proper vestments, & reside at St Davids, & not be obliged, if they got livings, to reside at them: and that there should be always two Choristers under the Precentor’s care, who was to instruct them in grammar learning & singing.’³

- 1.1.3 The college was sited north of the nave of the cathedral, bounded to the west by the River Alun, and to the north and east by thoroughfares within the close. On the north side of the complex was a simple gateway giving access to a courtyard, apparently surrounded on three sides by the domestic buildings and

¹ Dugdale's *Monasticon*, vol.3, quoted in *Menevia Sacra*, p.372.

² The date according to Jones and Freeman p.327, quoting Dugdale.

³ Dugdale's *Monasticon* vol.3, quoted in *Menevia Sacra*, p.372.

lodgings of the priests and their servants. To the south of these lay the chapel, a large and impressive building standing, like the rest of the college buildings, over an undercroft. To the south again a cloister united the new buildings to the cathedral.

1.1.4 Dugdale⁴ quotes Houghton, who wrote that,

'After the foundation we ordered fair houses and quarters sufficiently comfortable for the dwelling of the servants and the master and priests and of their ministers... We have begun to build an attached and useful cloister between the said cathedral church and the aforesaid chapel.'⁵

If there were any ambiguity in this statement, Leland makes it clear that each of the priests was provided with their own private house.⁶

This document confirms the evidence of the fabric that the cloisters were constructed after the chapel, and implies that it was the last part of the complex to be built.⁷ At Llawaden Castle, which Bishop Adam was renovating in the 1380s, the Constable was John Fawle, who is referred to in a grant of land (of 1383) as 'master of our works',⁸ suggesting that he was in overall control of the Bishop's building projects by this date.⁹

⁴ *Monasticon* vol. iii, p.122 - quoted in Fenton 1811, p.40..

⁵ As translated by James, 1981, p.139. '*Post foundationem pro mora eorundem magistri et presbyterorum familiæ mansum honestum domosque sufficientes sumptuose construi et fieri fecimus, unumque claustrum inter ecclesiam cathedralem et capellam predictam facere inchoavimus devotum et utile.*'

⁶ '*In hoc collegio sunt magister & 7 socii, & unicuique privata domus*', Leland Coll. p.415, quoted in Jones and Freeman 1856, p.188.

⁷ Turner, 2000, p. 30, gives the date of the completion of the college buildings as 1384, five years before the Bishop's death, making it certain that the latter's death could not have prevented the completion of the cloister.

⁸ 'mro operū nro', '*Registers*' p.628-9. See also *Registers* vol.3, p. 116

⁹ In his will Adam Houghton left 40s. to 'Johanni Fauley', this name occurring at the end of a list of twenty two bequests to individuals, all but two of which are for the same amount. [*Menevia Sacra* p.371.] Harvey *EMA* p.107a also attributes the Chapel to '—Fawley', but does not mention Llawaden; his information is probably mediated from Wight n.d..p. 41.

- 1.1.5 Adam Houghton was appointed the precentor of St Davids some time after 1354, and was appointed to the See by Papal provision on 20 September 1361, being consecrated at Southwark on 2 January 1362. He had been educated at Oxford University where he took the degree of doctor of laws; entering holy orders he apparently became one of the royal clerks. He was employed in affairs of state by Edward III, was privy counsellor to Richard II, Chancellor between January 1377 and October 1378, and Treasurer shortly before his death.¹⁰ He appears to have been a close friend of John of Gaunt, Duke of Lancaster (d.1399), who, together with his wife Blanche (d.1369), were major benefactors to the new College, such that they are often considered to be co-founders.¹¹
- 1.1.6 In his will, dated 8 February 1388-9, Bishop Adam states that his body is to be buried on the north side of the Chapel of St Mary of his new College.¹² He died five days later on 13 February 1389. It is likely that in addition to the college of St Mary he also erected the Vicars' College - he certainly compelled the vicars to live together, which they had not previously done.
- 1.2 The College to 1549
- 1.2.1 Yardley, like Jones and Freeman,¹³ gives the names of nine Masters of the college between 1387 and 1546, though doubtless there were others, including Master Robert Broune - not mentioned by either authority - who resigned the

¹⁰ See the summary of his career in *Menevia Sacra*, p. 57-8; also 'Dictionary of National Biography', 1891, xxvii, p.419.

¹¹ As in Browne Willis, p.25-4, or Jones and Freeman, p.327. Robson [1901 p.85] additionally associates him with Chaucer

¹² '...corpus nostrum sacrae sepulturae tradendum in parte borealis Capellae Cantuariæ quam Deo favente fundamus juxta Ecclesiam nostram Menevens' in honorem dictæ Beatissimæ Virginis Mariæ.' Will of Adam Houghton in *Menevia Sacra*, p.370. He also stipulated that, 'legamus organa nostra Cantuariæ nostræ Beatæ Mariæ Menevensi ubi corpus nostrum requiescet', *ibid*.

¹³ *Menevia Sacra*, p.373-4; Jones and Freeman 1856, p.365.

mastership in 1406.¹⁴

- 1.2.2 In September 1402 Bishop Guy de Mone ordered three of the canons of St Davids to investigate the case of Thomas Pope, Adam Houghton's clerk, who had been promised '*...in the college of the Blessed Mary, St Davids, honourable and perpetual sustenance for the term of his life*', but that despite agreeing to provide '*victuals and drink, with a chamber, [and] promising that they would order for clothing and other necessities for the sustenance of the same, when required...*' such clothing and sustenance had not been forthcoming.¹⁵
- 1.2.3 The College of St Mary was united with the College of the Vicars Choral in the 1480s,¹⁶ as is rehearsed in the 1549 report of Edward VI's commissioners in pursuance of the Chantry Act of 1547 (see section 1.2.4. below).
- 1.2.4 The College was valued at £106/3/6. in 1535, and at its dissolution in 1549 at £95/17/0. The report of the commissioners in 1549 summarised the history and appearance of the College,
- 'There is within ye same parish, one College, called Our Lady College, founded by Adam Hutton & John, Duke of Lancaster & Dame Blanche his wife, for a Master, seven Fellows, & two Queristers, and about 60 years past, ye same, as is reported, was united to ye Cathedral Church of St David, to ye intent to have a Master of ye said College found and 27 Vicars Choral, 8 Queristers, & other servants, and ye same is situat on ye north side of ye Cathedral Church there, being covered with leade: that is to say, ye church contayning in length 24 yards & in bredth 9 yards di'. To ye which College there apperteyneth 10 parsonages...'¹⁷
- 1.2.5 At this time the master was Stephen Green, and there were seven priests (one

¹⁴ 'Registers', 344-7, Register of Guy de Mone, 13 June 1406. 'Domino Roberto Broun' was another of those who were left 40s in the will of Adam Houghton. He was precentor of the College of St Mary in October 1399 [Registers p.158-9]

¹⁵ 'Registers', p.378-81. 'Thomæ Pope' was also left 40s by Bishop Adam Houghton.

¹⁶ c.1485 according to Knowles and Hadcock 1953, p.340.

¹⁷ Chantry Rolls, quoted in *Menevia Sacra*, p. 375.

acting as master of the children), and fifteen vicars.¹⁸ The valuation of the plate and ornaments made at the same time is revealing, as giving some indication of the property of the College. Portable objects to the value of £24/11/11 (including a not so portable bell, of about 3cwt, and worth £3) had already been sold by Stephen Green, and only goods worth £9/11/1 remained. The plate of which Green had disposed consisted of:

'One Challes with a Paten gilt, weying 37 ounces valewed at	5/15/8
One other Challes with a Paten gilt, weying 26 ounces, valewed at	4/17/2
One other Challes with a Paten gilt, weighing 12 ounces, valewed at	3/04/2
A Crewett parcel gilt, weying 6 ounces, valewed at	1/04/9
A Censer of silver parcel gilt, weying 35 ounces, valewed at	6/10/2'

While the remaining treasures consisted of:

'One Challes with a Patens of silver, weighing 11 ounces, valewed at	2/02/0
One other Challes with a paten of silver, weighing 11 ounces, valewed at	2/01/3
Fronte for an Alter valewed at	4/0
4 Coopes valewed at	5/0
4 other Copes	10/0
2 other Copes	8/0
3 Vestments with Albes	1/0/0
3 Masse Books	4/0
And a Pax of silver enameyd p'cel gilt, weying 17 ounces	2/6/8 ¹⁹

1.3 Neglect and decay (1) - the College buildings after the Dissolution

1.3.1 Lord's plan and description

1.3.1.1 In 1720 Joseph Lord drew a plan of the close, which was used as the basis for

¹⁸ RCHM, 1925, p.345-5; Knowles and Hadcock 1953, p.340; *Menevia Sacra* p.375-6.

¹⁹ quoted in *Menevia Sacra*, p.376. If these items included plate and vestments from the original foundation they may well have been of very high quality: Houghton left to William Courtney the Archbishop of Canterbury, '*unum Ciphum argenteum cum uno Cooperculo argenteo de aurato exquisiti operis continentum unum Draconem volantem in summitate, una cum viginti Marcis in dicto Cipho.*' [idem, p.371]

the plan of the College given by Yardley in *Menevia Sacra*.²⁰ His plan of the college buildings north of the chapel bears little relationship to the 1:2500 Ordnance Survey map, even though the bulk of the existing walls are clearly medieval. The natural reaction is to assume that Lord was inaccurate in his rendering of the buildings; however, his plan of the Bishops' Palace, while imprecise in several respects, is reasonably accurate, and there is no reason to think that his rendering of the College would have been any less so.

- 1.3.1.2 Lord shows two parallel ranges running north-south in the eastern half of the plot, linked near their southern ends by what appears to be a double-gateway. The enclosed courtyard between these ranges faces the gateway in the northern wall, the two 'gates' being on the same axis. To the west an east-west range runs out to the river, ending against the bank, and to the south of this he shows a smaller rectangular extension. Lord has drawn a stub of walling against the north-east corner of the Chapel block, as if there were an arched gate into the western garden immediately to the north, between it and the southern chamber of the east range.

- 1.3.1.3 Lord also provided a written description of the chapel and cloister complex (c.1720), to which it appears that Yardley himself has added a description of the College's domestic buildings (before the 1760s),

'The College on ye north side of the Chapel, was a large pile of building, vaulted all under it. In this College ye seven Fellows (& Master) had their apartments, according to the appointment of ye founder Bishop Adam Houghton, who endowed it with £100 per annum. Most of ye walls are still standing, though all uncovered except two small parts inhabited by two cottagers. From the College there was a way that led directly into ye Chapel through ye gardens, which lay between ye Chapel & College.... The College and lands are set by lease upon paying some small acknowledgment to the Crown.'²¹

It is tempting to suggest that the two cottagers may have been occupying the centre and/or northern end of the east wing - those parts which are now incorporated into College Hall and the 'Lime shed'.

- 1.3.1.4 Browne Willis' (c.1717) description adds little to this, except to confirm that there had indeed been a communal refectory in the complex,

²⁰ The plan of the close is reproduced facing p.5 in *Menevia Sacra*, and Yardley's abstract from it is on p.372. A colour reproduction is printed in Evans and Turner 1999, p.11.

²¹ *Menevia Sacra* p.373.

“Within the Close, and North-East of St. *Mary's* College, are large Ruins of a Building, which formerly belonged to the Vicar's Choral, (who liv'd there as the petty Canons do still at *Hereford*) in a Collegiate Manner; the Ruins of their common Hall, or Refectory, are still visible.”²²

- 1.3.1.5 The Elizabethan manuscript source upon which Browne Willis drew, compiled only some 40 years after the dissolution, suggests that the college was ruined very rapidly - perhaps robbed for building stone, or deliberately slighted to prevent it being re-occupied - it states that,

‘Besides these Houses of the Canons and Prebendaries, there was a College of Priests, which belong'd to the Vicar's Choral of the Church, which, in *Edw. VIth's* Time, was dissolv'd, and (as it was said) was betray'd by one *Green*, Sub-Chantor, and Master of the College at that Time. It is now altogether ruinous.’

- 1.3.1.6 In 1811 Fenton noted that the land on which the domestic buildings of the college stood ‘*now belongs to John Edwards, of Sealyham, Esq., as lessee under the crown.*’²³

- 1.3.2 A tentative reconstruction of the College plan

- 1.3.2.1 Given the likelihood that Lord's drawing contains some inaccuracies any reconstruction based on the available evidence is almost certain to be (at best) flawed. Nonetheless, some suggestions as to the original form of the College buildings should be attempted. The surviving buildings comprise the cellars

²² Willis 1717, p.29-30. It is not clear whether this does refer to the domestic buildings of the college. Lord's plan suggests that the houses of the Vicars Choral which Willis initially appears to be describing were scattered structures in 1720, not at all like the buildings he is discussing. In referring to the ‘large ruins of a building’ north east of St Mary's College it is clear that Willis does not mean the Chapel by this - indeed, he describes the Chapel on pp.24-5 - and it seems unlikely from Lord's account that the Vicars Houses would have been described in these terms.

²³ Fenton 1811, p.40.

beneath the College,²⁴ and their disposition will not necessarily correspond to the divisions between the apartments above; however these cellars all appear to be medieval, and taken with the evidence of Lord's plan suggest a coherent arrangement of buildings within the grounds of the College.

- 1.3.2.2 Superimposing Lord's plan and the Ordnance Survey map suggests that the building now used as the 'Lime shed' represents the northern chamber of an eastern range, with an east-west passageway immediately to the south of it; that the house known as Cloister Hall occupies the central part of this eastern range, but that a southern chamber of this range has been lost. Lord shows four cellars in the eastern range, three of which (together with the passage between the northern pair) still exist. Chimneys have been inserted in the two northern cellars, and it may be that these were the buildings occupied by cottagers in the early eighteenth century.
- 1.3.2.3 The building which Lord appears to show as a double gateway opposite the entrance to the College courtyard is actually a single vaulted cellar with two doorways on the northern elevation. It has not yet been possible to examine the south wall of this cellar for evidence of the southern pair of doorways shown by Lord, but if they exist they are now blocked. This central range is actually considerably longer than Lord's plan suggests, and almost certainly consists of two cellars, the western one apparently blocked up and probably filled with earth.
- 1.3.2.4 The north-south range which Lord shows occupying the centre of the site is more difficult to correlate with the existing ruin - indeed the buildings which project to north and south of the central range do not line up in the way that he has drawn them, and it seems highly improbable that they could ever have done so. It is also evident that Lord has seriously misplaced the south wall of the west range, which actually lines up with the south wall of the central range, rather than being much further to the north as he has drawn it. It is of interest, however, that he shows the building divided into four chambers, and once more extending further to the south than the existing ruin - apparently with a gateway between the south end of the range and the north-east corner of the chapel.
- 1.3.2.5 If the ruins - '*all uncovered*' according to Yardley - were already overgrown and difficult of access by 1720 his piecemeal examination may have led Lord to make the incorrect assumptions that the north-south walls lined up and the

²⁴ The R.C.H.M. Inventory for Pembrokeshire (1925), dismisses the College buildings as follows - '*The domestic buildings of the Cathedral and College have either entirely disappeared or those that are left are, for the most part, Georgian, and do not call for special notice in this place.*' (p.354.)

east west ones did not. The raised garden of Cloister Hall was a later creation, so Lord may not have had access to the overgrown northern stairs from which he could have seen how the walls were disposed. His evidence does suggest, however, that two cellars projected south towards the Chapel, that another cellar lined up with the west range, and a fourth lay beneath the northern end of his north-south range. Of these cellars only the last can be examined at present, through two holes which have been broken through near the centre of the projecting side walls of the northern chamber. There is no sign here of the doorway which Lord indicated in the eastern wall. The vaults have been broken through at the south end, and a great spill of earth and rubble slopes down from where the cellars to the south have been backfilled to form the raised garden of Cloister Hall.

- 1.3.2.6 The existing west range is much shorter, and placed further to the south than Lord's plan shows it; he drew a building projecting southwards from it near the river, and omitted the small square projection in the angle with the north-south building. The internal divisions suggest two cellars in this range, Lord showing a triangular space at the west end against the river which may be no more than the result of drawing a rectangular room against the raking line of the river bank.
- 1.3.2.7 A feature of the existing ruin which Lord omitted is the stair on the north side of the central range, together with a similar sloped approach on the south side of the range. It is possible that these are late creations serving the raised garden of Cloister Hall, but the northern one, at least, appears to be original, having an early arch with a squinch above it integral with its western end. The southern sloped approach runs down from a point more or less opposite the top of the northern stair, and ends opposite the door onto the stair serving St Mary's Chapel, suggesting that it too is part of the medieval circulatory system.
- 1.3.2.8 Assuming that this is the case, it would seem likely that the stairs served the communal Hall of the College, which would in turn suggest that this was situated in the building which projects to the north of the main east-west range, and that this also occupied the corresponding part of the latter as far as its south wall. If this is the case the isolated western end of the main range would probably have formed the kitchen, having direct access to the river for water and drainage, and to the southern end of the Hall. The small projection in the angle between the north wall of the kitchen and the west wall of the hall may have been a garderobe, which could also have been flushed into the river.
- 1.3.2.9 The north-south Hall range thus reconstructed is considerably wider than the ranges of buildings to the east, and would represent a well-proportioned structure roughly twice as long as it was wide. Unlike the cellars beneath the

eastern ranges there are no openings into the Hall cellarage from ground level, and this was probably accessible only from the interior of the Hall and Kitchen, and dedicated to housing the stores destined for consumption by the community. As elsewhere in the College buildings and Bishops Palace, the large formal staircases provided access from the courtyard to the Hall and from the Hall to the Chapel across the western garden.

- 1.3.2.10 If the western buildings formed the communal area of the College, the structures to the east and north must have formed the apartments of the Master and the seven priests. If Lord's plan can be trusted in this respect it may be that projecting wings on the south side of the main east-west range have been destroyed since the eighteenth century - he drew a further projection of the east range to the south of Cloister Hall, and a building which almost joined the Chapel at the centre of the main range.²⁵ The existing eastern range preserves three cellars, a southward projection would suggest that a fourth existed - the number of cellars which Lord drew. In the centre of the main east-west range there are two cellars; the same number as are shown on the 1720 plan. The existing southward projection at the centre of the main range appears to be truncated, and if it originally ran almost to the chapel there would have been room for a further two cellars here (the number which Lord showed south of the position of the putative Hall). Assuming two cellars on this range would give a total of eight beneath the eastern complex of buildings, and if the cellars each belonged to a discrete apartment at first floor level these would seem likely to have provided the accommodation for the seven priests and Master.
- 1.3.2.11 Such an arrangement would have meant that a visitor to the College approaching through the gateway in the north wall would find himself in a courtyard with apartments standing over cellars to the south and east, and the stair to the first floor Hall in front of him. Having gained admission to the Hall it is likely that further doors led to the kitchen on the south west, perhaps to a garderobe (or stair turret?) immediately opposite the entrance, to a passage giving access to the individual apartments on the east wall; and via this, or separately in the south wall, to the stair which led down into the western garden, perhaps through a pentice walk, and thence to the Chapel stairs opposite. A separate smaller, and perhaps more private garden lay to the south of the priests' houses in the south-eastern quadrant of the grounds, probably accessible from the passage beneath the northern end of the east wing, and perhaps also by another less circuitous route through the central

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These buildings, the closest to the Cathedral, would probably have been the first to be cannibalised for building-stone after the (possibly deliberate) clearance of the upper floors of the rest of the College.

wing, as suggested by Lord's plan.

1.3.2.12 It seems unlikely that any fabric of the superstructure of the College houses survives (outside of Cloister Hall and the Lime shed), but at first floor level it is likely that there was a passageway running the length of the east and central wings along the west side of the former and the north side of the latter. This would have provided the occupants with the necessary first floor access to the hall, and its existence is suggested by the large squinch in the northern angle between the two wings, which probably carried the passage past the square junction between the second and third houses of the east range. A smaller squinch between the northern stair and the Hall suggests that the stair might have been enclosed within a taller building - if so this area immediately east of the Hall could be the Master's house, where he would be well placed to observe the comings and goings to the north and the activity in the Hall. An extension of the building over the stair would also make this the largest of the houses.

1.3.2.13 It is conceivable that there was a building of some description over the lower end of the putative southern stair, since this might help to explain the otherwise enigmatic building shown on Lord's plan projecting from the south side of the western range. A structure in this position must either have interfered with or been associated with the stair if the latter were part of the original design of the College.

1.4 Neglect and decay (2) - the Chapel after the Dissolution

1.4.1 The earliest post-dissolution notice of the college, apart from the Elizabethan manuscript already quoted [section 1.3.6. above] comes from the Tomkyn MSS in the Bodleian Library, containing a manuscript history of St Davids of c.1610. This is the source of the legend that Adam Houghton was excommunicated by Pope Clement VI and that he in turn excommunicated the Pope, 'as is shew'd in ye paintings of the windows of his college, & about his tomb'.²⁶ Jones and Freeman suggest that this may actually have referred to an excommunication of the anti-pope Clement VII (1378-94). Whatever the truth of the subject matter, it is clear that records or an oral tradition of the

²⁶ *Menevia Sacra*, p.57-8, translating the original, which is quoted by Browne Willis 1717, and in Fenton 1811, p.39: '*Hic a Papa, Clement. 6, excommunicatus fuit, et postea papam excommunicavit, ut in fenestris vitriis ejusdem collegii ejusque picturis ostenditur, ac etiam ejusdem tumba inscriptum apparebit.*'

decoration of the chapel was available to the writer, and that painted glass was a significant element of the decoration of the building.

- 1.4.2 The Chapel, like the college, is described by Lord and Willis, and the former provides an illustration of it - albeit spectacularly inaccurate. It is difficult to know how much reliance can be placed on Lord's engraving.²⁷ Yardley made notes on a loose sheet included in the manuscript of *Menevia Sacra* summarising the most blatant errors in the engraving, which, for the Chapel include the fact that

'The walls of St Marys College Chapel are a great deal too low. The tower hereof has 3 windows in ye draught, whereas it has but one; and ye tower is in ye draught too high for ye walls of ye Chapel.'²⁸

Certainly Lord shows the building entirely unroofed at this time, though with the east gable and the wall tops apparently in fairly good order, the gable with a large coping. There are no parapets on the chapel or its narthex, but the tower bears crenellations and crude rectangular pinnacles, that at the north-east taller than the others. On the other hand Lord completely omits the undercroft, showing the building as if it were single-storeyed.

- 1.4.3 In his written description he does at least remedy the latter omission,

'The Chapel, dedicated to St Mary (though some say to St Peter) stood on ye north side of the Quadrangle, joining to ye Cloysters. It was a curious building; on ye south & north sides it hath three windows of about 24 feet high & 9 feet broad, & at ye east end a window something larger. In ye south west corner stands ye Tower, under or through which is ye entrance from ye Cloysters to ye Chapel. This Tower is 70 feet high, & all well built, being ornamented with true Free-stone, as are also ye windows of ye Chapel. Over ye south-east corner was a small room with a door from ye Chapel into it; which I take to have been a vestry. The length of this Chapel, in ye clear within, is 69 feet 9 inches from east to west, agreeable to the height of ye Tower: ye breadth 22 feet 9 inches: ye height of ye side walls 45 feet. Underneath the whole extent of this Chapel is a vault (with launcets to let in light) said to have been a charnel house.'²⁹

²⁷ Reproduced in *Menevia Sacra* facing p.13.

²⁸ *Menevia Sacra*, p.13.

²⁹ *Menevia Sacra*, p.373.

- 1.4.4 Lord's 1720 plan of the close shows the chapel, with the narthex stair and a suggestion of either one of the rooms over the narthex or a room at the north end of the stairs,³⁰ together with the complete circuit of the cloister. He neither illustrates nor describes the massive nave buttresses, and they do not occur in his [albeit inaccurate] north prospect of the cathedral.
- 1.4.5 Browne Willis' description adds little to what Lord and Yardley tell us,
- 'On the North Side was a Chapel, which had a noble East Window, and six large side Windows, three to the North, and three to the South. It is built over a Vault, which formerly was a Charnel-House. It was 74 Foot East and West, and consequently took up the whole North Side of the Quadrangle, and 32 Foot 11 Inches North and South. It was Leaded formerly, but in *Edward the VIth's* Time it was surrender'd to the Crown by one *Green*, the Master, who was also Sub-Chantor of *St David's*, and then the whole Building was ruin'd, and for the most part pull'd down, as we now see it.' pp.24-5.
- 1.4.6 In 1740 the Buck brothers drew the south-east view of the cathedral, a prospect from which only the top of the tower of St Mary's is visible. However, it is important to note that they show no parapet belonging to this tower, suggesting that Lord's rendering may be fictitious. This is rendered the more likely by the probability that the tower was designed to support a broach spire.
- 1.4.7 At the end of the 1780s and the beginning of the 1790s a number of views of the west end of the cathedral were engraved - by Grose, Sparrow and Cooper, Pugin (for Nash) and others - in several of which the south and west elevations of St Mary's Chapel can be seen. They are generally in agreement, one with the other, and show the chapel unroofed and ruinous, that of Grose suggesting that the eastern window had collapsed at the apex of the arch.
- 1.4.8 Charles Norris' print of c.1811 shows this arch complete, but he and Deeble's 1831 print show the top of the stair turret at the north-west corner of the chapel to have been in a state of advanced decay. The two earlier draughtsmen show a major collapse on the west and south elevations of the stair-head, so that only the north-west corner seems to remain with a perilous overhang of masonry above; Deeble, however, shows a more likely explanation, with the south-eastern corner lost, and the apparent overhanging masonry being the top

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In Appendix 13 of *Menevia Sacra* Yardley's version of Lord's plan is numbered in relation the latter's text, but the number in the north-west corner of the chapel which relates to this is tied to the description of the 'Sacristy' at the south-east corner of the chapel.

of the doorway onto the chapel roof. All these artists show the buttress on the south-western corner of the tower of St Marys, the window in the west wall at the head of the stairs, and a fairly complete wall top to the northern of the rooms over the narthex.

1.4.9 J.H. le Keux's engraving which illustrates Jones and Freeman³¹ shows little or no change to the buildings by the early 1850s. The chief interest here lies in the east wall of the 'sacristy tower', where both le Keux and Deeble show a series of six voids for east-west joists between the first and second floors, rather than the two which can be seen at present.

1.4.10 The frontispiece to Jones and Freeman shows the cathedral complex from the north-east, and, while it is a distant prospect, this shows that the north wall of the chapel may have been considerably more complete, apparently surviving to the wall top where there is a continuous upper string-course which returns onto the north-west stair turret. It also shows the low pitched gable of the west wall, as well as that of the eastern end.

1.4.11 In their description of the chapel Jones and Freeman add a number of details which are of use in considering the state of the structure at this time. They note that the undercroft in the 1850s was '*chiefly remarkable for its disgusting state of filth*'³², and that '*there is a four-centred doorway at each end, and a pointed one into the north-east corner of the cloister*'³³ - indicating that the present east window of the undercroft was a door at this time. At the west end of the north cloister walk,

'The ascent from the cloister was apparently by a flight of steps under an arch, but the steps have been destroyed, so that the inquirer has at present to climb up how best he may.' [p.184]

1.4.12 Jones and Freeman blame Nash for the destruction of the tracery of the chapel windows, though the evidence of Grose's engraving suggests that this had been robbed long before,

'The windows were shorn of their tracery, and apparently of a large portion of their ashlar jambs also, to furnish materials for the present

³¹ Jones and Freeman 1856, facing p.179.

³² Fenton 1811, p.39 states that the undercroft was '*afterwards converted into a charnel-house, through which a rill of water constantly passes*'.

³³ *ibid*, p.183.

west front of the Cathedral.' [p.186]

This accusation is perpetuated in Murray, Wight, and most later commentators.³⁴

1.4.13 They add to the drawn evidence by noting that the

'...range of buttresses is perfect on the north side; on the south one only remains, the others having been destroyed, apparently for the sake of their ashlar. [p.186]

There seems even then to have been little surviving evidence for the form of the roof beyond the shape of the gables,

'The chapel is now roofless; but as the gable was clearly quite low, and as there is not the slightest sign of vaulting, we may safely conclude that it had an ornamented timber roof of the type just coming into use in the period of its erection.' [p.186]

1.4.14 It appears that traces of a division could still be traced in the second bay from the west,

'The antechapel was rather extensive, occupying about a bay and a half; the extent may be ascertained by vestiges of steps. But the division appears to have been made so as not greatly to divide the chapel architecturally, as the place of the screen may be traced against the plaster below the string, and as it leaves the latter untouched, there could at all events have been no solid partition of a greater height. No vestige whatever of any internal arrangement remains, the whole building having been thoroughly gutted...' [p.186-7]

The west door was '*now entirely defaced*', and had been robbed of its ashlars.

1.4.15 The authors were of the opinion that the tower at the south-west corner of the chapel,

"...was crowned, or designed to be crowned, with a spire (probably of the broach form), as is shown by the squinches visible at the top of the interior. But at present it is broken off at the cornice, which is adorned

³⁴ It may be derived from a comment by Fenton, who refers to, '*the chantry chapel dilapidated as it is, and of late indiscreetly plundered of much of its ornamental stonework, is universally admired*'. Fenton 1811, p.54.

with angels.' [p.185]³⁵

The same may have been the case with the much smaller stair-turret at the north-west corner,

'This turret seems to have been crowned with a small spire, as some stones remain in the garden near its base, which look as if they could hardly have served any other use.' [p.187]

1.5 Neglect and decay (3) - the Cloister after the Dissolution

1.5.1 As already noted, Lord's 1720 plan of the close shows a complete circuit of the cloisters, with all four walks indicated, and in none of his records, drawn or written, does he mention the massive buttresses on the north side of the nave or the north-west corner of the transept. Writing of the cloister he states,

'The Quadrangle & Cloyster which are contiguous to ye north side of ye Cathedral Church, are now almost in ruins; there being now only round ye walls some remains of pillars, which give us a notion of what it hath been. The west Cloyster was formerly a Free School, or a library for ye use of ye College, (during which time, that which is now ye School, in ye church-yard, was a storehouse, & work house for ye use of ye Church. The other three sides of ye Cloyster were covered with lead, & served only for shelter, & were supported by pillars neatly wrought, as appears by ye remains of those round ye walls.'³⁶

1.5.2 All the early commentators are united in their testimony that the College complex was ruined very soon after the Dissolution, Browne Willis' Elizabethan manuscript refers to the complex as '*altogether ruinous*', and '*ruinous, and all*

³⁵ It seems likely that this spire was either never completed or was deliberately taken down, possibly having become unsafe - it is tempting to suggest that it was dismantled when the south-western buttress was added.

³⁶ *Menevia Sacra*, p.373. Regarding the school Yardley notes that, '*North east of the Archdeacon of Carmarthens grounds, in the Churchyard is ye School for ye instruction of ye Choristers; underneath which is one large vault, of equal length, where materials are deposited for ye use & repairs of ye Church*'. It is tempting to suggest in the light of Lord's testimony that this was the masons workshop - perhaps that from which the College was built.

uncover'd. At the Dissolution of the chantries the lead would certainly have been stripped from the buildings, and it is likely that much of the fine ashlar work - particularly that in the yellow limestone - would have been robbed out in short order. The small scale architecture of the cloister, now no longer having any function, would have been particularly vulnerable, and the almost total lack of finds of architectural fragments from the excavations in 1934 suggested to W.D. Carøe that, '*the destroyed cloister must have served as a local quarry - so little to help us has survived*'.³⁷

1.5.3 No other detailed description of the cloister appears to have survived, prior to that of Jones and Freeman, and certainly, by the time that they were writing the cloisters had much the same appearance as they did up until the excavations of c. 1934, and it seems likely that the only changes from Lord's day involved the erection of at least two (and probably four) of the massive nave buttresses.³⁸

1.5.4 The one possible exception relates to the outer wall of the west cloister, which is represented in some of the views of the west front which were engraved either side of the time that Nash was renewing it. Of these artists Grose is the least accurate in respect to the west front, and it is therefore unwise to rely too heavily on his evidence, but he appears to show a considerable amount of the west wall of the cloister surviving - including a first floor doorway at a point where evidence of such a feature still survives in the fabric.

1.6 The twentieth century

1.6.1 By the 1930s it is clear that the Chapel and its undercroft had been partly reclaimed, the undercroft in use, and the Chapel sufficiently stabilised that it could easily be entered. Marjorie Wight wrote that,

"The interior of the College [meaning St Mary's Chapel] is now occupied by a hut used for gatherings of the clergy, and the crypt beneath it contains the electric lighting plant of the Cathedral. The sum of £3,000 given by the Pilgrim Trust in 1931 has been assigned for the

³⁷ Carøe 1934, p.279.

³⁸ For the documentary evidence relating to the buttresses, see Sampson 1998, p.19-22.

preservation of this building.’³⁹

This grant is referred to in the preamble to his 1934 excavation report by W.D. Carøe, when he says that,

‘A sympathetic and timely grant by that gracious and helpful institution, ‘The Pilgrim’s Trust’, has not only helped materially to stabilize the ruins of St. Mary’s Chapel but has enabled the ancient scheme of the cloister to be laid bare by the removal of about 2 feet 6 inches of earth which had accumulated over its foundations.’⁴⁰

1.6.2 Carøe’s excavations left the cloister garth in much the same condition in which it appears today, exposing the bases of the pentice walls on east, west and north walks; and also providing a limited number of architectural fragments sufficient to make a tentative reconstruction of the superstructure of the cloister. These excavations will be discussed in more detail in Section 4.

1.6.3 His repair work on the standing structure is barely reported in his 1934 paper. He refers to the renovation of the narthex stair beneath the tower, noting that,

‘Fifteen well-proportioned steps led up from the cloister to the narthex floor, the end of one being *in situ* and giving the key to all.’⁴¹

and his photograph of this area on the preceding page shows that the renewed entrance arch in the south elevation of the tower had already been erected. Not only was the access to St Mary’s Chapel made safe and easy, but it seems from the dated graffiti that the renewal and repair of the staircases to the first-floor narthex chambers and to the garden at the north of the chapel was carried out at this time or before.

1.6.4 Most of the graffiti belong to the 1930s to 50s, but one appears to be dated 1917, and it is evident that some of the work lumped together here in the early 1930s had been going on for a considerable time before. The 1923 ‘Twr-y-Felin Guide to St Davids’ mentions that,

³⁹ Wight n.d. p.41-2.

⁴⁰ Carøe 1934, p.279.

⁴¹ *ibid.* p.285. The step referred to is marked on the plan [Plate 1] as being that above and immediately behind the western angle shaft at the NW corner of the cloister. This still survives *in situ*.

'A pathway has been formed by Dean Williams at the back of the building, and the entrance into the Chapel opened, whereby visitors by special permission may enter and inspect the ruin. A hut also is being erected within the precincts which will be used as a Retreat House for Clergy.'⁴²

The same publication includes a photograph of the Chapel looking north-east, and showing that the wall tops were still in a decayed state, the eastern window on the south elevation having lost the crown of its arch. The window in the west wall of the narthex, at the head of the stairs, had been blocked. A broad curving pathway crossed the cloister garth, and much of the eastern two bays of the chapel were covered in ivy.⁴³

- 1.6.5 The year before, in 1922, the report of the Cambrian Archaeological Association's Haverfordwest meeting states that during their visit to St Davids W.D. Caröe acted as their guide, the tour including St Mary's College, which

'...contains typical work of the period, now to be well seen, as the ivy which hitherto enveloped it has recently been removed. A ruined staircase upon the north side has recently been put in order so that access to the interior - heretofore denied - is now possible... Two dedication crosses on the exterior of the north wall of the chapel were pointed out. These are of the normal form and scratched upon the original plaster and were formerly coloured.'⁴⁴

The photograph of St Mary's Chapel printed in the account shows the building from the south west, its southern wall-top showing some plant growth (probably valerian), with the apex of the eastern window broken out, the two eastern buttresses (and the top of the western) decayed; however, the north elevation appears completely black, and this may indicate the extent of the ivy growth prior to Caröe's intervention. The photograph of the north side of the nave in the same publication also shows considerable growth of ivy on the western buttress.

⁴² Evans 1923, p.92, footnote.

⁴³ This suggests a fairly early date for the photograph, since Caröe is unlikely to have tolerated this for long. He wrote in his report on the Bishop's Eye Gate, Wells, on 19th December 1902 that, "a sentimental regard for this insidious but destructive parasite is incompatible with any reverential respect for the stones of an ancient fabric."

⁴⁴ Arch. Camb. lxxvii (1922), p.444.

- 1.6.6 By the next decade datable photographs show that the wall tops of St Mary's Chapel had been reconstructed to their present height, and it seems likely that this was done by W.D. Caröe in the 1930s, so that by the end of his campaign the Chapel was wanting only its roof.
- 1.6.7 The roof was provided by his son Alban Caroe between 1959 and 1966, when the refurbished chapel was dedicated. The hut described by Wight must have been taken down, and the newly roofed building was provided with a new west door and flanking openings - one on the south to a cupboard, the other to the north being a new opening through the wall into the north end of the narthex, the northern bay of which was closed off with a new south wall to form a kitchen.
- 1.6.8 The windows were renewed in pale yellow limestone (probably from one of the Bath quarries, judging by the other limestone restorations in the chapel), but, rather than provide a pastiche of the Perpendicular tracery, Caroe has opted to introduce the most austere gridwork of mullions and transoms. The surround of the eastern window on the south side has had to be rebuilt.
- 1.6.9 The internal string-course which runs right around the chapel was renewed, leaving short lengths of undecayed medieval Caerfai stone in situ, and the rubble stonework below this level was plastered. The door to the stair in the west bay of the north elevation was remade in new Bath stone. Most of the interior appears to have been limewashed, but there are patches on the west wall and the east bay of the south wall where the Caerbwdy rubble is still exposed.
- 1.6.10 At the east end of the chapel a fire-escape was created by driving a hole for a new doorway through the north wall at the centre of the recess left by the removal of the tomb of Bishop Adam Houghton (in the process removing the bones of the founder), and supporting an exterior landing and flight of concrete steps on transverse beams let into the medieval fabric beneath the new doorway.
- 1.6.11 In the undercroft the present heating system was installed, the boilers occupying a pit sunk in the south-west corner of the chamber; it is likely that the flagstone floor of the western part of the undercroft may date from the earlier period when the electrical system was installed. The south wall was breached in two places to allow the heating ducts to pass down the east and west cloister walks, and a flue appears to have been let into the south wall between the western bay and the next bay to the east, since the chimney discharges above the buttress at this point. A brick wall dividing the undercroft into two

unequal parts was erected either at this time or under W.D. Caroe.⁴⁵

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The death of Martin Caroe has meant that it has been impossible to inspect the company's papers regarding work at St Davids at this time, these being stored in the loft of his house. They are to be transferred to the NMR, and once there will be checked for information to refine the history of the 20th century work.

2 St Mary's College: An Architectural Description of the Chapel and Cloisters

NOTE: Since the Cloister project does not affect the conventual buildings of the College to the north of the Chapel these have not been included in this section. Here only the Chapel and cloister are described - with regard to the former, the exterior elevations first, followed by the interiors. Because all of the significant surviving fabric of the north walk of the cloister is incorporated in the south wall of the Chapel block the former is dealt with in that context.

2.1 St Mary's Chapel

2.1.1 Introduction

The Chapel of St Mary and its associated undercroft stand on the northern side of the Cloister Garth opposite the north nave aisle of the Cathedral.

2.1.1.1 The undercroft

2.1.1.1.1 The undercroft has no windows on its southern elevation, since on the exterior this is occupied by the north wall of the north walk of the cloister; there is, however, an entrance to the eastern end of the undercroft on this side through a doorway in the north-east corner of the cloister. Since its interior is roofed with a continuous longitudinal vault there is no requirement to divide it into regular bays. There are six windows on the north side, with a further window in the west wall to the south of the door. In addition to the door from the cloister there were doorways placed centrally in each end, that to the east now converted into a window. The second 'bay' from the west end on the north side lacks a window since this area is occupied on

the exterior by the stairs from the western garden of the College to the Chapel above.

- 2.1.1.1.2 The access routes into the undercroft are unusual in relation to the overall plan of the College buildings, since there would appear to be no direct route into it from the domestic buildings to the north. There is not, and apparently never has been, any access from the stair-turret which serves the Chapel on the north side, even though it would have been relatively simple to provide a doorway here. Access through the two end doorways would seem to have entailed leaving the College grounds, and architecturally the most important doorway is that in the north-east corner of the cloister, facing towards the Cathedral rather than the College. Eighteenth century tradition records that it was '*said to be a charnel house*',⁴⁶ and Fenton notes in addition that a '*rill of water constantly passes*' through it. By 1856 it was '*chiefly remarkable for its disgusting state of filth*'.
- 2.1.1.1.3 The provision of extensive cellarage beneath the communal buildings and houses of the College almost certainly provided the eight priests and their servants with sufficient storage space more conveniently placed for their purposes, and it seems altogether probable that the Chapel undercroft served a different need, perhaps unconnected with the functioning of the College. The existence of a '*rill of water*' running constantly through the undercroft suggests that by 1811 a conduit had been broken into and exposed.
- 2.1.1.1.4 Such a conduit is likely to be either associated with the drainage of the site, or with the water utilization required by the College. In the former instance there would seem to be no particular reason why a drainage system should be run beneath (rather than around) one of the major buildings on the site; but it is possible that a flushing system of some sort may have been necessary in the context of the use of the undercroft, and this aspect of the water system may help to clarify the function of the building. It seems probable that in either case the conduit will have discharged into the River Alun, and the retaining wall of the east bank of the river may well preserve signs of its former presence - since it was still apparently functioning in the early nineteenth century. If there are signs of the former existence of an outflow this may well provide clues to the position of the channel within the undercroft.

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Menevia Sacra p.373, Browne Willis p.24-5.

2.1.1.2 The Chapel

- 2.1.1.2.1 St Mary's Chapel stands above the undercroft and was reached by a wide stair at the western end opening beneath the tower at the south-west corner of the building. In addition to this grand formal approach there was a broad vice on the north side rising from the western garden of the College into the ante-chapel in the second bay from the west. The main stair at the west end gave onto a landing (which may have had a chamber at the northern end - now occupied by a modern kitchen) with access into the Chapel through a doorway central to the latter's west end. Above the stairs, and reached from a stair and passage opening from the northern vice, were two chambers, the northern with a window looking into the Chapel (suggesting that it may have been the office of the Master), and the southern in the body of the tower.
- 2.1.1.2.2 Evidence recorded by Jones and Freeman and by W.D. Caröe suggests that there was a low (?wooden) screen (at or below the height of the string-course) dividing the ante-chapel from the Chapel a bay and a half from the west end. The sills of the windows were probably placed high to accommodate the canopies of the stalls provided for the College priests, the western of which would probably have returned against the screen. The tall windows occupied the three western bays on each side and the east end of the Chapel, the eastern bay being occupied on the south by the north elevation of the 'Sacristy tower', and on the north by the magnificent tomb of the founder, Bishop Adam Houghton. There are traces of the doorway to the 'Sacristy' and a destroyed piscina on the south wall of the east bay. The west wall is plain except for the opening into the upper chamber, a broad relieving arch and the western doorway (there now being two further modern openings flanking the latter).
- 2.1.1.2.3 There are no traces of vaulting on the upper parts of the side or end walls, and it seems certain that the chapel possessed a wooden roof of relatively low pitch.
- 2.1.1.2.4 At the south-western corner of the building, standing over the end of the narthex stair, is a plain square tower.
- 2.1.1.2.5 After the dedication of the Chapel a series of large consecration crosses were incised into the plaster with which the rubble stonework was finished, and of these two have been preserved on the interior (one of which retains traces of medieval pigment), and traces (more or less fragmentary) survive on the exterior of perhaps as many as eight others.

2.1.2 The Exterior of the Chapel

2.1.2.1 The North Elevation

2.1.2.1.1 General Description

2.1.2.1.1.1 The chapel block is a two-storeyed structure, of four bays (with a fifth bay forming the western narthex) in the upper part, and (on this elevation) of seven in the undercroft. It is constructed of rubble with ashlar facings for window and door jambs, and solid ashlar buttresses over the upper part (only) of the elevation. These buttresses, dividing the chapel into its four component bays, begin on the weathering courses beneath the sills of the windows and have no continuation onto the lower part of the chapel elevation or that of the undercroft. The base of these triple weathering courses beneath the sills terminates in a moulded string, whose upper face is contiguous with the weathering, and which projects beyond the plain rubble walling of the elevation beneath.

2.1.2.1.1.2 It is from the top of this off-set weathering that the buttresses rise, setting back twice in the course of their height - and in each instance the reduction in the depth of the buttress is marked by a projecting weathering: the lower of these just above the transom of the Chapel windows, the upper approximately half way up the window heads.

2.1.2.1.2 The geological composition of the walls

2.1.2.1.2.1 Like the rest of the Caerfai stone dressings, the original stonework of the buttresses on this elevation appears much greyer than is normal for this type of block; a colour partly due to the populations of lichen which it supports, but probably also indicative of the specific bed which was being worked at the time of the construction of the building.

2.1.2.1.2.2 This would appear to provide a useful marker for the identification of original

Caerfai stonework in the College complex. On this basis it would appear that the upper courses of the buttresses have been renewed in the post-medieval period, since the top five courses of the central two buttresses, the top seven of the western, and perhaps even more of the eastern, are of the more usual much darker purple colouration, suggestive of a source in Caerbwdy bay. It is clear, however, that the latter dark bed was being worked for rubble in the fourteenth century, since this is the colour of the stonework exposed above the inserted modern fire escape in the eastern bay (as in other parts of the building, notably the sacristy, for instance).

- 2.1.2.1.2.3 The lower parts of the building on the north elevation appear to have a much greater admixture of buff and greenish stone within the rubble fabric - though much of this is obscured by what would appear to be original plaster finishes surviving in a fragmentary state. These finishes also remain to a degree on the upper parts of the elevation, covering much of the eastern bay (which is blank of fenestration) and also surviving sufficiently to assist in designating what is and is not original around the windows of the three remaining bays.
- 2.1.2.1.3 The undercroft elevation
- 2.1.2.1.3.1 The ground falls somewhat towards the River Alun from east to west, and it would appear that the levels of the windows of the undercroft follow this slope, whereas the string-course beneath the Chapel windows is more truly horizontal. Thus, the window beneath the centre-east buttress is 3.08 metres beneath the level of the base of the weathering-string (to the face of the chamfer above the flat head of the window), whereas the corresponding window beneath the centre-east buttress is 3.27 metres over the same measurement, indicating that there is a run of approximately 20 cm. between the two bays.
- 2.1.2.1.3.2 There are six windows opening into the undercroft on this elevation, spaced without any relation to the divisions of St Mary's Chapel itself, the base of the easternmost window probably having been truncated relatively recently, but certainly being shorter than the remaining openings. It seems likely that part of the works associated with the insertion of the modern fire escape in the north-east corner included the raising of the paving at this point - by a total of three steps - which has blocked the lower part of the window. This eastern window lighting the undercroft has clearly been reduced in height at the base, since the jambs run vertically down beside the (renewed) sill stone, this latter not being a single block running across the whole base of the window as is the case elsewhere, but simply being a

filler inserted between the jambs.

2.1.2.1.4 The consecration crosses

2.1.2.1.4.1 Two original incised consecration crosses can be identified on the lower part of this elevation, together with what is probably the remains of the plaster pad on which the third was incised - the latter still surviving adjacent to the lower window of the vice towards the western end. As on the southern elevation (and, indeed, the interior) these crosses have been positioned with some precision directly beneath the three central buttresses.

2.1.2.1.4.2 These crosses appear to be restricted to the chapel itself, following the normal disposition of three to each elevation, symbolising the twelve gates of the New Jerusalem which the building prefigures. Dom Aelred Watkin has noted the existence of plaster 'pads' upon which he believed that consecration crosses were painted on the exterior of Somerset churches - the modern taste for repointing church walls has often swept these away unnoticed.⁴⁷

2.1.2.1.4.3 The survival of these crosses provides a marker for identifying the nature and composition of the original fourteenth century plaster.

2.1.2.1.5 The vice and the stairs to the upper narthex chambers

2.1.2.1.5.1 The only part of the architecture of the sub-structure of the chapel block which relates formally to the upper part of the elevation is the small projecting demi-hexagonal vice which occupies the lower section of the western bay of St Mary's Chapel (and the penultimate bay of the whole block). The existence of this feature and the fact that it is integral to the initial fabric clearly indicates that while there is very little formal relationship between the undercroft and the Chapel, it is evident that the two were planned and erected as a unit.

2.1.2.1.5.2 On the north western angle of the projecting vice, rising to a little above the height of the springing of the doorway on its northern elevation, there is a

⁴⁷ Watkin 1969 p.12.

recess which appears to represent the point at which a wall of approximately 1.55 m. high originally formed a junction. This seems initially more likely to have been a land division or garden wall than part of a more substantial structure, since there is no evidence of any other related feature on the lower elevation of the building, and the window in the westernmost bay of the undercroft would have been enclosed by any substantial building that extended westwards, and the vice door by a building to the east.⁴⁸

- 2.1.2.1.5.3 Apart from the four-centred arch of the door the northern elevation of the vice is quite plain; the windows lighting the stair and the passage being in the two angled faces.
- 2.1.2.1.5.4 The western end of the Chapel on this elevation incorporates a square stair turret; accessed both from the vice and from the doorway in the north wall of St Mary's Chapel via a horizontal passage in the thickness of the wall. This upper vice gives access to the chamber above the narthex and within the bell tower at this level. There are two tall square headed windows in the lower part of the elevation of this stair, facing northwards; a further one facing eastwards adjacent to the wall face of the Chapel, and a small square one (with ?oolite block surround) immediately below the string-course level with the eaves line.
- 2.1.2.1.5.5 It is of interest that of the three string-courses on this stair turret the lower corresponds with the springing of the window head and the middle one with the eaves line as restored by A.D.R. Caroe; and that the lower one has a projecting block on the western elevation suggesting that Caroe has not built up the wall top of the room above the narthex to its original height, and that this projecting stone originally formed part of the upper structure of the northern narthex chamber.

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It has, however, been suggested in the hypothetical reconstruction of the College that a stair ran down from the first-floor Hall into the north side of the western garden, and ended opposite the vice, perhaps with a porch over its lower end. If so it is possible that a covered way crossed the garden, and that this wall-junction with the vice represents the western wall of such a pentice walk. Yardley's description also suggests the existence of a formal, and probably purpose built, approach to the chapel across the gardens, 'From the College there was a way that led directly into ye Chapel through ye gardens, which lay between ye Chapel & College.'

2.1.2.1.6 The Chapel Elevation: The windows of St Mary's Chapel

2.1.2.1.6.1 The extent of twentieth century repairs around the windows indicates the amount of rebuilding which was necessary in order to re-fenestrate St Marys Chapel in 1959/60, and in general less of the original tracery survives on this elevation than is found on the south. As on the south side the three windows occupy the western three bays of St Mary's Chapel. In the eastern window both jambs have been rebuilt, but the whole of the eastern side of the arch and just over half of the western side (upper) remains in situ. In the middle bay, likewise, the jambs are renewed over their full height; the eastern half of the arch lacks only the key stone, but only one block above the springing on the western side remains. The western bay alone retains a fragment of the transom; all but the upper block of the eastern jamb remaining together with the eastern half of the five-cusped light beneath the transom. Of the arch head, however, only three blocks above the springing (comprising approximately two thirds of the eastern half of the arch) still survive. As elsewhere the window arches were surmounted by relieving arches of thin Caerbwdy and St Nons sandstone voussoirs, the springing of these arches being considerably above the springing of the windows themselves, as if the decision to construct relieving arches had been delayed.

2.1.2.1.6.2 It is evident that A.D.R. Caroe has followed the original window elevation in his ascetic Bath stone tracery; the transom being at an equivalent height to the medieval fragments still surviving. Although the surviving medieval cusps of the eastern half-light in the west bay do not quite reach the centre of the Caroe light it seems unlikely that the medieval window had more than four lights - probably the mullions were somewhat larger than those of the modern renewals.

2.1.2.1.7 The Chapel Elevation - the eastern bay and implications of the geology

2.1.2.1.7.1 Above the weatherings the eastern bay appears to be almost entirely composed of Caerbwdy rubble of a rich reddish purple colour (such as may also be seen on the eastern elevation of the sacristy block, for instance) - and this is at variance with the much greater mixture of grey and buff stones in the fabric beneath the weatherings, though it would appear that most of the original fabric of St Marys Chapel also consists exclusively or near exclusively of Caerbwdy stone. This suggests that the building rose in horizontal lifts, but the consistency of the greyish bed for the ashlar suggests that there was not any major delay between the completion of the

lower fabric and the commencement of the upper.

2.1.2.1.8 The medieval scaffolding

2.1.2.1.8.1 Putlog holes are scarce on the lower fabric, though more common on the upper, though the only clear consistent lifts are those represented in the western elevation of the eastern buttress, where three lifts can be seen, and above this a fourth lift corresponding with the spandrels above the windows. These holes through the buttress adjacent to the northern face of the main north elevation generally correspond with the putlog holes which can be discerned in the eastern bay, and more sporadically in the remaining three bays of this side. Assuming a lift on the top of the weatherings or the sills of the windows, there are a further four lifts visible suggesting five or six sequences of putlogs in the medieval construction scaffolding from the top of the weathering to the apex of St Marys Chapel.

2.1.2.1.8.2 There is a clear correspondence between the putlog levels on the plain rubble of the east bay of the north elevation of St Mary's Chapel and those on the eastern buttress's side elevation. Below, on the lower part of the elevation, putlog holes are much more sporadic, the only clear one being beneath the window of the centre west bay a little less than half way down from the string to the heads of the undercroft windows.

2.1.2.1.9 The inserted fire escape

2.1.2.1.9.1 There has been considerable disruption to the fabric as the result of the insertion of a door and concrete stair forming a fire-escape in the north-east corner of the Chapel. Here an area of walling (within the imprint of Adam Houghton's lost tomb) has been cut through in order to create a doorway, and beneath this a further area has been disturbed by the insertion of the concrete lintels which support the landing and the angled beam which bears the stairs. However, on the basis of a ground-based inspection this appears to be the only significant alteration to the fabric beneath the sills of the windows.

2.1.2.2 The South Elevation

2.1.2.2.1 General description

2.1.2.2.1.1 The southern exterior elevation of the Chapel building incorporates the north elevation of the north cloister alley, so that the whole of the lower 4 metres relates to the architecture of the cloisters rather than to the undercroft and chapel whose structural wall it is. Only in the bays at either end of the walk are there features belonging to the Chapel, in the tall arched opening to the narthex stair (west end) and the two-centred doorway into the undercroft (east end).

2.1.2.2.2 Elements of the lower elevation related to the Chapel block

2.1.2.2.2.1 The variations in ground level

2.1.2.2.2.1.1 As on the north side the basement level of the Chapel block follows the natural slope of the ground, so that the bays of the north walk of the cloister, still preserved on the south wall of the main building, become progressively taller from east to west: thus, in the easternmost bay the shaft length between the base of the neck ring of the capital and the uppermost moulding of the base is 1.89 m., whereas in the bay immediately west of the entry into the narthex of St Mary's Chapel the eastern shaft (the western being destroyed) measures 2.08 m. between the same fixed points.

2.1.2.2.2.2 The geology of the walling stone

2.1.2.2.2.2.1 As has already been noted with regard to the northern elevation, much of the sandstone ashlar, particularly in the lower part of the wall, has a distinctly grey colouration, unlike the rich purple of the Caerfai/Caerbwddi stone more normally used elsewhere, and used here for the rough rubble

walling stone. There are a few blocks of the richer purple stone, particularly in the wall-shaft between Bays 3 and 4 (counting from the west), but the great majority of the ashlar stone is of the greyer bed. The lower quoins of the tower above the narthex are also of a similar colouration, as is the buttress of St Mary's Chapel between the two western windows - whereas the two eastern buttresses of the Chapel are of the purple stone, and the freshness of the cutting, and the small block size of the coursing suggest that these are renewals.

- 2.1.2.2.2.2 It is of note that much of the ashlar forming the corner of the buttress to the south-west tower [which will be suggested as a later reconstruction below - see Section *****] is also of this stone-type - though interspersed with the purple bed - perhaps suggesting that the grey bed block is architectural salvage from the demolition or collapse of part of the cloister, incorporated into this additional structure in order to stabilise the tower after the loss of the support of the west cloister.
- 2.1.2.2.2.3 The carved elements of the structure, other than the attached wall-shafts and wall-ribs of the vaulting, are of a yellow oolite, this material comprising the bosses at the apices of the vaulting (sometimes with one or more of the flanking wall-rib blocks), at least the three eastern vault-springers (and probably several of the others to the west - certainly including that to the west of the narthex opening) and the framing mouldings of the windows of St Mary's Chapel above, where these survive. There seems to be little of this material, however, in the window openings of the tower at the south-west corner over the narthex stair. It is clear from the quality and delicacy of the carving of the surviving vault-ridge bosses that this structure was very finely finished.
- 2.1.2.2.3 The narthex archway
- 2.1.2.2.3.1 In Bay 1 the opening to the narthex is considerably taller than the remainder of the blind arcade of the cloister walk, and at the western margin both the springer of the medieval arch and the next block up survive, enabling the geometry of the arch to be established. Above this the relieving arch has been renewed by W.D. Caröe, using a mixture of Caerbwdi, St Nons and other local building stones. The eastern edge of the narthex entrance arch has been damaged, with three blocks from the attached corner shaft and the vaulting springer missing, but each leaving an imprint of the shape of the lost stone to give their general dimensions; while the capital block partly survives, but has been broken away on the corner of the wall. The imprint of the first arch stone is also visible above the springer.

2.1.2.2.2.4 The undercroft doorway

2.1.2.2.2.4.1 In the eastern bay of the north walk the undercroft was entered through a doorway with a pointed two-centred head - the mouldings almost erased by weathering and decay - above which is a relieving arch (which may be partly or wholly renewed), consisting of green St Non's sandstone with approximately 30% Caerbwdi voussoirs.

2.1.2.2.2.4.2 The apex of the cloister wall-rib in this bay is missing from approximately half way up the arch on each side.

2.1.2.2.2.5 Putlogs in the cloister construction

2.1.2.2.2.5.1 There are traces of a line of putlog-holes discernable at a level a little below the height of the cloister capitals - but it is of interest to note that none of these appear to align vertically with the positions of the standards relating to the construction of St Mary's Chapel, perhaps suggesting (as on the north side) that the undercroft was constructed initially from a scaffolding which was then struck before the Chapel was built from a subsequent scaffolding.

2.1.2.2.2.6 Possible break in construction

2.1.2.2.2.6.1 There is a possibility that there is a season break at the height of the capitals of the north walk of the cloister range, since there is what appears to be a fairly consistent 'levelling course' of small St Non's sandstone pieces at the height of the capitals in Bays 6, 7 and 8 - this also being the height at which the line of putlogs appears to occur, and is also the height of the apex of the relieving arch of the door to the undercroft in Bay 9.

2.1.2.2.3 Elements of the north cloister elevation preserved in the south wall of St Mary's Chapel

The north walk of the cloister was of nine bays, the westernmost occupied by the higher arch giving access to the stairs of the narthex; the eastern bay containing the smaller doorway to the undercroft. Between these two openings the seven blind arches of the cloister walk are still preserved.

2.1.2.2.3.1 The roof structure and roof-space of the cloister

2.1.2.2.3.1.1 Above the apices of the cloister vaulting there is a series of projecting corbels which must originally have supported a wall-plate which would have received the ends of the rafters of the pentice roof of the cloister. The corbels are arranged with one over each bay-division shaft, and the next over the apex of the vaulting. Above these the underside of the drip-course beneath the weatherings under the sills of the windows of St Mary's Chapel appears to have been recessed to receive the flashings of the lead roof. The height of the windows of St Mary's Chapel indicates that the north cloister walk was of a single storey.

2.1.2.2.3.1.2 The construction of the walling between the vaults and the lead roof is of the same sort of random rubble as the remainder of the north wall of the cloister, largely consisting of Caerbwdi/Caerfai stone, with occasional pieces of St Non's sandstone and igneous rock. Above each of the vaulting springers a flat horizontal stone projects slightly from the wall-face - though this is probably more likely to be a twentieth century attempt to preserve these elements of the building by inserting water-sheds.

2.1.2.2.3.1.3 Above the central bay, within the roof-space of the cloister, there are the remains of a relieving arch - though much of this area would appear to be a post-medieval rebuilding, and it is probable that this is a later insertion, rather than being an indication that there was once (or was once intended to be) an opening into the undercroft in this position.

2.1.2.2.3.2 The north-west angle of the cloister - traces of the west cloister roof lines

2.1.2.2.3.2.1 In order to accommodate the taller arch over the narthex stair in this angle, the string course which runs along the base of the sill-weatherings of the

first floor windows rises above the junction of Bays 1 and 2 of the cloister for the height of four courses, before turning horizontally and running across above the renewed relieving arch, whence it returns onto the outer wall of the west cloister range incorporated in the south-west corner buttress of the tower. Here the string course exists only for one block beyond the angle, after which a distinct crease in the plaster-work is visible, running horizontally out to the ashlar quoin of the buttress, where (significantly) it terminates against the back of the quoin stone about halfway up its height.. This suggests that the quoin stone (and, by implication, the whole quoin) was placed in this position after the removal of the fourteenth century cloister roof. There is no sign on the southern face of the buttress at this height of any trace of the return of this roof line.

- 2.1.2.2.3.2.2 What would appear to be an original sequence of putlog holes rises on the north bay of the west wall of the cloister at this point, a little to the north of the centre-line of the bay, with one possible putlog at or just below capital level (though there are two other possible candidates - one above and one below this point), and then three (partly blocked) holes roughly coincident with the vertical line projected from the end of the returning string-course. This suggests that at least this height of the fabric of the outer west wall is of fourteenth century date.
- 2.1.2.2.3.2.3 It is difficult to gauge the relative dates of the plasters on this fragment of the west wall of the cloister, since there appears to be very little difference between the plaster containing the crease of the fourteenth century roof line and the plaster of the jamb of the inserted doorway at the southern margin of this wall - which material is also found over the site of the lost springer at the southern margin of this northern bay. Thus, it would appear that (as is so often the case) medieval and post-medieval mortars have similar colour, texture and aggregates, and have been feathered together so skilfully that a junction cannot be identified. This area will be described further when considering the form of the later adaptation of the west cloister to a two-storey structure.
- 2.1.2.2.3.3 The consecration crosses and their plaster substrate
- 2.1.2.2.3.3.1 The north walk of the cloister was of nine bays, the westernmost occupied by the higher arch giving access to the stairs of the narthex; the eastern bay containing the smaller doorway to the undercroft. Between these two openings the seven blind arches of the cloister walk are still preserved, containing areas of plaster finish, including at least three patches which must date from the completion of the fourteenth century structure. These

patches, in Bays 4, 6 and 8, (counting from the west) preserve traces (in the former two) of the incised consecration crosses, cut into the plaster with dividers. In each instance these are sited immediately below the buttresses of the first floor chapel, suggesting that they were sighted off the line of the buttress, and implying that the superstructure of the cloister had not been built against the south wall of St Mary's Chapel at this time - since otherwise they would surely have been located symmetrically to the cloister bays. It seems clear that the medieval plaster mix was variable, since the colouration of these patches of original plaster in Bays 4 and 6 is quite different, while that in Bay 8 resembles that in the western bay (4). The colour variation and form of this plaster appears to be consistent with the remaining plaster over much of the rest of the structure, strongly suggesting that the greater part of this material dates from the fourteenth century.

2.1.2.2.4 South elevation of St Mary's Chapel - the upper storey

As on the north elevation, only the three western bays of the chapel are fenestrated, the eastern bay being blind, but forming the north wall of the 'sacristy tower' (see below).

2.1.2.2.4.1 The windows

2.1.2.2.4.1.1 Of the windows the two western ones are the best preserved, retaining as they do three of the transom springers (one on the west bay, two on the centre bay). All of the springers at the base of the upper tracery are missing, and no sign remains of the tracery stones within the arch - all that remains here on the soffits being the incised 'joggles' for mortaring in the innermost series of moulding/tracery blocks. The mouldings of the jambs are relatively well preserved, being almost complete on the east side of the west bay, and on both sides of the central bay - and both bays retain the complete outer moulding of the arch heads throughout their length.

2.1.2.2.4.1.2 The limestone used for these mouldings is somewhat variable in colour: the majority having weathered to a yellowish grey, but a number of blocks being of a richer orange colouration, suggesting the possibility that two quarries were supplying the site.

- 2.1.2.2.4.1.3 The eastern of the fenestrated bays (the second from the east end) appears to retain none of its jamb or arch stones, and there is a clear demarcation line around the inserted 1959/66 fabric which composes the frame of the window opening. The whole of the inner moulding of the arch head appears to be a renewal, and at least part of the apex of the outer relieving arch is also of twentieth century date. The base of this relieving arch, however, appears to be original - indicating that it, like those of the other windows of the first floor chamber, began somewhat above the springing of the window head, as if the decision to employ relieving arches in this position had only been taken after the springing was already begun.
- 2.1.2.2.4.1.4 The small rubble stonework above the three windows would appear to be of twentieth century date, and even the upper part of the central western buttress (which otherwise appears to be of the fourteenth century) is of the narrow coursed purple Caerbwdi stone which appears to be typical of the recent renewals.
- 2.1.2.2.4.2 The upper putlog holes
- 2.1.2.2.4.2.1 The system of putlog holes in the upper storey appears to be more complete on this elevation than it is on the north. These holes are located in the rubble walling between the jambs of the windows and the buttresses: the lowest lift at the height of the window sills, suggesting that intermediate standards could have been used with their putlogs passing through the window openings at this height. Putlogs at this height are found also in the blind bay of the sacristy north wall, and in the return of the western wall of the west cloister in its northern bay, suggesting that at least the projecting stub of the latter was built up with the chapel block.
- 2.1.2.2.4.2.2 The positions of a further three lifts are clearly visible on the chapel, with suggestions of the existence of a (filled) fourth lift at approximately the height of the upper ends of the relieving arch springers. The north elevation supplies the position of the last remaining lift above this, suggesting that six lifts were used in the construction of the elevation from the window sill to the base of the parapet.
- 2.1.2.2.4.3 The parapet
- 2.1.2.2.4.3.1 The loss of the upper parts of the wall has destroyed any trace of the form

of the putative parapets, though it is possible that some indication of their general form may exist as a scar on the east and north elevation of the south-west tower of St. Mary's, or conceivably on the upper parts of the stair-turret on the north-west corner. There is certainly a projecting stone (of sufficient depth for a pigeon to perch on) immediately above the line of the south wall near the south-east quoin of the tower.

2.1.2.2.4.3.2 What is the status of the rather ugly lion head in the re-entrant angle between the tower and the western bay at eaves level? It looks modern.

2.1.2.2.4.3.3 Caroe (W.D. or A.D.R.) has restored the upper parts of the buttresses to the height of his new roof-eaves, against which they terminate - did he have evidence for taking them to the full height, or was this merely convenient to support the projecting eaves?

2.1.2.2.4.4 The medieval (and later) plasters

2.1.2.2.4.4.1 As on the north side there are considerable areas of surviving plaster, all of which is close in colour and texture to the presumed medieval fabric of the lower part of the south elevation represented by the substrate of the consecration crosses. This plaster is well preserved in the internal re-entrant angle between the west bay of the chapel and the tower above the narthex - at which point it clearly returns over the ashlar of the corner, suggesting that the whole structure may have been plastered originally (and contrasting with the situation on the south face of the buttress at the south-west corner of the tower, where the plasterwork ends against the edges of the quoins).

2.1.2.3 The West Elevation

2.1.2.3.1 The lower storey

2.1.2.3.1.1 The base of the elevation contains the western doorway into the undercroft, together with a single light square-headed window with a (modern) central stanchion, approximately two metres to the south. These are the only

features which appear on the internal west elevation of the undercroft, and it is clear that there was never a second symmetrically placed window to the north of the doorway. It seems probable that the doorway is somewhat reduced in height, since the moulded jambs disappear into the existing tarmac and, within, the floor of the passageway through the wall slopes downwards into the undercroft, and at the inner end of this passage the internal door-jambs also continue down beneath the concrete and flagstone floor.

2.1.2.3.2 The Chapel storey

2.1.2.3.2.1 The three-light window which lights the head of the narthex stair is slightly off-centre in relation to the undercroft doorway, and its mullions and frame have been remade, with further renewals around the sill, the only apparently early fabric being the northern and perhaps parts of the southern side of the voussoirs of the relieving arch above.

2.1.2.3.2.2 The small window which lights the northern of the rooms above the narthex has had its northern jamb renewed, and there are signs of renewal around the sill - but it is possible that parts of the southern jamb and the lintel remain from the medieval fabric. The wall-top above the window has been renewed to a depth of approximately a metre or more beneath the eaves, and certainly some of the quoin stones on the north-west angle of the chapel-block are also new.

2.1.2.3.2.3 The horizontal string-course at the base of the tower continues to the southern face of the supporting buttress on the south-western angle on the western elevation, but on the eastern elevation of this buttress is absent, appearing only on the south elevation of the tower. It seems likely (if this were an original buttress) that the string-course would be returned on eastern face, and form a projection on the face of the weathering on the south face of the buttress (in the same way as is done on its west elevation).

2.1.2.3.3 The western elevation of the tower

2.1.2.3.3.1 Towards the southern edge of the tower there exists a series of nine quoin stones rising from the top of the projecting weathering on the west elevation, which line up vertically with the south-western angle of the top of

the tower, and must originally have represented the south-western corner of the tower. From here upwards this southern buttress has the appearance of being integral with the fabric of the tower, but it seems likely that the apparent coherence of the fabric in this area is merely the result of the removal of the quoin-stones of the tower and their replacement with coursed rubble during the construction of the buttress - this being necessary in order to avoid a vertical joint between the old and new fabric.

- 2.1.2.3.3.2 Jones and Freeman (1856) were of the opinion that the builders had determined upon constructing the buttress during the building of the tower, after the first nine courses had been erected, building the fabric of tower and buttress together above this point. Furthermore they suggested that there exists an upper sector of unkeyed fabric at the top of the buttress, but at the present time (based on inspection from the ground) this would appear to apply only to the string course with its decorative head-stop at the south-west angle, together with the course immediately below.
- 2.1.2.3.3.3 Within the fourteenth century fabric on the western elevation of the tower is a single light window (as, indeed, there is on each elevation), framed a little above mid-height by a pair of putlog holes, with a second pair of putlog holes approximately five feet above this. There is no obvious indication of the amount of fourteenth century fabric which had to be removed in order to accommodate the buttress, though the characteristically brownish render visible on the northern half of the tower elevation (particularly around the level of the sill of the window) is quite distinct from the much paler whitish material generally seen on and in the vicinity of the buttress itself, and which presumably dates from the time of the latter's erection.
- 2.1.2.3.4 Traces of the consecration crosses
- 2.1.2.3.4.1 At the level of the head of the door to the undercroft, and positioned above and slightly to the north of the centre-line of the undercroft window (which lies to the south of the door), is a relatively well-preserved area of original render, the upper and northern part of which appears to retain the impress of a circular feature, almost certainly the remains of an original consecration cross. This has a diameter of approximately 43 cm - identical with the diameter of the extant consecration cross beneath the central eastern buttress of the south side of the chapel.
- 2.1.2.3.4.2 Immediately above the undercroft door there are further restricted areas of surviving plaster of the same type - though these are extremely fragmentary and retain no indication whatsoever that any form of decoration

was ever applied to them. However, the height of the extant cross to the south is approximately the same as that of the apex of the door, suggesting that it is this latter feature which may condition the height at which the crosses were applied, and that a third cross would probably have existed on this elevation centred about 2.45 metres to the north of the centre of the door's keystone (this being the distance south to the centre of the existing cross).

2.1.2.3.5 A possible point of access to the western garden

2.1.2.3.5.1 At the north-west angle of the undercroft the quoins have been cut back as if to form an access to the garden to the north of the chapel (this area now being occupied by masonry linked to the river wall to a height of approximately 3.5 metres). Any such opening would have been partly blocked by the existing retaining wall for the east bank of the River Alun - it therefore seems likely that any putative opening on this site must have predated the erection of the existing river wall at this point.

2.1.2.3.6 The west cloister-buttress complex (west elevation)

2.1.2.3.6.1 The fabric at the northern end of the west elevation of the west cloister walk, where it adjoins St Mary's Chapel, seems likely to consist of a mixture of several phases of construction: comprising:

- fabric original to the chapel complex;
- the western wall of the west cloister (which is probably directly contemporary with this, but perhaps a slightly later phase in the continuous original building campaign);
- and the fabric of the subsequent buttressing (which was probably erected after the demolition of the west cloister in order to fulfil the latter's buttressing effect).

At the present time the precise disposition and limits of these phases is difficult to establish directly.

2.1.2.3.6.2 Below a height of approximately fifteen feet the neat ashlar quoins which form the southern limit of the upper parts of the south-west corner buttress

die out, and in their place the upper half of the remainder of the elevation is occupied by a splayed jamb, whose splay is angled south-eastwards from the exterior face, thus indicating that this cannot belong to a window, but must rather be the northern jamb of a lost door running through the wall at an angle. Fragmentary remains of the rubble-work forming the head of this door survive immediately beneath the quoin-stones of the buttress, and the masonry appears to have been finished with a yellowish-white render of a different colour to that on the exterior (but similar to the medieval material).

- 2.1.2.3.6.3 Below this the southern face of the lower part of the elevation consists of a 'raw' rubble-edged break, with no indication of a smooth jamb-face other than the two Caerfai stone blocks which appear to represent the base of jambs on the east side, and a worn threshold block between and beneath these, which may belong to a destroyed doorway, but which could equally be of a much later vintage (though *in situ* for long enough to have created the wear/weathering-pattern on the threshold block). The fact that no indication of a finished jamb face exists on the break in the wall so close to the expected position of such an opening suggests that the opening itself is probably fictitious - a break in the wall would surely have occurred on the line of the jamb (as, indeed, has happened above) - and that the wall of the west cloister alley originally ran southwards across this bay without interruption.
- 2.1.2.3.6.4 The upper storey door has a narrow rebate throughout the height of its south-east angle, suggesting that a wooden door-frame has been removed from this position. The apparent existence of a wooden, rather than a stone, door-frame suggests that this opening may have been created relatively late (i.e. in the early post-medieval period). The stone which would appear to form the position of the threshold of this first floor doorway is equivalent in height to the lost capitals of the fourteenth century cloister walk, and the render which forms the angle of the doorway covers the position of the springer for the cloister vaulting - indicating that the door has been created after the slighting of the cloister vault. Indeed, the southern half of the vault of the northern bay's west elevation may well have been cut back and partly destroyed when the doorway was made, since there is no sign of the springer-block, its position being occupied by random rubble overlaid with same white/pale yellow render as the face of the doorjamb.
- 2.1.2.3.6.5 The relationship between the buttress and the head of this door - seated, as the former is, immediately above it - suggests that the buttress is later than the door, therefore the succession of phases must be:
- (a). - the construction of the cloister
 - (b). - the slighting of the vaulting of the west cloister, with the creation of an upper storey at the old springing level

- (c). - the loss of the upper storey
- (d). - the creation of the south-western angle buttress against the tower

This is the clearest indication that the south-west corner buttress is certainly a post-medieval creation, probably made in order to secure the fabric after the destruction of the west cloister complex removed the prop which it had provided.⁴⁹

- 2.1.2.3.6.6 Probably associated with the upper doorway is the projecting footing immediately beneath it at the northern end of the west elevation of the west cloister alley, (drawn by W.D. Carøe but passed over without comment in his 1934 paper) the central part of which is now occupied by the pathway from the north cloister to the west front, Pen-y-Ffoss and the undercroft. This footing, as capped, and probably partly reconstructed by W.D. Carøe c.1934, is rectangular in plan, 0.92 m. wide, by 3.90 m. long (north to south); but at its northern edge the outline of the rubble footing is clearly curved, suggesting that it may have two phases of construction.
- 2.1.2.3.6.7 Immediately above this plinth, at a distance of 0.3 m. south from its northern edge, there is a large down-turned iron pin which projected 7 cm from the wall; while above this is visible a narrow vertical line of mortar adhering to the rubble walling and extending for an overall height of 1.33 m., on the same vertical alignment.
- 2.1.2.3.6.8 This mortar line would appear to be associated with a structure which must have stood upon the projecting footing, and it is tempting to suggest that it belonged to the northern edge of the wall of a stair by which the first-floor doorway of the west cloister was accessed (this stair probably having an exterior door rather than opening from the cloister alley). However, a photograph of the cathedral viewed from the north-west prior to 1880 (taken while Scott was restoring the north transept) in the Worsley collection and reproduced by Evans and Worsley⁵⁰ shows not only the temporary 19th century building against the north side of the north transept's western buttress (see Section ***** below), but also a smaller shed built against the west elevation of St Mary's Chapel. This shed would appear to have been a fairly ramshackle erection, but its southern margin is on the line of the vertical trace of cement adhering to the west cloister wall, and it seems likely that its presence is the explanation for this tantalising trace.

⁴⁹ See Grose's late 18th century engraving, and the comments on it in Section ***** above.

⁵⁰ Evans and Worsley 1981, p.42, pl.22.

2.1.2.4 St Mary's Chapel - East Elevation, exterior

2.1.2.4.1 The lower storey

2.1.2.4.1.1 The single opening in the east wall of the undercroft - now a glazed window with ferramenta - is strongly reminiscent of the doorway in the centre of the west elevation of this building, with a rubble voussoired relieving-arch framing the two Caerfai stone apex blocks which form the depressed four-centred arch head. The moulding of the opening is also similar; and Jones and Freeman in 1856 refer to this as being a doorway at that time. At present the interior elevation in this area is obscured by a notice-board, but diligent search for traces of the interior jambs running down below this point should be made during the course of the forthcoming work. The sill stone is modern. The exterior jamb moulding continues down below the level of the existing tarmac, and it is evident that the ground level here has risen considerably if this was indeed originally a door

2.1.2.4.1.2 The head of the door has been heavily coated with lime mortar/render, which exhibits characteristic squirl patterns. This material has been laid in over decayed stone.

2.1.2.4.2 Circulation routes to the College and Cloister, and a possible pentice walk

2.1.2.4.2.1 To the south of this is the arched opening into the north-east corner of the cloister, giving access from the College, perhaps via a pentice walkway (see below); and also presumably from the College of the Vicars Choral to the east. The voussoirs of the relieving arch of this opening begin a little above the springing of the arch (cf. the windows of the Chapel), and consist of the strongly bedded yellowish-green limestone, beneath which large Caerfai blocks form the archway proper.

2.1.2.4.2.2 The possibility that this doorway was approached by a pentice walkway running from the College garden is suggested by the existence of two very large projecting corbels, the top of the northern one (which remains complete) 3.33 m. above the present tarmac level, each originally consisting of three large ashlar blocks of progressively greater projection, the uppermost extending approximately 60 cm from the wall-face. Such

large projecting corbels must have had a supporting function, and it seems likely that they supported a continuous wall-plate against which a pentice structure could have been erected, providing a covered access between the garden of St Mary's and the north-east corner of the cloister, without having to pass through the first floor Chapel.

- 2.1.2.4.2.3 There is a reduction in the north-east angle of the Chapel block at ground floor level, as if a doorway might have existed in this position, its head now at a relatively low level in relation to the existing paving, though it seems likely (if the central opening in the undercroft's east wall were originally a door) that the ground level here has risen considerably.
- 2.1.2.4.2.4 There is no sign of a third large projecting corbel beyond the opening into the north-east corner of the cloister,⁵¹ suggesting that any pentice which may have existed at this point was constructed solely to provide access between the Chapel and the cloister.
- 2.1.2.4.2.5 However, the massiveness and the great projection of these two corbels suggests the additional possibility that they were used to support a heavier structure at first floor level with an open pentice beneath, allowing the possibility that an alternative approach to the north side of the cathedral existed running directly from the first floor accommodation of the College without having either to pass through the Chapel or descend into the College garden.
- 2.1.2.4.2.6 A first floor approach into the north transept may have existed at some time, since there are corbels at 'first-floor' level in the north-west corner of the interior, these being positioned at approximately the same height as those on the exterior of the Chapel block. This could have allowed direct access from the upper storey of the east walk of the cloister into a vice in the north-west corner of the transept and thence to a stair running down into the transept. Such an approach would also have been accessible from the east end of the Chapel via the 'sacristy tower'.

⁵¹ Though a small corbel reminiscent of those supporting the wall-plate of the north cloister's roof does exist here - see below, section *****.

2.1.2.4.3 The upper storey

2.1.2.4.3.1 The east window

- 2.1.2.4.3.1.1 The great east window of the chapel, already lost by the time of the earliest drawings, has been heavily restored by W.D. and A.D.R. Caroe, but the relieving arch (again beginning well above the springing), the rubble infill behind the moulded blocks of the apex of the window, the two carved label-stops at the springings of the hood-mould, and virtually the whole of the northern jamb all survive from the fourteenth century fabric. The southern jamb has been entirely rebuilt, as, probably, has the sill (now covered in lead); while the plain Bath stone grid-work of the mullions and pair of transoms date from c.1959-66.

2.1.2.4.3.2 The medieval construction scaffolding

- 2.1.2.4.3.2.1 The positions of the surviving putlog holes suggest that up to three campaigns of scaffolding were required in the original building programme:

- the first series are associated with the construction of the undercroft and the lower part of the east (outer) wall of the cloister, probably up to the height of the sills of the Chapel windows;

- this scaffolding then appears to have been struck, with the remainder of the Chapel structure being built off a scaffolding with standards in slightly different positions, with its putlog holes adjacent to the northern jamb of the window;

- thirdly, the scaffolding for the sacristy tower appears also to be slightly different to that of both the undercroft and Chapel east wall.

- 2.1.2.4.3.2.2 It is tempting to suggest that the line of putlog holes immediately above the projecting corbel blocks on the east end of the undercroft belongs to the principal rafters of the pentice or the joists for a first floor walkway - though it is clear that these are part of the constructional scaffolding system since there are holes belonging to the next lift up flanking the east window, and at the same height beneath the first floor window of the sacristy tower - all of which line up with the standards associated with this lower series of holes. It is nonetheless possible that the lower set were subsequently

utilised in the structures associated with the massive corbels.⁵²

2.1.2.4.3.3 Late repair in the gable

- 2.1.2.4.3.3.1 At the apex of the east window the stone type within the outer relieving arch changes from narrow Caerfai rubble (which forms the lowest four-fifths of the arch) to the strongly bedded greenish stone at the top. It is possible that this alteration in the geology lies within the area of rebuilding which is clearly visible as small Caerbwdy stone in Portland cement, and which occupies the upper 1-2 metres of the wall. At the apex of the wall, immediately beneath the eaves of the modern roof, there are even more recent areas of rebuilding characterised by the use of a yellow ?cement mortar of the same colour and texture as that used in the reconstruction of the south jamb of the window etc..

2.1.2.4.4 Survivals of medieval render

- 2.1.2.4.4.1 Much early render exists to the north of the great east window, this being of an orange-buff hue, similar to the medieval colour but contrasting with that on the later tower buttress. Considerably less render survives to the south of the window, whilst over much of the eastern elevation of the 'sacristy tower' the render is altogether lost (though a considerable area still survives over the lower part of the elevation at the base of the line drawn from the southern extent of the 'tower'). The lack of any render over the ground floor of the Chapel (undercroft) means that all trace of the three consecration crosses has been lost on this elevation.

- 2.1.2.4.4.2 It is unclear why so little of the early render survives low down on this, the most protected of the exterior elevations of the chapel block

⁵² It is clear from other sites that putlog holes were often arranged so that they corresponded to the position of other features of the building, allowing them to be used to accommodate some decorative or constructional element. At Wells Cathedral and Glastonbury Abbey, for instance, putlog holes were made to fall in the position of label-stops - a way of making the unmortared filler-stone easier to extract for later maintenance scaffolds by gripping the projecting decorative carving.

2.1.2.4.5 The buttressing

- 2.1.2.4.5.1 The buttress on the north-east angle of the chapel is of considerably lesser projection than the buttress on the south-west corner of the tower, and largely lacks the weathering courses which are found on the latter - again suggesting that the tower buttress is a subsequent addition.

2.1.3 The interior of St Mary's Chapel and its undercroft

2.1.3.1 The Undercroft

2.1.3.1.1 The western chamber of the Undercroft

2.1.3.1.1.1 The undercroft of St Mary's Chapel is currently divided into two unequal sections by what appears to be a modern transverse brick wall sited approximately two-thirds of the way from west to east. The western room thus formed has four of the six window openings on the north wall (the second from the west being blocked by modern brickwork through which a heating duct passes - the space thus enclosed within the wall being accessible via a wooden hatch to the east of the duct). Between the first and second windows on the north elevation is the blank area of wall occupied on the exterior by the demi-hexagonal stair projection, and there is no obvious sign that there has ever been any communication between this stair and the interior of the undercroft - the wall surface being entirely consistent between the two window openings.⁵³

2.1.3.1.1.2 There are no signs of any openings to the exterior on the south elevation of this chamber, and it would appear that the roof of the undercroft is much too low to have ever allowed any access at the fifth bay of the north walk of the cloister, where what appears to be a relieving arch exists above the wall-rib of the arcade. It would therefore seem certain that this 'relieving arch' is a later insertion, perhaps designed to overcome settlement within the wall.

2.1.3.1.1.3 There are faint suggestions that the vault at the eastern end of the chamber was constructed in approximately seven foot lengths - it would be informative to plot the impressions left by the timber centring on which the vault was erected, since this would almost certainly give considerable insights into the building process. Towards the western end the vault has

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On the interior wall of the base of the stair, however, the area which a doorway would have occupied shows signs of disturbance - the stonework being (at least) repointed in a grey cement mortar - and it is possible that more detailed investigation or depointing might reveal a blocked opening.

been heavily repointed in cement; while over much of the central area the overlying plaster has been lost.

- 2.1.3.1.1.4 At the west end of the chamber the vaulting of the western bay is somewhat lower (by approximately 50 cm), presumably in response to the presence of the narthex stair and perhaps also the extra strength required to support the narthex block above. The vault has clearly been built up against the western wall, the walls side and end walls being in bond below the springing, the vault abutting the west wall. The lower line of the vault at this end means that the western window opening in the north wall has an almost flat roof to the splay, like those at the east, but that it emerges nearer the crown of the vault.
- 2.1.3.1.1.5 In all instances the recess required to accommodate the centring for the construction of the vaulting over the heads of the window openings is visible, and there is a similar recess for the construction of the head of the western door, and for the heads of the recesses on the south wall (as well as for the vaulting over the doorway at the north-east angle of the cloister).
- 2.1.3.1.1.6 On the south wall there are three low recesses, almost certainly well below the level of the floor of the north walk of the cloister outside - two close together towards the eastern end of the room, and one (partly destroyed by the insertion of the modern heating apparatus) towards the western end. The purpose of these recesses is obscure, but they form arched openings in the wall approximately a metre deep and less than a metre high at the apex of the arch. Each has a depressed arch and vertical jambs.
- 2.1.3.1.1.7 The floor of the eastern half of this chamber consists of rough cobbling of the same sort as was exposed during work on the lapidarium in 1995; while the western area of flooring (north and east of the intrusive pit occupied by the boilers) appears to consist of larger grey flagstones, the floor at this end running slightly uphill, the flagstones being partly capped and infilled with cement, the cobbles being partly overlaid by a thin cement screed. Since on the exterior the ground level slopes down from east to west, it seems likely that the cobbles (which also have this slope over the eastern end of the room) may be part of the original flooring, while the flagstones etc., belong to a later period.
- 2.1.3.1.1.8 A large rectangular pit has been excavated to accommodate the modern heating boilers in the south-western end of the chamber. The sides of the pit against the structure of the undercroft have been coated with cement, which prevents any examination of the lower parts of the fabric.

- 2.1.3.1.2 The eastern chamber of the undercroft.
- 2.1.3.1.2.1 The eastern chamber of the undercroft was recently (1994-5) renovated to form a lapidarium for the display of the early Christian monuments associated with cathedral. However, with their removal to the restored gatehouse of Porth y Tŵr (2001) this room is currently being used by a youth club.
- 2.1.3.1.2.2 The door from the cloister at the east end of the south wall opens onto a modern flight of five steps in oak. The east wall has a centrally placed window with a wide internal splay, its exterior opening very much wider than the narrow slits which provide light on the north elevation. On both jambs of the window head there are clear recesses for the centring. At the present time there is little or no sign that this opening extended downwards to form a doorway as Jones and Freeman (1856) record (though the central area beneath the window is obscured by a sign board). The mouldings of the window frame seem sound and consist of an elongated hollow chamfer, apparently matching the mouldings of the western door into the undercroft.
- 2.1.3.1.2.3 The north wall has one window readily visible, the other being concealed behind the modern panelled enclosure which occupies the north western third of the room. It is clear from its interior elevation that the lower half of the eastern window has been closed off by the raising of the exterior ground level, since half the existing depth of the glazed window is now below ground level - indicating that this change has been executed quite recently.
- 2.1.3.1.2.4 The interior has recently been limewashed, and it seems likely that traces of the impress of the construction centring still exist on the vaulting, and could readily be recorded.
- 2.1.3.1.2.5 There are traces of a longitudinal division of the chamber preserved on the vaulting towards the southern margin of the room and running across the opening through the vaulting for the cloister doorway. This scar suggests that the cloister door once opened onto a corridor running to the west, from which the main eastern chamber must have been approached.
- 2.1.3.1.2.6 The entire north-western sector of the room is now occupied by modern wooden panelling around heating ducts etc.
- 2.1.3.1.2.7 The extant floor level is approximately 20 cm above the floor of the western two-thirds of the chamber, but the discovery of a cobbled floor surface during building works in 1994-5 shows that the floor was originally at or

near the level of the western undercroft.

- 2.1.3.2 The stair to the Chapel from the College garden (i.e. to ground level, north side)
- 2.1.3.2.1 Whereas the radius of the stair in the narthex-turret is only 0.62 m., and the wall-passage which gives access to it is 0.65 m. wide, this stair has a radius at the top of 1.106 m., which reduces to 1.03 m. near the base. It is evident, therefore, that whereas the narthex tower stairway was intended for restricted use, this staircase was probably the normal thoroughfare between the College and the Chapel.
- 2.1.3.2.2 The stair consists of seventeen steps, a number of the lower ones of which have been capped with cement, while the upper ones have been renewed in cast concrete. The graffiti on the latter appear to begin in 1917, with the majority in the later 1930s and 40s, and run up to the 1960s, indicating that the repair was probably carried out by W.D. Caroe early in his repair campaign, and that some degree of unsupervised access was still possible here well into the 50s.
- 2.1.3.2.3 At the top of the stairs the internal roof consists of blue lias slabs, and there are considerable remains of plaster which dies out below the first half-turn, some of this plaster retaining a pinkish wash. At the top of the stair the eastern wall is recessed in order to receive the door into St Mary's Chapel - showing that the mid-twentieth century renewal of the doorway follows the original pattern. The form of the recessing suggests that at one time the door may have been flat-topped - but the working back of one of the roof stones suggests that such an arrangement was only temporary, since the reworked area cut to accommodate a door with a pointed head is as decayed as the rest of the block, showing the reworking to be of some antiquity.
- 2.1.3.2.4 The fabric of the doorway appears to be largely renewed on the (north) elevation towards the landing, though parts of the voussoirs of the plain rubble relieving arch could be original beneath their heavy coating of Portland cement. The arch towards St Mary's Chapel is entirely renewed (by A.D.R. Caroe, 1959-66) in a pale yellow limestone, probably from one of the Bath quarries.
- 2.1.3.2.5 The position of this doorway in the western bay of the Chapel, near its eastern margin, suggests that this major access into the Chapel led into a

screened-off ante-chapel - and traces of the seatings from such a screen might conceivably remain beneath the modern plaster-work of the dado. It is noteworthy that the lilac-coloured Caerfai stone string-course survives at the base of both the buttresses in this bay, and that there appears to be no marking of their surfaces as a legacy of such a screen.⁵⁴

⁵⁴ Jones and Freeman 1856, record the existence of vestiges of steps up from the ante-chapel into the chapel proper, and note that 'the division appears to have been made so as not greatly to divide the chapel architecturally, as the place of the screen may be traced against the plaster below the string, and as it leaves the latter untouched, there could at all events have been no solid partition of a greater height'. p.186-7.

2.1.3.3 St Mary's Chapel - interior

2.1.3.3.1 General introduction

- 2.1.3.3.1.1 The lower part of the walls up to the string-course beneath the windows is covered with 1960s plaster, except at the north and south sides of the east bay, where earlier features interrupt the string-course, and the modern plaster terminates against these areas of disruption. The string-course immediately beneath the window sills has largely been renewed in the mid-twentieth century, but there are sections of the original pale lilac Caerfai string at the positions of the two western buttresses and (on the south side only) at the position of the eastern buttress as well. This probably represents the result of decay caused by water running down the walls from the positions of the destroyed windows - though such a mechanism does not explain why the western string has been replaced wholesale. The new stone of the string-course, like the new stone of the renewed lower elevation openings, is a pale yellow limestone. Apparently also of limestone are the 1959-66 windows.⁵⁵
- 2.1.3.3.1.2 The remainder of the upper wall fabric appears to have been left largely untouched except for a coat of limewash which has either been partly shed from a large area of the west wall and the south elevation of the east bay, or has been only desultorily applied in the first place. Amongst this limewash there appear to be some areas of ?original plaster-work surviving, particularly on the north elevation of the east bay, and the south west corner of the chamber at high level. At present the long curtains obscure much of the stonework between the side windows and on either side of the east window, rendering detailed examination of these areas impossible.
- 2.1.3.3.1.3 It is clear that some elements of the internal jambs of the window openings survive in several places, particularly in the two western windows of the south elevation, where the internal moulding, with its hollow chamfer, appears to be largely intact. From the floor of St Mary's Chapel it is also possible to see the positions of the saddle-bars and the glazing groove on the surviving jamb at the east side of the central south window - the glazing here has been inserted outside the saddles, there having been five saddle

⁵⁵ These have been described elsewhere as being of concrete - an inference perhaps resulting from their exceptionally austere form.

bars between the middle transom and the springing of the upper tracery.

- 2.1.3.3.1.4 The roof and floor of the building are entirely renewed, the roof being a plain utilitarian low-pitched structure, typical of the mid-twentieth century, with box-trusses at the bay divisions, with central ridge and a single purlin on each side.
- 2.1.3.3.1.5 The eastern bay of the chapel is now occupied by raised wooden staging, accessed by three steps at each end, which is at or near the height of the medieval floor of the east end.
- 2.1.3.3.2 The west elevation
- 2.1.3.3.2.1 The centre of the lower part of the west wall is occupied by a modern (1959-66) opening with a depressed arch, giving access to the stair from the north-west corner of the cloister; and by two square-headed openings (of eighteenth century character but modern workmanship) with joggled lintels flanking it - the southern containing a shallow cupboard in the thickness of the wall; the northern containing a serving hatch from the kitchen (which has been formed in the northern bay of the vaulted narthex). The central opening is of a fairly dark bed of Bath stone, the outer openings of a paler bed, with much greater calcite veining.
- 2.1.3.3.2.2 Of the original fabric above the sill-level string-course, much of the upper part and almost the whole of the area within and adjacent to the relieving arch has been limewashed or retains to some degree its ?original lime plaster. Of the remainder the bulk of the fabric consists of Caerbwdi rubble, but there is a clear band of the strongly-bedded yellow limestone at or a little above the level of the roof of the upper northern narthex chamber, and apparently having approximately the same slope as the roof of that chamber. If this is the case it would prove that the narthex block was erected with the body of the chapel-block, a conclusion supported by the distribution of the putlog holes. The same type of stone tends to occur towards the northern margin of the west wall - close to the position of the stair turret, which will be noted below as containing more of this block than is general in the fabric [see Section].
- 2.1.3.3.2.3 Putlog holes are difficult to identify, given the heavy repointing of the exposed stonework in grey Portland cement, and the extent of the limewash and plaster - so that the only major features visible in the wall are the relieving arch and the opening into the northern first floor chamber.

- 2.1.3.3.2.4 The latter is centred within the elevation of St Mary's Chapel, its sill resting directly on the apex stones of the relieving arch beneath. Unlike the interior form of this opening in the narthex chamber, here the aperture has a flat lintel, and it would appear that the bulk of the jamb stones have been renewed. The whole surround has been limewashed.
- 2.1.3.3.2.5 Within the chapel the base of the relieving arch begins approximately 40 cm up from the top of the string-course, and runs closer to the north wall than the south. The southern extent of this arch - descending considerably further - can be seen on the south wall of the narthex stair.
- 2.1.3.3.3 The North Elevation
- 2.1.3.3.3.1 The western bays
- 2.1.3.3.3.1.1 Both sides of the chapel have windows in their three western bays with the easternmost bay rendered blind by other features, in this case the founder's tomb. In addition the northern elevation contains, in the second bay from the west, the (renewed) doorway to the vice leading down to the western garden of the College, and thence to the domestic buildings to the north.
- 2.1.3.3.3.1.2 Between the second and third bays from the west end there are the remains of a relatively well-preserved consecration cross. The remainder of the wall has been re-rendered below the sill-level string-course as part of the 1960's renovation of the chapel; above this the wall consists of plain rubble masonry.
- 2.1.3.3.3.2 North wall - east bay
- 2.1.3.3.3.2.1 There are traces of the putlog fillers visible on the eastern margin of this wall, showing certainly four, and probably five lifts.

2.1.3.3.3.3 The scar of the tomb of Bishop Houghton

- 2.1.3.3.3.3.1 As part of the work undertaken in the 1959/66 renovation of the building, a new door forming a fire-escape was cut through the north wall, at or near the centre of the recess which appears to have once contained a very significant monument. The cutting of this doorway has removed original fabric from the wall to a width of 1.70 m., and a height of 2.30 m.; while on either side of the base of the doorway a projecting plinth 0.63 m. high has been built out to the original thickness of the wall.
- 2.1.3.3.3.3.2 Immediately above the top of the doorway can be seen the 0.33 m. high course of blocks which represents the inner face of the lowest of the weathering courses on the exterior; and above this, a further 1.30 m. up, is the soffit of the lower arch which frames the 'indent' of the canopy over the monument. A second relieving arch above this rises off the springing of a shallower arch, the soffit of which bears the impress of large ashlar blocks which represent the inner ends of the decorative structural members of the tomb canopy.
- 2.1.3.3.3.3.3 In the jambs of the opening the inner faces become vertical, and on either side, at approximately 1.26-1.30 m. above the existing floor level, there are traces of a shallow course composed of fine yellow limestone, which could represent either a string course, or (more, likely since it does not extend to the edges of the recess) the level at which the effigy slab was sited. To represent fragments of a single slab this stone would have to have been approximately 3.30 m. long - suggesting an effigy slab commensurate with the magnificence of the tomb.⁵⁶ Its upper surface coincides with the top of a rough rubble off-set which exists at the eastern side of the opening, and it seems likely that this represents part of the surface upon which the effigy or tomb-slab originally rested. Such a height would imply that the original floor level at this end must have been higher by approximately two to three steps - a conclusion borne out by the height of the base of the door to the sacristy chamber in the south wall of this bay.
- 2.1.3.3.3.3.4 Above the arched recess (which runs to a depth of over 80 cm from the existing plastered wall face of the bay at the east end) the wall-face of the bay is recessed by up to 15 cm over a considerable height, and the general form of the recessing suggests that this represents the voids left by the deliberate removal of canopy and pinnacle work from a monument - implying that this was a tomb of some magnificence. While it is possible

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If the monument had been a brass these fragments of the slab would almost certainly have been of Purbeck marble, rather than yellow oolite.

that some of the damage to this wall is the result of natural decay, the symmetry of the recessing and its clear spatial relationship with the arch below indicates that it represents the withdrawal of a very considerable area of decorated stonework; while the form of the arch below, and the general similarity of the mortars with the original construction mortars, strongly suggests that this feature was built into the architecture during its erection - and that it must therefore represent the tomb of the founder.

- 2.1.3.3.3.5 To either side of the opening vertical buttresses appear to have risen for two metres above the springing of the arch, above which the canopy stones stepped in twice, before rising a further two metres or so to a tall central finial. This would indicate a monument of approximately 6 metres in height, and probably 4 metres wide.
- 2.1.3.3.3.6 There would appear to have been a projecting central section immediately above the apex of the arch, since there is a shallow rectangular projection from the rubble wall-surface, symmetrical to the apex of the arch and to the apex finial above.
- 2.1.3.3.3.7 There would appear to have been side panels below the springing, extending for at least a further 50 cm on each side, since the stonework here is cut back in the same way as is exhibited in the canopy-work. This indicates that apart from the tomb of Bishop Gower in the pulpitum, this must have been the most magnificent tomb in the cathedral complex.
- 2.1.3.3.3.8 The rich complexity of this monument implies that the decorative scheme of the building must have been on a commensurate scale, and that the plain rubble walling which the interior presently exhibits is deeply misleading. The Tomkyn Manuscript mentions '*paintings of the windows of his college, & about his tomb*'.
- 2.1.3.3.3.9 Prior to any interventions in the fabric - including rendering - the impression of this monument needs to be recorded in detail.

2.1.3.3.4 The East Elevation

- 2.1.3.3.4.1 This is almost completely obscured by modern plaster over the dado (against which furniture was been stored at the time of this inspection); by the insertion of the twentieth century east window, and by two sets of curtains at the north and south margin.

2.1.3.3.5 The South Elevation

As on the north elevation only the three western bays are fenestrated, the exterior of the eastern bay forming the north wall of the sacristy block is plain except for the doorway into the lower floor of the latter, and the scar left by the removal of an ashlar feature (probably a piscina) immediately to the east of the doorway.

2.1.3.3.5.1 East bay of the south wall

2.1.3.3.5.1.1 The upper half of this wall is limewashed, with some traces of plaster remaining at high level on the eastern margin; the lower part of the wall consisting of Caerbwddi rubble (up to 90%), some St Non's sandstone (the largest block of the latter forming the lintel/relieving block over the apex of the sacristy door).

2.1.3.3.5.1.2 There are signs of putlog holes in the eastern margin of this wall - though they are less easy to identify than those on the north side of this bay - and at least three infilled putlog holes on the vertical line extending from the end of the renewed string-course immediately to the west of the sacristy door.

2.1.3.3.5.2 The 'sacristy' door

2.1.3.3.5.2.1 There appear to be the remains of two medieval features in this wall: the largest being the western jamb of the door into the 'sacristy', moulded on its northern face, and rebated on its southern in order to receive the door. The base of the jamb and the plain block beneath it are original, and give the floor height, corresponding to the top of the extant wooden staging, and to the top of the rebuilt projections on either side of the modern north door, which appear to perpetuate the ground level of the fourteenth century chapel at this end. All the remaining jamb stones on this side of the sacristy doorway are original, and the lowest block above the springing of the arch also survives.

2.1.3.3.5.2.2 It would appear from the form of the rubble walling above this that the

opening for the door was approximately 85 cm wide, with a steeply arched head, rising perhaps as much as 65-70 cm above the springing. The springing coincides with the line of the string-course, indicating a degree of architectural unity which suggests that this feature is an original opening, and implying the intended existence of the sacristy tower (or, at least, a two storey east cloister walk) from the beginning.

- 2.1.3.3.5.2.3 The door has been blocked with rough rubble masonry set in a white lime mortar with large coloured aggregate - some apparently water-worn gravel - which is similar to, but distinct from the fabric of the medieval wall-core, the latter containing generally angular aggregate, and with plentiful flecks of white unmixed lime. This masonry infill has been repointed (like much of the rest of the fabric here) with grey Portland cement, which obscures much of the original jointing material.

- 2.1.3.3.5.3 The lost ?piscina

- 2.1.3.3.5.3.1 However, to the east of the infilled area there is a patch of rough rubble walling in original mortar, approximately 80 cm wide, and terminating to the east against the extant vertical face of the fabric which lies 60 cm west of the east end. This area of exposed original wall-core shows the clear impress of large (presumably) ashlar blocks, at the base of which there survives an ashlar stone from which projects an attached diagonal pilaster rising from a simply moulded base. The available area between this pilaster and the presumed position of the eastern jamb of the sacristy door is only approximately 110 cm, and this seems too narrow to have accommodated a sedilia of any size or magnificence commensurate with the monument opposite it, and it seems probable that this represents the position of a richly decorated piscina - do any parallels for such a structure of this period exist?

- 2.1.3.3.5.3.2 The imprints of the lost ashlar blocks suggest that the back of this structure was flat up to 110 cm from the existing floor level, but that above this the backs of the ashlar blocks were canted so as to run deeper the further they went to the west - this seems to suggest the curving or recessed back of a feature whose lower 1 metre was flush with the wall. This disturbance of the rubble fabric of the wall appears to terminate approximately 15 cm above the upper edge of the line of the string-course - perhaps suggesting that its canopy or tabernacle-work projected through the string. At its eastern margin, against the western edge of the modern string-course, there is a suggestion that a finial could have been withdrawn adjacent to the end of the string.

2.1.3.3.6 The internal consecration crosses

- 2.1.3.3.6.1 Midway down the Chapel on either side, and positioned just below the string-course under the window sills, two areas of medieval plaster were left exposed in 1966 (surrounded by the mid-twentieth century wall-finish), where traces of the original consecration crosses were found to survive. It is evident from their distribution on the exterior that the consecration crosses on the north and south walls were positioned beneath the buttresses, and clearly these two internal crosses correspond to such a position for the interior set. Further consecration crosses on the north and south walls, therefore, would have existed beneath the positions of the two western buttresses, and traces of these may conceivably still survive beneath the 1959-66 plaster. Further consecration crosses must have been intended at the positions of the eastern buttresses, though the northern of these may have coincided with the western tabernacle-work of the monument to Bishop Houghton, which may well have extended to this position - though a cross could have occupied the corresponding position on the south elevation.
- 2.1.3.3.6.2 On the south wall the extant patch of medieval plaster is severely decayed, but there is a trace of the imprint of a circular feature approximately 47-49 cm in diameter, in a state of extreme decay but most readily visible on its dexter edge and at lower sinister. This would have had its upper margin approximately 4 cm below the base of the string-course - a little higher than the cross on the north wall. Virtually no other detail is visible, except possibly for the dexter edge of the lower arm of the maltese cross. This trace has very much the same appearance as that on the west wall of the exterior of the chapel, and suggests that it has been exposed for a considerable period and has suffered extensive weathering..
- 2.1.3.3.6.3 The cross on the north wall, however, is by far the best preserved of the entire sequence, retaining considerable traces of original pigment, together with much of the setting-out, and what would appear to be the centre impress of the dividers with which it was drawn. It probably owes its good state of preservation to the fact that it has been plastered over - this thin coat of plaster having been partly removed to expose the upper sinister third, together with three sections of the narrow outer frame. Clearly more of the cross survives beneath this plaster, and it is possible that traces of the painted decoration outside the boundary of the cross may also be present. The setting-out consists of a vertical and horizontal incised line intersecting at the centre at 90° and running out to (and, in the case of the

upper one, intersecting) the 2.4 cm wide frame bounded by further incised lines. This appears to be different to the technique used on the exterior, where the whole outline of the maltese cross has been drawn with the dividers - here the outlines of the arms of the cross have been painted in narrow black lines, and there is only a very slight differentiation now visible between the pale buff colour within these arms and the general background colour between them. The 2.4 cm wide border is also painted black.

2.1.3.4 The Narthex

2.1.3.4.1 The Stairway

- 2.1.3.4.1.1 The western bay of the Chapel block is occupied on its ground and first floors by a wide stair running northwards from the north-west bay of the cloister and providing a grand processional access to and from the first floor chapel. The door to the chapel is sited at the centre of its west wall, leaving a bay and a half of the first floor level of the narthex to the north, which has now been partitioned off to form a kitchen, but which may have been a dead space north of the stair in the middle ages. The medieval vaulting over the stairs is missing and has not been renewed by W.D. Carøe, the present roof consisting of flat cast concrete slabs. The springers largely survive, however, and in the west side of the north bay (within the modern kitchen) is a well preserved wall-boss from the ridge-rib. The form of the vaulting appears to have been the same as that in the cloister.
- 2.1.3.4.1.2 The stair is lit by a renewed three light window opposite the door to the chapel; the modern kitchen is lit by a trefoil headed lancet in its north wall, of similar design to those in the tower.
- 2.1.3.4.1.3 The stairs themselves are largely renewed. Documentary evidence shows that access to the chapel was difficult prior to the 1920s work by W.D. Carøe, and the stair must long have lain derelict. It seems likely that the usable slabs forming the treads were robbed out, and by his own testimony W.D. Carøe found only one small fragment still in situ (immediately to the north of the attached shaft at the western margin of the base of the stairs).
- 2.1.3.4.1.4 On the east wall the line of the relieving arch which is visible on the interior of the west wall of the chapel can be seen running down to the south. The position of the stair conditions the form of the vault in the undercroft, lowering the western bay slightly.
- 2.1.3.4.1.5 Above the stair, and reached by a vice at the north-east of the narthex bay, are two chambers, the southern within the body of the tower.

2.1.3.4.2 The Kitchen at the northern end of the narthex stairs

2.1.3.4.2.1 This chamber has been formed by the insertion of a wall at the southern margin of the northern bay of the narthex at the head of the stair. Its internal walls are covered with modern plaster, but it retains well-preserved traces of the vaulting springers and wall-ribs, including two original bosses at the junction with the ridge ribs on the west and northern walls - that on the west wall being carved with an inverted human figure. In the north wall there is a single light window with a well preserved cusped head, similar to that in the southern first floor chamber above.

2.1.3.4.2.2 A new opening has been cut through the east wall, communicating with the chapel, and presently functioning as a serving hatch.

2.1.3.4.2.3 On the east wall, the southern end of the vaulting has a renewed Caerbwdi stone corbel; the springer, southern arch of the wall-rib, and the apex stone have been renewed in a pale limestone (by analogy with the interior work of this date, in Bath stone).

2.1.3.4.2.4 The vaulting elsewhere in this chamber is well preserved and should be photographed - particularly the carved boss on the west wall.

2.1.3.4.3 Chambers above the western narthex

2.1.3.4.3.1 The northern chamber

2.1.3.4.3.1.1 This is a rectangular chamber, lit by windows in the north and west walls, with an arched opening in the east wall which affords a view into the Chapel of St Mary, its sill approximately fifteen feet from the floor of the latter. The room is approached from the spiral stair at the north west corner of the Chapel, where a doorway with a flat (or perhaps very slightly arched) lintel still largely survives; and access to the southern room beyond is provided by a doorway with a two-centred arch, at the eastern margin of the south wall. Near the northern end of the west wall there is a fireplace with simply moulded jambs and a depressed arched opening.

2.1.3.4.3.1.2 Clearly, as with the rest of the Chapel complex this building has been unroofed for a considerable time, and many of its architectural features are

severely weathered as a result. In particular the door from the stair at the north-west of the chamber has its lintel stone and the two blocks of the southern jamb within the chamber very severely eroded and pitted - while the east-facing jambs of this opening within the stair, on the more protected northern side, still retain the form of the moulding.

- 2.1.3.4.3.1.3 The north-facing window has a concrete lintel which extends for the full width of the chamber, and the upper two courses of the jamb on the east, and the upper six on the west have been renewed on the interior; while on the exterior the eastern jamb is renewed to a height of four courses. The sill of this window has also been renewed, but beneath this sill and towards the outer margins of the wall considerable quantities of white lime plaster (some of which could well be original) still survive.
- 2.1.3.4.3.1.4 The west wall also retains approximately 40-50% of its plaster coating - with apparently three or more layers surviving in places. The window in this wall appears to be largely unrestored apart from the rebuilding of the sill in cement; and the adjacent fireplace to the north also appears to retain its original fabric. There are no indications that this latter is anything other than an original feature - the relationship of the north jamb of the window and the south jamb of the fireplace suggests that the ashlar were laid together.
- 2.1.3.4.3.1.5 On the east wall the doorway to the stair appears to retain all of its original fabric - though, as noted earlier, much of this is in a state of severe decay. The present wooden door-frame placed against the rebate facing into the chamber probably perpetuates the original position of the door, since the jambs facing onto the stair are moulded and could not have accommodated door furniture.
- 2.1.3.4.3.1.6 The fabric here, as on the other walls, consists largely of dark purple Caerbwddi stone rubble, always laid flat, though scarcely coursed, with occasional pieces of the yellowish-green strongly bedded limestone - the latter being particularly apparent in the quoins. As noted before, where ashlar are used these tend to be of a paler variety of Caerfai/Caerbwddi stone - though it is notable that the very decayed stones around the door to the stair, on the interior jambs, are of the darker purple colouration. On the east elevation the stonework has been very heavily repointed in cement which is grey and quite hard, but which can be readily marked with a metal tool.
- 2.1.3.4.3.1.7 The opening to St Mary's Chapel retains both its arch stones and the course below these on each side, though the inner parts of the splay of the jambs below this on both sides have been rebuilt - the original stones of the jambs on the widest parts of the splay within the chamber still surviving. The jambs of this opening are of a mixed geology: the arch-head

stones of Caerbwdi, together with the block below these on the south, while that in this position to the north is of a greyish-green coloured sandstone (?or lias), while of the remaining jamb-stones six are of the laminated yellow-green limestone, the two middle ones on the north appear to be St Non's sandstone of a pale greenish-grey; while the remaining jamb stone on the south is of the greyer variety of Caerfai.

- 2.1.3.4.3.1.8 The sill of this opening has been remade in cement; and immediately beneath this there is a large relieving arch, which is best seen on the west elevation of St Mary's Chapel.
- 2.1.3.4.3.1.9 The south wall of this chamber has been partly repointed (using the same Portland cement as the east wall) over the lower and central-west areas - but again much early plaster survives here, particularly in the angle with the west wall, near the top of the wall, and adjacent to the doorway opening into the south chamber. Once again the fabric largely consists of dark purple Caerbwdi stone, the quoins of the doorway being slightly lighter in colour than the rubble fabric, but not significantly so apart from the surviving (sinister) arch stone of the head. There are occasional blocks of the yellow-green strongly bedded limestone.⁵⁷ The eastern arch-stone of this doorway has been renewed in cement, in what appears from the air-pockets to be a cast block; this had had a surface coating of cement or plaster skim, which has now largely dropped off. The jambs of the doorway are moulded on its north-facing side, with a simple chamfer; and rebated on its southern side to receive a door. Near the base of the eastern jamb there is a wooden plug driven into the joint to receive a pintle; and behind a modern pipe the joint at the springing of the arch-head appears to retain a stub of iron from the upper pintle. On the western side there is a recess cut to accommodate the latch of the lock.
- 2.1.3.4.3.1.10 The floor of this chamber consists of concrete, its surface still retaining float-marks; with a concrete step up to the threshold of the southern doorway, and the northern doorway's threshold at the same level as the landing of the newel stair. At the base of the south wall there is a squared concrete projection, possibly covering an RSJ to support the partition wall, though this ends against the western end of the step in front of the south door.
- 2.1.3.4.3.1.11 With its southern edge at 60 cm out from the face of the south wall there is a hatch closed with two hinged leaves, immediately above which is an

⁵⁷ This has occasionally been referred to in previous notes as being igneous, but a face-bedded block occurs in this wall, and the strongly laminated stone looks more like a mud-stone. It is certainly a lot too soft to be igneous in origin.

I-beam RSJ running east west and cemented into the walls (on the east, immediately over the apex of the arched opening into St Mary's Chapel), on which is mounted a pulley for drawing materials up into the chamber for storage. To the north of this is a second I-beam RSJ running parallel to the first, which (through the agency of a wooden beam) supports the north-south joists of the gently sloping roof, which rests at its southern end on a timber wall plate over the concrete lintel, and at its northern end on a timber wall-plate bolted to the north face of the south wall.

2.1.3.4.3.1.12 The medieval roof must have been of the same general form, but appears to have had a slightly steeper pitch, judging by the positions of the four extant corbel-blocks which project from the east and west walls opposite each other, two on each side. The soffits of the existing twentieth century joists lie 14 cm. above the southern of the corbels on the west wall, but 25 cm. above the northern corbel - indicating that over the 2 metre gap between their centres, the original roof had a 10 cm. greater slope, and that the original roof would have had an extra run of approximately 1 foot overall. These corbels presumably supported a wall-plate, on which the east-west cross-beams supporting the roof rested.

2.1.3.4.3.2 The southern narthex chamber

2.1.3.4.3.2.1 This is the lowest small, square chamber within the body of the tower, its concrete floor lying two steps above the level of the floor in the northern chamber, but apparently with its original floor placed somewhat higher yet. This presumption is based upon the existence of two in situ projecting corbels (the top of the eastern one at 31 cm. above the existing floor-level), and two areas of disturbed walling which appear to represent positions from which similar corbels may have been withdrawn - it seems likely that two other such positions existed which have not been identified.

2.1.3.4.3.2.2 The existing architectural features consist of the southern arch of the doorway from the northern room on the north wall, a single light window on the south wall, and below the latter a large relieving arch.

2.1.3.4.3.2.3 The head of the doorway on this side is considerably plainer than that facing into the northern room, suggesting that this was the minor chamber of the two. The head of the doorway on this side consists solely of a pair of large pitched blocks forming a triangular-headed opening, and the jamb is quite plain. Much of this fabric is surrounded by grey Portland cement, which might indicate a virtual total rebuild of the door on this side, however, the simplicity of the original door-head is demonstrated by the fact that the

sinister (eastern) 'arch' stone is bonded in the white lime mortar of the original build.

- 2.1.3.4.3.2.4 The south-facing window appears to be of similar simple form, again with pitched stones forming the head (though this area is largely covered with plaster, and it may be that the form is created by stucco, rather than stonework in places). This opening has a flat sill, which, although skimmed over with cement, has apparently always been of this form, since the relieving arch lies immediately beneath it. The exterior of the window has a single-cusped head (almost certainly renewed), similar to that of the 'Kitchen' at the head of the narthex stairs.
- 2.1.3.4.3.2.5 The walls consist entirely of purple Caerbwdi stone rubble, with very occasional yellowish heavily bedded limestone; and here the survivals of plaster are limited to the upper parts of the east wall, the north-east corner, and the eastern margin of the south wall - with a further small area in the south-west corner.
- 2.1.3.4.3.2.6 The apex stone of the relieving arch appears to have been renewed, together with the jamb stone of the window (at the base of the western jamb) immediately above it. Beneath the relieving arch the wall thickness is reduced by 22 cm. Parts of this arch on the eastern side appear to have been renewed.
- 2.1.3.4.3.2.7 Two lifts of putlog holes are indicated in this chamber, and it seems likely that the lower set on the east (certainly) and west wall (probably) were subsequently employed for the housing of the floor joists - with the projecting stone corbels probably sited either on the same lift line or in the vacated holes themselves. The upper set are approximately 160 cm above this height, and appear to be staggered so that the north-south beams rested on the tops of the east-west beams. The holes are placed adjacent to the corners of the room, so that the beams would have run along the interior wall-faces in both directions. At this upper height (which corresponds to the springing of the southern arch of the door between the two chambers) the set of holes is almost complete, but the eastern hole on the south wall is not visible (perhaps being covered with early plaster in this position) - but since this position would also have intersected the head of the doorway on the north wall, it is possible that the beam ran on the outside face of the tower (at this height, inside St Mary's Chapel).
- 2.1.3.4.3.2.8 The ceiling of this chamber consists of shuttered concrete, with an access

hatch in the south-east corner.⁵⁸ The concrete appears to contain iron reinforcements, since above the west wall an iron spike has broken out the surface of the ceiling adjacent to the wall, and to the north of this position a second spike is in the process of doing the same.

2.1.3.4.4 North-west corner stair turret

2.1.3.4.4.1 The medieval fabric of the interior of the turret appears to be relatively complete to its apex - indeed the stonework above the door to the roof of St Mary's Chapel is as well preserved as any part of the turret. Five steps rise above that beneath the threshold of this uppermost door, and the fabric where the stair terminates against a plain wall retains much early plaster. The steps of the newel stair have been extensively repaired - in fact renewed to the height of the middle doorway which give access to the narthex roof.⁵⁹ There appears to be a much greater use of the strongly-bedded yellow-green limestone in the fabric of the stair, with considerable quantities of this in use around the door to the narthex chambers and below. This may simply reflect the ease of working this block to a circular form, as against using the long flat slabs of Caerbwdi, which are almost certainly less tractable. Where the Caerbwdi is used in the fabric of the internal wall of the stair it is generally in much shorter block-lengths than are generally found elsewhere in the rubble walling of the Chapel complex.⁶⁰

2.1.3.4.4.2 While all of the steps from the passageway to the narthex roof door have been renewed in cast concrete, some of the lower ones may merely have

⁵⁸ This hatch could not be opened at this time, and so inspection of the chamber above was not possible.

⁵⁹ This door could not be opened, and the exterior of the north-western stair turret was examined only from ground level.

⁶⁰ This suggests that there was a clear hierarchy in stone use: good quality imported yellow limestone for the detailed carving of window tracery, vaulting springers, bosses and ribs; a superior bed of lilac Caerfai for the neat exterior dressings and the wall ribs and attached shafts of the cloister; the fairly tractable yellow mudstone for positions where the stone had to be shaped, but where it would not show beneath a coating of plaster - such as relieving arches or the interior of the vice; and the rougher purple Caerbwdi and more occasionally St Nons sandstone and yellow mudstone off-cuts for rubble work.

been capped, since the lowest seven stones of the newel itself are of Caerfai/Caerbwdi.

2.1.3.4.5 The passageway at the base of narthex tower stair

2.1.3.4.5.1 This is reached from St Mary's Chapel via the door in the north wall which also gives access to the broad stair leading down on the north side of the Chapel. The passageway connects the Chapel to the narthex stair, and was originally closed halfway along with a door.

2.1.3.4.5.2 The existing passage floor is of concrete, reached at the eastern end from the landing at the head of the stair down to the college by a short flight of five steps; and it seems almost certain that it is at or very near the height of the medieval floor, since not only is the base of the narthex stair-turret at this position, but the base of the jamb of the doorway on the north side of the passage is also at this height.

2.1.3.4.5.3 It would appear that the south wall of the passage may have been interfered with, since there is no corresponding jamb on this side, nor any sign of the pintles for the door which was clearly originally positioned here. The northern jamb has a simple flat chamfer on its eastern side, and a rebated western side against which the door closed, and there are recesses for four (successive or contemporary?) latching-points on the second stone down from the passage roof beginning at 0.97m. and ending at 1.33 m. above the present floor level.

2.2 The Cloisters

2.2.1 The 'Sacristy Tower' over the north-east corner

2.2.1.1 Introduction - the surviving structure, its abutments and foundations

2.2.1.1.1 The north-eastern corner of the cloisters supported a two-storeyed superstructure of rectangular plan corresponding to the north-east corner bay and the bay of the east walk immediately south of it. The stubs of both the west and south walls still survive, each having a toothed vertical joint extending outwards to approximately one metre from the wall-face of St Mary's Chapel and from the outer wall of the east cloister range. There is no sign of the springing of a relieving arch to carry these walls across the vaulting of the cloister below, though some such arrangement must have existed - especially given the regular deployment of such arches elsewhere in the architecture of St Mary's Chapel.⁶¹

2.2.1.1.2 Since the north-east angle of the cloister had its bay divisions aligned on the internal angle of the pentice walls, the wall on the west face of the structure is not centred above the bay division, but is placed somewhat to the west. The southern wall of the 'sacristy tower' is positioned precisely above the second attached shaft south of the east walk of the cloister, and is aligned centrally on the northern of the footings for massive buttresses which project from the inner pentice walk. This footing presumably supported a massive buttress which rose against the southern end of the west elevation of the 'sacristy tower'.

2.2.1.1.3 As the footing of the eastern pentice walk exists at present there appears to be a rubble 'extension' to the west face of the northern buttress,

⁶¹ The likely form of such supports is suggested by the surviving arch in the roof of the narthex stairs to St Mary's Chapel - supporting the north side of the tower. Here an arch with a relatively shallow, almost triangular profile, built of the yellow-green limestone, rises from the side walls a little above the springer blocks of the vaulting - it may be that seatings for such arches prove to exist above the cloister vault-springers.

suggesting the possibility of a later strengthening of this structure - since this 'extension' abuts the ashlar face of the well finished western elevation. There does not appear to have been any corresponding strengthening of the buttress belonging to the next bay of the pentice walk to the south (aligned on the sacristy tower's western wall), since there is no apparent enlarging of the footings at this point.

- 2.2.1.1.4 The foundation beneath the inner cloister walls, which (by analogy with the area exposed on the west walk in 1998-9) presumably has its inner face running along the line of the faces of the projecting pentice buttresses on the line of the north walk, returns onto the east pentice walk very slightly to the east of the easternmost of the north walk's buttresses, and the face of the footing in the northern two bays of the east walk (the edge of which appears to be exposed in the grass of the cloister garth) runs back at a considerable angle, diminishing towards the south. In the gap between the last surviving buttresses at the south end of the east walk (in Bay 4 counting from the north) this footing is reduced to the extent that it appears to have a projection of 0.94 m. from the upstanding fabric of the west side of the pentice wall face (as compared with 1.07 m. on the north walk, and 1.02 m. on the west). The line of the apparent wall-edge in the gap between the buttresses in this bay, therefore, could represent the width of the standard footing for the pentice wall, which has been expanded westwards towards the north-east corner in order to provide additional abutment to carry the 'sacristy tower'. Whether this is part of the original construction, or whether this is additional strengthening to the cloister pentice wall footing is unclear, but the rather ad hoc projection suggests the latter. This expansion of the footings means that virtually the whole area between the pair of buttresses at the north-east corner of the cloister garth appears to consist of a masonry footing, probably of two phases - that to the south of the north pentice wall back to within a metre of the east pentice wall all belonging to the construction of the cloister walks, and the remainder possibly being later infill to buttress the upper structure. It is important when this area is worked on during the Cloister project to see this exposed and test whether this is indeed the case.

- 2.2.1.2 The East cloister / 'Sacristy tower' wall (west elevation)

- 2.2.1.2.1 The southern extent of the 'sacristy tower' is marked in its upper storey by a neatly formed Caerfai stone quoin, beneath which is the toothed projection where the wall has been broken through. Evidently the east cloister wall (at least over its eastern elevation) was of two storeys at this point, and it seems likely that it was demolished with the northern part of

the east cloister walk prior to the ruining of the sacristy tower, since an almost vertical projection runs down to the approximate height of the suggested exterior pentice walkway from the College garden.

- 2.2.1.2.2 At this height the southward continuation of the cloister east wall is thicker - the fabric above it presumably belonging to the post-medieval stepped buttress against the north elevation of the north transept's north-west turret. Approximately on the same level as the wall-plate of the suggested pentice, to the south of the cloister door, there is a small corbel - of very much smaller dimensions than those projecting from the east wall of the Chapel block. This is situated approximately on the vertical line below the great beam-socket for the southern beam of the sacristy room's ceiling. How this may have related to the proposed walkway to the north is unclear.
- 2.2.1.2.3 Below this and to the south is a large area of ?medieval plaster, of similar type to that which is found on the head of the reduced doorway in the east elevation of the undercroft - the latter probably being post medieval, since it covers areas of decay and weathering on the soffit of the arch head.
- 2.2.1.2.4 Reference to the east elevation of the rooms of the 'sacristy tower' can be found in the consideration of their internal elevations [see Section ***** below].
- 2.2.1.2.5 The middle floor of the 'sacristy tower' is almost entirely lacking traces of render, though a considerable amount survives on the upper storey.
- 2.2.1.3 The 'sacristy' chamber
- 2.2.1.3.1 The floor of the lower chamber of the 'sacristy tower' appears to have been placed at roughly the same height as the base of the corbels supporting the cloister wall-plate on the north walk, the easternmost of which is positioned against the west face of the west wall of the 'sacristy' (none of these appear to exist on the east cloister wall - though whether because the latter was two-storeyed throughout its length, or because the wall has been largely rebuilt is unclear). The line of the floor is currently defined by modern renewed stonework, but can probably be inferred from the position of the base of the door from the east bay of the first floor chamber into St. Mary's. Of this door only the western jamb and the western half of the head survive on the south elevation of the Chapel, the infill (although deeply weathered) apparently all being modern, and much of the surrounding stonework probably having been replaced. Much of the elevation has modern yellowish cement pointing of the same type as is found in the

toothed joint of the wall scars.

- 2.2.1.3.2 In the north-east corner of this chamber, from approximately the height of this door, for more than a metre above, the angle of the wall has been bridged by ashlar blockwork, whose purpose is at present obscure. It cannot belong to stair, since the position immediately above it is occupied by one of the massive sockets for the floor timber of the upper storey. It seems probable that the almost enclosed area framed by the buttresses of the north-east angle of the inner wall of the pentice formed the position of the stair to the sacristy tower, since there are no signs of scars from a stair in the surviving fabric. No indication of an entrance from the walks to this area has been noted, and it is possible that the first floor chamber was accessible only from the first floor of the Chapel block; even so, a stair would have been necessary to reach the upper chamber.
- 2.2.1.3.3 There is a patch of early plaster still adhering to the wall (apparently with modern pinning) at the apex of the chamber on the centre of the north elevation, the upper edge of which appears to run horizontally and is roughly coincident with the position of the upper chamber's floor joist - suggesting that it was put on when the structure was relatively complete, and is probably original.
- 2.2.1.3.4 On the east elevation of the interior of the first floor room of the sacristy tower there is a window opening, the lower part built up between the jambs, and the area between the present sill and the floor apparently reconstructed. Immediately beneath this, and on the line of the jambs there is a low projection from the nominal floor-height. To the south of the window there is a recess with a projecting demi-octagonal corbel at the base, which it is tempting to suggest could be a piscina [it is identified as such by earlier commentators] for a small chapel [?possibly a chantry?]. Most of the fabric of the wall here consists of relatively small blocks of Caerbwddi stone, and the whole has relatively modern yellowish Portland cement pointing.
- 2.2.1.3.5 The inner arch of the window is of weathered strongly-bedded yellow-green stone, except for the yellow limestone keystone, which appears to be a modern insertion. At the inner edge of these voussoirs there is a moulding which probably corresponds with the back of the window frame. On the exterior elevation the outer face of the arch has been rebuilt in small tile-like voussoirs of St Nons and Caerbwddi sandstone. The lower part of the sill (which appears to be rebuilt on the interior) on the exterior is largely composed of the weathered yellow-green stone, but contains a putlog hole which corresponds with the height of the putlogs on the east elevation of St Mary's Chapel to the north, and which would appear to be original. It is possible that this putlog was created at a time when the original putlog

system was being pressed into use for a general refurbishment of the building, and its existence here does not necessarily imply a contemporary date for the infilling below the sill-line.

- 2.2.1.3.6 The strongly-bedded yellow-green stone of which this infill is composed appears to be the same as that forming the moulded voussoirs of the window opening, and is also probably the same as that which forms the voussoirs of the relieving arch over the door from the churchyard outside the north transept to the north-east corner of the cloister. Why this material might have been concentrated in the area beneath the sill in the original construction is obscure, and this might seem to suggest that it is a later feature. The same material is also found in the jambs of the sacristy's eastern window, on the internal elevation, and in the jamb of the 'piscina' recess to the south - indicating what may be an extensive use for it in the original fabric. The distribution of this stone might prove significant for identifying phases of construction or repair in the cloister complex, but its distribution elsewhere suggests that it is original to the primary phase.⁶²
- 2.2.1.3.7 There are some survivals of the moulding of the interior jamb of the window lower down - very weathered on the south, but the lower central block on the north appears to retain some detail.
- 2.2.1.4 The second storey room
- 2.2.1.4.1 At approximately the height of the apex of this window on the eastern elevation are two massive timber slots, which pass through the wall to the exterior, and in the northern instance this opening is partly blocked - again with the weathered yellowish-green stone. There appears to be no sign of the western end of the northern timber against the surviving stub of walling projecting from St Mary's Chapel, suggesting that much of this face may be renewed. There are signs of twentieth century rebuilding slightly to the north of the apex of the window at this height, which could conceivably represent the position of a third beam - though siting this directly over an

⁶² The yellow stone, which weathers in irregular horizontal bands is found not only in the fabric of the first floor of the sacristy, but also forms the voussoirs of the doorway through the western buttress on the north-west angle of the north transept - which is known to date from the turn of the eighteenth century. However, its distribution in the narthex vice and the upper narthex chambers suggests that at least in these contexts it is original to the fourteenth century [see Section *****].

opening would not be sound building practice at any period.⁶³

2.2.1.4.2 The upper chamber of the sacristy tower retains considerable amounts of early plaster, with a much paler finish in the north-eastern angle of the room, and apparently extending to the original floor level on the north elevation. The fact that this material rises to within approximately half a metre of the rebuilt height of St Mary's Chapel, suggests that the structure may have been robbed of its full height, and there is certainly little indication of the position of the ceiling structure, nor is there any sign of the true apex of the walls. It would appear that the top half metre or so of the north wall is a twentieth century reconstruction, and the wall on the east side has been finished off level and capped.

2.2.1.4.3 As in the middle storey, the top storey is lit by a window facing eastwards, this one being much smaller than the one below, with a flattened interior arch, and probably a single-cusped light on the exterior - though the arch stone is so heavily weathered as to make this impossible to identify from the ground.

2.2.1.4.4 On the eastern (exterior) elevation the southern edge of the wall of this upper storey ends with a finely worked ashlar quoin, which runs down to just above the level of the floor-joists, and from this point downwards is represented by a broken toothed-joint running vertically to the height of the sill of the north transept window. The upper 1.5 metres (approx.) of this is free-standing, but below this is abutted by the stepped buttress running northwards from the north-west corner of the north transept. This buttress stands upon the earlier fabric belonging to the cloister, which terminates with a horizontal top and is off-set by approximately 30 cm.

2.2.2 The Cloister Alleys

2.2.2.1 The East Cloister walk

2.2.2.1.1 Only four bays of the east cloister walk can be certainly identified, though the width of the fifth bay, at 2.64 m. between the centre of the southernmost

⁶³ See the engravings by Le Keux and Deeble, who both show a series of six beam slots on the east wall here. See Section *** .4.9.]

surviving attached shaft and the corner of the north transept, would match the 2.54 m. width between the centres of the attached shafts of Bay 4 quite adequately. No sign of the wall of the southernmost bay [Bay 5] was encountered during excavations against the western buttress of the north-west angle of the transept in 1998-9.

- 2.2.2.1.2 The three northern bays are relatively complete, retaining their wall-ribs. Bay 4 has lost its wall-rib from near the apex on the north side, through to the springer; while the springer on the southern edge of Bay 4 implies the existence of the wall-rib of Bay 5 to the south of it. It is evident from the distribution of the early plaster that the wall here has been severely disrupted, and it seems likely that even if no fifth bay were actually built, its position on the east wall of the walk was nonetheless laid out.
- 2.2.2.1.3 It is possible that an initial attempt to buttress the north transept was made prior to the creation of the present northern buttress, in that there appears to be a slight difference between the masonry running up on a diagonal line from near the springer of the third/fourth Bay south, to approximately three metres down from the apex of the present buttress. Towards the upper dexter margin of this a putlog hole survives within the wall.
- 2.2.2.1.4 Despite the existence of plentiful traces of what appears to be early plaster in the three southern surviving bays of the east walk, there is no sign whatsoever of any surviving consecration crosses, and it seems certain from their distribution on St Mary's Chapel that these relate solely to the consecration of the Chapel block, rather than to the whole cloister. This would add further weight to the suggestion that St Mary's was the primary construction and that the cloisters were constructed subsequently [a conclusion for which documentary evidence also exists].
- 2.2.2.1.5 Most of the northern bay of the east walk is occupied by the doorway leading to the churchyard outside the north transept, which must have been a regular thoroughfare for the members of the College of the Vicars Choral coming down from their residences towards Quickwell. The coursing of the jamb of the doorway largely corresponds to the coursing of the southern attached column of Bay 1/ 2 - indicating that they are contemporary in construction. The springer at the north-east corner of Bay 1 also indicates the existence of a doorway here from the first. The face of the springer appears to have a dowel hole cut in it, perhaps in order to accommodate a metal reinforcement in the stone immediately above the springer.⁶⁴ It is possible that metal reinforcements were responsible for the

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When the construction/inspection scaffolding is erected the remaining springers should be examined for similar traces.

breaking-out of large areas of stone in the window tracery of St Mary's Chapel, at tracery springing level (there is a recess in the face of the jamb on the west side of the west window at transom height, which suggests a 'keel' on this block).

2.2.2.2 The West Cloister walk

2.2.2.2.1 Unlike the single storey pentice of the north walk, the pentice wall of the west walk has alternating large and small buttresses in a similar disposition to the remaining sector of the east walk. This configuration suggests that the west walk of the cloister may have been of two storeys, and that the additional buttressing is designed to support this taller structure. It would appear from the evidence above the entry arch to the narthex that the first cloister, however, was a single storey structure, where it met the south face of St Mary's tower, and that (perhaps only) after the collapse of the vaulting was a second storey constructed.

2.2.2.2.2 The evidence for this later configuration of the cloister consists of the northern jamb of a first floor doorway, whose base is at the level of the base of the springer of the vaulted cloister. There is a recess in the inner angle of the jamb for a wooden frame for a door, and the northern jamb splays somewhat northwards as it passes through to the exterior of the wall. At the head of this opening is an area of rough, disrupted stonework - including some pitched stones at the top, while above this the (probably) later buttress on the south-west corner of the tower rises in a series of stepped set-backs. The wall of the west walk of the cloister to the south of this point has been almost destroyed, and only the bases of the arcade on the inner face of the exterior wall survive for the next four bays.

2.2.2.2.3 The evidence for a higher roof-line associated either with this phase or possibly with an earlier two-storeyed phase, exists in the form of a pitched plaster line, beginning approximately a metre above the fourteenth century string-course, and visible rising from the angle between the south-west tower and its projecting southward buttress at approximately 40° for about a metre. It also extends horizontally along the east face of the southward buttress, running out almost to the quoins at the southern angle of the buttress - it does not, however, appear to pass onto the quoin stone either on this face or on the south elevation of the buttress.

2.2.2.2.4 Near the point at which the rising plaster line dies out on the south face of the tower there is a sequence of voussoirs, apparently aligned centrally above the narthex relieving arch, which appear to relate to a blocked

opening. However, on the interior the only structural feature which appears is an upper relieving arch, and it appears that these few voussoirs represent the apex of this feature.

2.3 The buttressing of the north side of the nave and the east side of the transept

A report on the function and dating of the six great buttresses in the cloister, dated 1 December 1998, was prepared separately as part of the cloister evaluation at a time when the outline proposals for the cloister project included serious modifications to their fabric. As a result of these proposals clear guidelines as to the importance of the historic fabric, both from the point of view of dating and function was required, so that the report concentrated on the likely chronology of the settlement of the building which precipitated their erection. Since the cloister scheme as currently proposed offers much less interference to these parts of the building the following sections from that report have been heavily reduced and edited. For a more detailed consideration of the buttresses and their relationship to the stability of the nave and crossing the reader is referred to the earlier report, copies of which are held in the cathedral archive.

2.3.1 Introduction

2.3.1.1 On the north side of St Davids cathedral a series of massive buttresses have been erected against the nave aisle and transept walls, seemingly intended to suppress movement of the fabric away from the north-western angle of the tower, and the consequent 'buckling' of the north nave clerestory.

2.3.1.2 At the north-west corner of the north transept stepped buttresses run north and west, the former along the line of the eastern cloister wall, the latter extending into the cloister garth. Along the north side of the nave a further four great buttresses of similar design extend northwards on the lines of the nave's eastern four bay divisions; two of these are free-standing, two end against elements of the fourteenth century cloister's west walk. In addition there are three elegant flying buttresses of quite different form and construction which run from the first, third and fourth bays of the nave clerestory down to the depressed internal springers of the north nave aisle bay divisions.

2.3.1.3 The large external buttresses entirely dominate the north side of the nave, rising to the full height of the aisle wall (with two of them overtopping the parapet) and extending over 8 metres into the cloister garth.

- 2.3.1.4 These buttresses are one facet of a long battle to suppress the instability of area around the north-west corner of the crossing - indeed it is possible to present almost the whole structural history of this area from (at least) the early sixteenth century in terms of this battle.
- 2.3.1.5 Large parts of the church from the crossing to the west front have been subject to settlement and instability. The central tower collapsed in 1220; further unspecified damage occurred in the earthquake of 1248; the western nave arcade has a pronounced lean; the clerestory walls are bowed by pressure from the crossing; the tower leans westwards (and until Scott's stabilisation of the structure in the 1860s had been in danger of falling); and the west front was pushed so far over to the west as to need to be partly taken down and rebuilt at the end of the eighteenth century.
- 2.3.1.6 Much of this settlement and movement may stem from the decision to retain the pre-1220 western crossing arch after the collapse of the tower, and its subsequent progressive failure under the increased loading of the 14th and 16th century stages superimposed upon it. The nave and transept buttresses belong to the later part of this sequence, beginning in the 1530s with the renewal of the nave roof in a design which minimises the outward thrust of the roof into the clerestory walls, and the insertion of the delicate flying-buttresses from the clerestory to the interior of the north nave wall.
- 2.3.2 The attempts to stabilise the north nave aisle - the great nave buttresses
- 2.3.2.1 Introduction - Documentary evidence
- 2.3.2.1.1 The dating of the great north aisle buttresses is the most difficult aspect of the structural history of the north-west angle of the crossing to resolve. The documentary evidence is as confusing as it is helpful. Joseph Lord's plan of the close (dated c.1720) does not show any trace of the buttresses on the north side of the nave. Instead he appears to represent the cloister as relatively complete, with four walks, the southern against the nave aisle wall, and with the intersections of the walks and the archway into the stair to St Mary's marked by heavier arches. The walks appear, from his evidence, to have been equal, with eight bays in both the east-west and the north-south alleys.

- 2.3.2.1.2 Unfortunately this resolves nothing, but rather adds to the confusion. The arches of the surviving corner bays are in no wise different to those of the other bays; there are not eight but rather nine bays in the extant north walk; and the system of bay divisions which Lord shows against the nave wall do not exist and cannot have existed.
- 2.3.2.1.3 Other drawings by Lord are found in Browne Willis' 'Survey' of 1717 and Yardley's 'Menevia Sacra', including both a plan and also a northern prospect of the church which Yardley has commented upon, noting inaccuracies and omissions.⁶⁵ The plan (facing p.14 of the Arch. Camb. edition and differing only in one slight respect from the version in Willis), like that included in the plan of the close, has a number of gross inaccuracies⁶⁶, but does fail to show any structures on the north side of the nave. The north prospect (facing p.13 of the Arch. Camb. edition) incorporates a number of mistakes of which Yardley identifies seven of the more major; but again there is no indication of the existence of the great buttresses.
- 2.3.2.1.4 Yardley himself makes mention of buttresses only once,
- "At ye other end [ie. the east end (of the north nave isle)], near the door going into ye north Cross [i.e. transept], is a small Free-Stone monument in memory of a mason, who, in Bishop Rudds time probably, built ye buttresses to strengthen ye north isle, & likewise made ye tomb of Treasurer Lloyd in ye Choir of this Church; and it is very likely that he was ye workman who closed ye arches of ye Tower."⁶⁷

This is the memorial of John Bird of Bristol, who died on 4.9.1614, aged 38. Lloyd died in 1612/13 and his monument was erected (presumably

⁶⁵ Lord also drew the presbytery roof, and the coloured leaf is included in the manuscript of 'Menevia Sacra', though it was not reproduced by Green 1927. This drawing is equally confusing to modern scholarship, since it depicts three rather than the existing five east-west divisions of the panelling of the roof - a number which Yardley (probably working from the drawing rather than the roof itself) repeats in his 'Menevia Sacra' description. This does suggest that while Lord is usually fairly accurate he is quite capable of occasional major errors.

⁶⁶ For instance, the lady chapel is positioned centrally with no recess to the north between it and the north aisle; the St Thomas Chapel/Chapter House complex to the east of the north transept is shown as adjoining the north choir aisle, with no northward tilt, and with its north wall inside the line of the north transept north wall

⁶⁷ Yardley, 'Menevia Sacra', p.15-16.

posthumously) by his son Marmaduke, it is of yellow limestone. Browne Willis makes a similar attribution

"There are no monuments in the North Isle, except one at the East End of the Wall, of one Bird, who was a Stone-Cutter, and made Treasurer Loyd's monument in the Chancel, and dy'd about eighty Years ago."⁶⁸

but mentions neither the buttresses nor the closure of the tower arches (the latter dated much later by Browne Willis, as outlined above). It is possible that Yardley has added the clerestory buttresses to John Bird's oeuvre⁶⁹ because they are of the same sort of limestone as the Lloyd monument.

- 2.3.2.1.5 The erection of buttressing against the north nave aisle appears to have only one surviving written reference, and this does not precisely identify the structure to which it refers. An entry in the *Liber Communis* for 1754-5 records:

- "Paid [George Martin] for building Buttries to support ye North Isle as per receipt. 12,,13,,4."⁷⁰

Jones and Freeman see this as being the second buttress from the east (that against which no internal flying buttress rests).

Of the other buttresses the same authors record that the westerly buttress on the north-west corner of the north transept was, "built within the memory of man" (p.170 - from 1856), and, by their failure to identify it with Martin's building work, indicate that they are not the same.

- 2.3.2.1.6 Jones and Freeman see the majority of the buttressing as being contemporary with the clerestory fliers, taking the absence of a flyer in the second bay as indicating that its nave aisle buttress is the 1754-5 construction. They also note the similarities in design with the buttressing of the eastern elevation of the south transept, suggesting that the latter were copied from the nave buttressing in a little before 1565, on the basis that the former seem to have provided part of the structure of the 'Vestry' for which

⁶⁸ Browne Willis 1717, p.6.

⁶⁹ There is no entry for John Bird in Gunnis' *'Dictionary of British Sculptors'*.

⁷⁰ Lib. Comm. IV. p.165 (quoted by Jones and Freeman, fn.b., on p.182)

a lock was provided in that year.⁷¹ There are, however, problems with accepting so early a date for even the western buttresses of the nave aisle.

2.3.2.2 Structural evidence for dating

2.3.2.2.1 Introduction

2.3.2.2.1.1 Some insight into the relative chronology of the buttressing is possible by examining their structure both individually and as a group, by investigating their relationship to the clerestory fliers, and by close examination of the fabric of the western buttresses, which impinge upon the fabric of the west cloister. This, too, however, is as confusing as it is helpful.⁷²

2.3.2.2.2 The individual form of the buttresses and their interrelationships

2.3.2.2.2.1 The buttresses are all of remarkably massive construction, built of semi-coursed rubble which utilises a mix of most of the available building stones used elsewhere in the cathedral. They are either built using, or have been extensively repointed in, a hard white mortar which probably incorporates a hydraulic lime of some description - this is particularly true of the eastern pair and that belonging to the north transept.

2.3.2.2.2.2 The relationships between the buttresses are confused because the different sets of characteristics, which should allow them to be grouped, overlap. The eastern three (and those belonging to the north transept) have stepped coped weatherings. The eastern pair appear to have the same geological composition and weathering characteristics, but the form of the arch beneath them is different. The western pair appear to have the same geology and weathering characteristics and possess strange 'bonding stones', but the

⁷¹ See Jones and Freeman 1856, p.169.

⁷² Much of the material which follows has already been rehearsed in the unpublished report on the 1992 archaeological recording programme at St Davids cathedral, pp.23-35 and 68-9.

western one has a sloped top rather than a coped weathering.

- 2.3.2.2.2.3 The eastern pair, are, however, so similar in their general form and geology, lack the 'bonding stones' of the western pair, and have the same general weathering characteristics, that they must be considered to be closely related in date. This conclusion may be supported by the plan of the cathedral drawn by Carter in 1806 and reproduced in Robson 1901 (p.10), where the two eastern buttresses are shown in outline only, with the two western ones being blocked-in like the rest of the walls on the plan.

- 2.3.2.2.3 The relationship of the buttresses to the clerestory fliers

- 2.3.2.2.3.1 Only three flying buttresses from clerestory level were ever constructed - there are no indications of the disruption which the removal of such a buttress from the second bay would necessarily have caused. All three are of generally similar design (though the first is slightly less steep), and all of them end against the nave aisle wall with a massive buttress outside. Jones and Freeman are happy that these nave aisle buttresses were constructed at the same time as the clerestory fliers to provide abutment for them: however, there are a number of reasons for questioning their contemporaneity.

- the style of the two types of buttressing could not be more different: the fliers are elegant, moulded, limestone ashlar constructions running steeply down from the clerestory to merge into the vaulting shafts of the nave aisle wall; the aisle buttresses are ugly, massive, rubble structures standing four-square against the wall

- the geology is not only dissimilar, it is exclusive - there is no yellow limestone in the exterior buttresses whatsoever.

- the raking angle of the fliers is not matched by the buttresses, the fliers terminate part way down the vaulting shafts, about half-way down the height of the windows; while the two eastern exterior buttresses meet the aisle wall at a considerably higher position. Had major exterior buttresses been planned at the time the fliers were erected the latter would not have needed to be so steep since they could have been made to meet the aisle wall much higher.

- the western buttress is not accurately aligned on the position of the flier, which is considerably to the south of the point where the buttress meets the wall. This is the result of the builders incorporating the west wall of the

cloister into the buttressing.

2.3.2.2.4 The relationship to the fabric of the cloister

2.3.2.2.4.1 The two eastern buttresses and the western of the north transept buttresses are freestanding, but the western nave buttress and the northern transept buttress are intimately related to, or intersect, fragments of the cloister complex.

2.3.2.2.4.2 The north transept buttress rests upon the eastern wall of the east cloister walk. On the east elevation the two phases can be distinguished by a horizontal offset near the height of the top of the pentice walk, and it abuts the vertical toothed joint of the three-storey 'sacristy' area at its northern end. The difference between the two structures is more difficult to identify on the western elevation - in part by later repointing - but it is fairly clear that the plastered areas of the southern bay of the east wall of the cloister walk are earlier than the buttress, and it is likely that the junction runs down fairly steeply from the apex of the southern bay of the arcade.

Evidently this buttress was constructed at a period when the southern bay of the arcade was already partly ruined and the east walk was probably unroofed.

2.3.2.2.4.3 The western nave buttress appears to terminate against the stub of the outer wall of the west cloister walk, with a low section of diagonal walling running from its north-west angle to the face of the cloister wall. Parts of the inner face of the cloister wall appear to have been refaced or otherwise interfered with, but there exists above the base and wall-shaft of the 14th century cloister the stub of a springer which could not have co-existed with the vaulting of the cloister roof - suggesting that the buttress is butting against a post-cloister structure.

2.3.2.2.4.4 The buttress to the east of this is much the lightest structure of the series, with only a single coped projection at parapet level, and two sloped weatherings marking the steps in the northern elevation. Furthermore, like the buttress to the west the line of the curve of the clerestory flier is taken up by the structure in a more convincing way than the eastern buttresses.

2.3.2.2.4.5 At its base this buttress runs out to, and rests upon the top of a ruined buttress of the inner wall of the western cloister walk. Resting on top of this spur of masonry is a secondary block of rubble masonry which incorporates

the stub of a cross wall running east-west on the same line as the springer preserved on the east elevation of the western buttress. This wall stands outside the line of the west walk of the cloister, and taken with the fact that the primary fabric of the buttress rests upon a ruined fragment of the cloister, and its erection would have rendered the windows of the south end of the walk inoperative, indicates that the buttress was erected only after this end of the fourteenth century west walk had been abandoned. The existence of later walling from the east and south elevations of a structure on or near the site of the west walk, however, shows that, although probably later than the dissolution and partial dismantling of the College cloister, the buttress is earlier than, and co-existed with, a post-College building here.

- 2.3.2.2.4.6 It seems probable that this building may have been part of the complex erected over the west walk after the destruction of the vaulted cloister range, to which the door jamb in the west wall beside the tower of St Mary's Hall, and the pitched roof-line on the south face of that tower probably belong. The base of this opening in the northern end of the west wall implies a floor at approximately the level of the springing of the vaulting, and indicates that the vaulting of the cloister walk had already been removed - almost certainly a post-medieval arrangement.⁷³ The fact that this building apparently terminated just north of the buttressing also suggests that it is a post-dissolution feature.
- 2.3.2.2.4.7 Thus, if the suggested succession is correct, this buttress is post-1549, but predates a partial reconfiguration of the west cloister.
- 2.3.2.2.4.8 The odd projecting stones which the western buttresses both possess are not easily accounted for. They appear to represent bonding stones to tie the buttresses into another structure which existed to east and west of the eastern one, and to the east (only) of the western. A southern walk to the cloister would answer such a description, but the positions of the 'bonding stones' do not easily resolve into a configuration which suggests such a purpose, and there are no indications of roof-lines or other features having been cut into the fabric of the buttresses.

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Unless settlement of the fourteenth century cloister had been so severe as to require the partial dismantling of the ?original two storey west walk.

2.3.3 Outline chronology

- 2.3.3.1 It seems therefore that all the great buttresses of the cloister garth area are post-1549 - at least post the destruction of the south end of the west walk of the cloister, which seems unlikely to have been sacrificed for the erection of the buttressing. It is possible that the cloisters prior to that date had been modified to provide abutment to the nave aisle, but if so no sign of it survives. Following the dissolution and the disuse of the cloister whatever abutment it might have provided would probably have fallen into decay, and it may be that the western pair of buttresses were erected at this point. Subsequently the south and part of the eastern wall of a secondary structure were erected upon and against the western buttresses, suggesting a later sixteenth or earlier seventeenth century date for their erection.
- 2.3.3.2 The massiveness of these earlier western buttresses could be partly accounted for by a wish to bridge a pre-existing structure - such as a south walk to the cloister range, a possibility to which some weight may be added by the existence of the 'bonding stones' in both elevations of the eastern and the eastern elevation of the western of this pair of buttresses. Even if a structure did not exist in this position a wish to perpetuate a traditional route from the north transept door (assuming that it had not already been completely blocked at this date), or around the south-east angle of the garth, may have conditioned the wide arch in the buttresses.
- 2.3.3.3 The wide arched buttresses were imitated in an even more massive form in the eastern pair, one of which may be referred to in *Liber Communis* in the 1754-5 payment, suggesting a mid-18th century date for both.
- 2.3.3.4 The north transept buttresses may be of two dates, the northern perhaps belonging to the general reworking of the roof at the end of the 17th century, the western perhaps that referred to as built within living memory in 1856.
- 2.3.3.5 All of this suggests continued attempts to restrain movement in the north transept and the north nave aisle walls between the later sixteenth and the early nineteenth century.
- 2.3.4 Summary chronology of the movement of the tower and the remedial alterations which can be considered a response to it
- 2.3.4.1 Taken together, the documentary evidence and the study of the existing

fabric suggests that:

- the tower probably remained relatively stable after the 1220 rebuilding. Walls between the crossing piers at low level on north, south and west may have been erected at this time to help stabilise the building.

- The renewing and enlarging of the pulpitum beneath the newly heightened tower under Bishop Gower was probably not initially a precaution against or a reaction to renewed movement in the western arch.

- There is evidence that the walling up of at least part of the western crossing arch had taken place as early as 1492, and that this may be associated with the infilling of the lower voids within the pulpitum against the western piers (though this latter could belong to the seventeenth century infilling under the tower).

- The erection of the upper storey of the central tower is the most likely cause to have renewed movement in the fabric, and the north clerestory flying buttresses - the first (surviving) external abutment to the building - probably belong to this period.

2.3.4.2

From this point onwards the structural history of the north transept/nave area of the cathedral church becomes a catalogue of the responses to the increasing instability of the fabric. The following is an attempt to provide a summary chronology of the responses to the deformation of the fabric probably associated with the crushing of [especially] the [north-] western crossing piers:

c.1520-30: The addition of the clerestory flying buttresses with the primary period of bowing of the northern clerestory wall

c.1530: The renewal of the nave roof to a design which minimised outward thrust on the clerestory

after 1530: the deformation of the nave clerestory continues, concentrated in the sector between the first and second clerestory buttresses

?after 1547 and before 1753: the western pair of nave aisle buttresses built incorporating the south end of the post-medieval two storied west cloister walk.

c.1694-1705: The renewal of the transept roofs with a reduced apex and 'girder' collars to prevent spreading of the feet of the trusses. Possibly all the openings in the western elevation of the north transept were blocked at this time, making the whole wall (except for the door into the north nave

aisle) a solid unpierced mass of masonry. Probably the north-west corner stair turret was infilled, and perhaps the northward buttress erected against it on top of the east cloister wall.

1754-5: One (and probably both date from around this time) of the eastern pair of nave aisle buttresses built by George Martin at a cost of £12 13s 4d.

after 1754-5 and before 1806: the westward buttressing of the north transept [?re]built (built within living memory in 1856); the northward buttress is probably earlier and may date to the c.1700-10 campaign.

3 Previous Archaeological investigation of the College

3.1 W.D. Carøe's excavations in the cloister, 1933-4

3.1.1 Introduction

3.1.1.1 As far as is presently known the only area of St. Mary's College for which any records of excavations survive is the cloister. In 1934 W.D. Carøe published the results of his investigation of the cloister walks following on from the reduction of the ground level in the garth by about 2 feet 6 inches. This work served to expose the tops of the pentice walls on the north, east and west walks, and Carøe undertook additional digging to try to locate the southern termination of the east walk and any signs of the south walk. His paper in *Archaeologia Cambrensis*⁷⁴ gives no indication of the precise location of deep excavations, but his text, and, to a lesser degree, his published photographs, indicate that he dug deeper trenches in places. He states that,

'Deep digging found no foundations for any south range - or east range beyond bay 3E; only the broken coffin lid illustrated was found where indicated [the published plan shows it midway between the second and third great nave buttress from the west]. A search was made outside the north door of the cathedral for any proposed porch or cloister connection with it, but in vain.'

3.1.2 Deep excavation

3.1.2.1 Thus it would appear that additional deep excavations were carried out at the south end of the east walk over the projected position of the pentice wall

⁷⁴ Carøe 1934, pp.279-90.

of the fifth bay, since Carøe states that in the east walk

'...the garth wall stops suddenly at K [at the south margin of the fourth bay south], where the second larger garth buttress would have begun. No other foundations were found.'⁷⁵

- 3.1.2.2 Excavation of one of the test pits in 1998-9 would tend to confirm this, since the 1 metre square sondage dug against the north face of the buttress running westwards from the north-west corner of the north transept encountered disturbed ground which contained almost no stratigraphy whatsoever, perhaps best interpreted as the back-fill from Carøes digging (or, conceivably, from the robbing out of the stonework of the wall).
- 3.1.2.3 The pentice wall south of the position of the south wall of the sacristy appears to have been more heavily robbed than elsewhere, since on his plan Carøe shows this wall hatched to indicate a foundation below ground level - again indicating deeper digging in this vicinity.
- 3.1.2.4 It is unclear whether Carøe ever exposed the massive off-sets of the pentice walls, since he gives no indication of their existence on his plan; but it seems likely that the deep excavations south of 'K' would have traced the southern face of the end of this footing over its full width. Regrettably he does not describe the end of this foundation - it would be valuable to know whether it finished in a 'raw' break (suggesting the robbing out of stonework from a wall which continued), or an 'ordered' building face terminating in a series of built off-sets or a flat face (suggesting a deliberate end to the foundation).
- 3.1.2.5 Carøe's plan also shows the south end of the western pentice wall hatched to indicate 'foundation below ground', a legend which is also arrowed to this area. In this instance it is the whole bay from the southern edge of the buttress belonging to the junction with the next bay north which is indicated, and Carøe states that at its southern end this wall 'stops abruptly'. [p.286]
- 3.1.2.6 Despite the existence of this last section of walling, which presupposes that a southern cloister walk should have been one bay further south (i.e. against the north aisle), Carøe was convinced that the south walk would have had to be one bay to the north of the aisle, because of the effect it would have had upon the nave wall and its fenestration. Whether he dug to test this conclusion by looking for the outer (southern) wall of the putative

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Yet strangely this buttress has been laid out in the circuit of the pentice wall as if it exists below ground.

south walk, or whether he restricted his investigations to the expected site of his northern pentice wall is not known; all that is certain is that he dug deeper than usual over the site of the south walk, and in the process unearthed a coffin lid midway between the second and third buttresses from the west, a little closer to the south wall of his southern walk than to the pentice wall.

3.1.2.7 Of his digging outside the north door there is no more said than that it produced no evidence for any linkage to the west cloister walk.

3.1.3 The deposits removed in 1933-4

3.1.3.1 The need to reduce the over-burden in the cloisters at this date introduces the question as to what the mechanism was which raised the ground level to this extent in the centuries following the dissolution. The existence of squared ashlar plinths in the pentice wall buttresses shows that the ground surface had risen, and that Carøe was excavating stonework which had originally been intended to be exposed. The cloister garth had probably been intended as the burial ground of the College from its foundation in the 1360s, but it is unlikely that interments connected with this use would have been sufficient to raise the ground level by this amount, nor that the use of the garth for burials in the post-medieval period would account for the additional 2 foot 6 inches which Carøe says he removed. Some of the additional deposits probably derive from the digging out of the massive foundations for the great buttresses. The destruction of the cloisters themselves seems unlikely to account for much in the way of additional material, since Carøe testifies that little in the way of demolition materials was found:

'One had hoped for the finding of many fragments bedded in the earth...but finds have been sparse, and it would seem that the destroyed cloister must have served as a local quarry...only a copper coin of Charles II and a rather coarse and curious broken coffin slab were the extraneous spoils.'
[p.279]

and he speaks of '*the few architectural fragments found*'.

3.1.4 The west cloister footing outside the second bay south

- 3.1.4.1 Carøe provides no commentary on the enigmatic footings adjacent to the west walk's outer wall outside the second bay south beyond the legend on the plan '*foundations at ground level*', nor does he comment on the '*base of door*' where the cloister wall is breached adjacent to them. These were capped by Carøe in his work at this time, and as a result there is no indication as to whether they are integral with the west wall or not.

3.1.5 Architectural fragments retrieved during the excavations

- 3.1.5.1 Carøe defines two classes of architectural fragments derived from his excavations: those from the cloisters themselves, and a second series which appear to derive from another building -

'Considerable fragments of cusped tracery were lying about. The sections have two orders and are 1 foot 2½ inches thick. These are possibly remains of Bishop Gower's windows of the aisles, thrown out at Butterfield's wirey restoration, or they may be parts of the traceries of the windows of the upper storeys.'

Carøe does not directly mention the windows of the Chapel of St Mary as a possible source, though he was working on that building at the same time as the excavations were taking place. In view of this it seems unlikely that they derive from the Chapel building, since he must surely have tested such an hypothesis. He does not mention their geological source, and if they were of Caerfai stone they could not have come from St Mary's.

- 3.1.5.2 The fragments from the cloister were sufficient to provide a hypothetical reconstruction of a typical bay of the north cloister walk [Carøe's Plate II]. The in situ remains of the buttress plinth, wall-rib, keystones and springers are sufficient to define the form of the vaulting; while Carøe retrieved a mullion, the tracery springer which rose from it, '*one whole pilaster giving window jamb, vaulting shaft, and width of buttress...a base stone of the vaulting shaft with a string course worked on the solid upon it*', indicating a continuous seat under the garth openings. No tracery stones were found, and the tracery springer bore no cusps, so that Carøe reconstructed the tracery with trefoil (minor flanking) and sexfoil (major central) openings. He comments that,

'...the general scheme of fenestration...is undoubtedly somewhat coarse and clumsy, curiously so considered in association with the refined and well-disposed vaulting.'
[p.290]

- 3.1.5.3 Again, he does not refer to the geological source of the tracery stones. It is of note that Carøe records that the jambs and mullions showed no glass-line.
- 3.1.5.4 There is also no indication of how the wider buttresses of the west cloister were integrated into the bay design.
- 3.1.5.5 The whereabouts of the architectural fragments which were retrieved at this time is not known, though the '*base stone of the vaulting shaft with a string course worked on the solid upon it*' is probably the one which was built into one of the buttresses of the west walk.

3.2 Excavation on the site of the Song School and its pipe trench, 1992⁷⁶

3.2.1 Introduction

3.2.1.1 In the winter of 1992 the creation of the new Song School within the space enclosed by the eastern buttress of the nave and the western buttress of the north transept necessitated the further reduction of the ground surface; and at the same time the provision of drainage for the washing and toilet facilities entailed a narrow pipe trench running parallel with the north nave aisle wall beneath the arches of the nave buttresses. While the ground within the buttresses proved to be almost sterile of pre-19th century archaeological features, the pipe trench not only exposed several structures (all but one probably of post-medieval date), but also indicated how close to the present ground surface the archaeologically sensitive deposits are in this area.

3.2.2 The Song School Site

3.2.2.1 The area enclosed by the two buttresses at the north west corner of the Cathedral crossing was known to have been disturbed by the insertion of the modern heating duct which runs along the east cloister walk from the east end of the undercroft beneath St Mary's Chapel to enter the Cathedral beneath the angle between nave and north transept (a similar duct also runs the length of the west cloister).

3.2.2.2 Previous destruction of the earlier archaeological contexts must have taken place in the third quarter of the 19th century, when a conduit was constructed around the whole of the building. This drain was located by the 1992 excavations running south through the doorway in the north transept buttress and then turning westwards to run parallel to the north aisle wall beneath the arches of the nave buttresses - the modern drainage pipe runs above it over the eastern section, and then outside it to the west.

3.2.2.3 Between the heating duct and the north transept's west wall parts of two

⁷⁶ This work was reported on for the Dean and Chapter and CADW in Sampson 1992.

suspected cist burials were located, their upper (eastern) ends respecting the 12th century wall, their lower (western) cut away by the heating duct. These were the only suspected medieval features located during the reduction of the ground level, and their closeness to the surface suggests that the ground level has been substantially reduced at an earlier date. In addition, part of the medieval footing of the north-west corner turret of the transept was found to have been slighted, either at the time of the erection of the transept buttress (beneath which it passes in its reduced form) or when the College buildings were being erected, since there appears to be a mortar layer of the same type as is found in the College between the 12th and 18th century masonry.

3.2.2.4 The existence of possible cist burials at a relatively high level suggests that the construction of the 14th century cloister may have caused the reduction in the 12th century ground-surface at the eastern side of the garth, a conclusion supported by the exposure of massive boulders apparently forming the foundation of the north nave aisle wall only a little way beneath the ground surface during the course of the 1992 excavation.

3.2.2.5 The line of the Scott period conduit and of the extended line of the east cloister's pentice wall coincide - both passing beneath the opening in the north transept buttress - and it seems likely (since it is known from Caroe's excavation that the massive footing of the pentice wall ends at the fifth bay south) that any (more ephemeral) traces of such a wall were removed in the process of creating the conduit.

3.2.3 Features located in the pipe trench

3.2.3.1 The most important structures intercepted by the excavations for the drain were:

- the Scott period conduit running beneath the arched openings in the nave buttresses, approximately on their centre-lines;⁷⁷

- an earlier conduit which runs north-west / south-east in the vicinity of the north nave doorway, and which discharged through the fabric of the springing on the south of the bridge by Pen y

⁷⁷ Sampson 1992, pp.44-5.

Ffoss;⁷⁸

- an area of cobbling outside the north nave door, probably the remains of a path running from the nave door to the bridge by Pen y Ffoss, and perhaps laid at the same time as the path which runs north towards Porth Gwyn on the other side of the bridge (dated in white pebbles at its western end '1705').⁷⁹

- a possible shallow wall-footing (of apparently no more than two surviving courses), for a rather slight structure at the northern edge of the cut, first located between the two eastern buttresses and disappearing near the centre-west buttress.⁸⁰

3.2.3.2 Of these the last is the most intriguing, since it lies on the expected line for an outer pentice wall belonging to a south cloister walk built against the north nave aisle.

3.2.4 The south cloister walk.

3.2.4.1 Earlier commentators have tended to assume that the south walk of Adam Houghton's cloister was never built. Working on the assumption that any masonry south cloister walk built against the cathedral must have left some mark upon the nave aisle and west transept walls, and noting the absence of any sign of bonding or scars and the fact that the sills of the aisle windows are at a normal level,⁸¹ W.D. Carøe concluded that the south walk must have lain one bay further north, but his excavations produced no sign of its existence in this position either. Indeed, Carøe's excavations seem to prove that the east walk ended at the fifth bay south, and the west walk at one bay north of the cathedral.

⁷⁸ Sampson 1992, p.54.

⁷⁹ Sampson 1992, p.53.

⁸⁰ Sampson 1992, pp.45-6.

⁸¹ The windows of the north nave aisle were restored by Butterfield in the 1840s, and it is by no means certain that the present position of the exterior sills is that of the medieval fenestration. It is, however, clear that any putative structure of this kind could not have cleared the full height of the north transept door opening and failed to impinge upon the existing eastern window sill.

- 3.2.4.2 Such a partial circuit of the cloister is at variance, however, with the testimony of Bishop Houghton himself, who wrote that having built the College and Chapel, '...we have begun to build an **attached** and **useful** cloister between the said cathedral church and the aforesaid chapel.'⁸² However, a cloister which leads to neither of the cathedral's northern doorways is neither *devotum* nor *utile*.
- 3.2.4.3 The surviving standing buildings of the College and Chapel contain several hints of the former existence of lightly built, possibly timber structures and walkways. There are signs, for instance, that a covered pentice walk could have crossed the western garden from the common hall to the northern chapel stair, and the great corbels beneath the east window of the Chapel could have supported either a pentice roof, or even a two storeyed structure containing a first-floor walkway. If such structures formed a part of the general architecture of the College it makes it all the more likely that rather than attempting to build a conventional stone cloister of consistent design right around the cloister garth - with the great amount of cutting-in of new arcading and vaulting that this would involve - the southern parts of the 14th century cloister may have been of much lighter construction against the walls of the cathedral itself. Such a structure would have overcome the two major problems faced by an architect attempting to design a cloister for the new College: that of integrating his architecture into two pre-existing masonry walls, and that of the considerable slope of the ground against the north nave aisle.
- 3.2.4.4 If the slight footing located by the 1992 pipe trench were the foundation for a southern pentice wall it is very clear that this was of much lighter construction than any other surviving part of the cloister. The footings of the pentice wall on the west side of the garth will be described more fully below [Section *****], but this was a massive wall, nearly 2 metres deep and probably as much as 1.5 metres wide overall - and this seems also to have been the case even on the north walk where the cloister was certainly only a single storey in height. Any wall erected on these southern footings could only have been of light timber-framed construction, a form of building which would not require keying into the masonry of the cathedral, and which would need no more than a masonry pad to support it. Timber construction would allow the building to follow the natural slope of the ground, and this seems to have been the case here, since the massive blocks in the foundation run parallel to the existing slope.
- 3.2.4.5 A final - albeit inconclusive - piece of evidence for a larger cloister than

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As translated by James, 1981, p.139. '*unumque claustrum inter ecclesiam cathedralem et capellam predictam facere inchoavimus devotum et utile.*'

Carøe's excavations might suggest also came from the 1992 excavation. At the westernmost buttress the new pipe trench was pushed northwards by the presence of Scott's conduit, and here the buttress's foundation was exposed on the southern side of its arch. The upper extent of the footing appeared to be vertical and bonded with orange powdery mortar down to 40 cm below the present surface; however, at this point the buttress rests on an off-set which is bonded with a mortar very similar to that associated with the College buildings - a white lime mix with Caerfai stone dust giving it a slightly purple tint - suggesting that it may actually belong to the west wall of the 14th century cloister, at a point well to the south of where it should end if Carøe's hypothetical reconstruction were correct.⁸³

- 3.2.4.6 Furthermore, the cutting back of the footing of the north-west corner of the north transept on its western face, seems unlikely to have been done for any other reason than to accommodate the outer wall of a building erected against it. Certainly the erection of the buttress against it would be an unlikely cause, since removing masonry in order to prop it would be counter-productive.
- 3.2.5 The profile of archaeological deposits
- 3.2.5.1 The 1992 pipe trench showed that there are important medieval features very close to the existing ground surface, and has provided an east-west section through the surviving deposits, helping to assess the likely impact of the cloister scheme.
- 3.2.5.2 At its northern end the slight wall-footing on the line of the south cloister pentice is as little as 15 cm. below the top of the existing tarmac, and its full depth to the base of the foundation is only about 40 cm below the surface. Therefore, even stripping out a small depth for the insertion of scalplings for the floor of a new building will destroy all evidence of this important feature and its relationships. This may already have happened as a result of previous ground disturbance at the eastern end of the footing, since no sign of it was seen in the northern 2 metres of its presumed course, or in the Song School site itself.
- 3.2.5.3 The cobbled surface outside the north door of the nave is also only an average of 20 cm or so beneath the top of the tarmac, and is clearly under threat from the creation of a north porch in this vicinity.

⁸³ This footing appears to be cut by the Scott conduit.

- 3.2.5.4 The most potentially worrying aspect of the depth of the early features is the way that the burials towards the west have been brought close to the existing surface by the landscaping of the graveyard. During the machine excavation of the sump against the east wall of the channel of the river a buried topsoil - initially assumed to be that of the earlier graveyard - was located 68 cm below the tarmac. However, this layer represents the landscaping of the western margin of the graveyard, probably by the Scott practice, after the erection of the present west front, and immediately beneath this layer cist burials were located. New drains running from St Mary's undercroft to the sump will almost certainly run straight through this levelled graveyard
- 3.2.5.5 It is evident, therefore that major archaeological features lie within 20 (at the east) and 70 (at the west) cm. below the existing ground surface, and that even by minimizing the impact of the cloister project as much as possible, these are likely to be disrupted by the proposed new buildings.

3.3 Test excavations 1998-9

3.3.1 Introduction

3.3.1.1 During the winter of 1998-9 four small test pits were dug at the behest of Mann Williams, Consulting Civil and Structural Engineers. These were sited in the cloister garth and adjacent to the north door into the nave in order to ascertain the condition and status of the foundations of the cloisters, the nave and the great buttresses which support it. Each pit was notionally 1 metre square, but the great depth to which they were dug, and the necessity of using mechanical means of excavation for the lower parts of the digging, meant that their area was somewhat expanded by the time the walls were bottomed.

3.3.2 The later 14th century cloister walls

3.3.2.1 Test Pit No. 3, over the pentice wall of the sixth bay south on the west walk demonstrated what had been suspected from previous interments of ashes in the garth, that the pentice walls were solid masonry out to the outer faces of the minor buttresses.⁸⁴ These massive off-sets mean that the foundations of the pentice walls are at least 1.3 metres wide, and since there is almost certainly a small off-set on the inner face of the wall, probably a total of nearer 1.5 metres wide.

3.3.2.2 The excavation exposed the eastern face of the coursed rubble foundation beneath the buttress to a depth of 1.85 m., the lowest 76 cm. being off-set by a further 20-30 cm and of a much rougher construction, incorporating a basal layer of massive boulders which showed only the most cursory signs of having been worked. Both the minor and the major buttress at the south of the test pit appear to be integral with this foundation, suggesting an intention on the part of the builders to make the west walk a two-storeyed structure from the start, even though the initial roof-line on the south-west tower of the chapel block implies a single storey building. It

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I am grateful to Tony Pearce for the information that in burying ashes he has found that the whole length of the north pentice wall is solid masonry between the buttress.

seems likely that, as at Wells, for instance, the roof of this earliest upper storey stopped short of the tower to allow a parapet walkway to pass around its northern end.

- 3.3.2.3 Test Pit No.1, against the north face of the western buttress of the north transept, confirmed Carøe's 1933-4 excavation in showing no sign whatsoever of the east pentice wall in this vicinity. The disturbed deposits from this excavation must represent either Carøe's deep digging in this area trying to locate the wall beyond his 'point K', or possibly the hole left by the extraction of the wall footings at some earlier date.⁸⁵
- 3.3.2.4 Test Pit No.2, between the two eastern nave buttresses (and against the east face of the western of these), also confirmed Carøe's findings that no pentice wall exists on a line one bay north of the nave aisle. This pit should have intercepted both the continuous footing and the projecting buttress had it ever existed here, and no such structures, nor any sign of their previous existence were found. Beneath the buttress itself the footing extended out from the wall-face by an initial 15 cm off-set just below ground level, but the rubble foundation tended further out lower down, until by 1 metre down it was as much as 60 cm out from the wall-face in the southern end of the trench. It was tempting to interpret this as the re-use of pre-existing masonry to form the base of the buttress, but it is likely that this is no more than the filling up of the irregular foundation trench with rubble during the construction of the buttress.
- 3.3.3 The conduits beneath the east walk.
- 3.3.3.1 The eastern edge of Test Pit No.1 opened a small hole into a void which proved on inspection to open into a stone-built conduit, which is almost certainly part of the Scott period drainage channel discovered during the 1992 pipe-trench excavation. Probing suggested that the conduit turned eastwards a little further to the north (1.14 m north of the face of the buttress), to pass beneath the east cloister wall adjacent to its junction with the north transept, and this tends to be confirmed by signs of disruption at the base of the wall in this vicinity, where stones have been reset with a hard white ?hydraulic mortar of similar appearance to that used in the Scott period work elsewhere.

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There was little sign of the mortar flecking which might be expected of a robber trench for a wall of the size of those of the pentice, however.

- 3.3.3.2 The man-hole cover in the tarmacked east walk just outside the door through the transept buttress opens to expose the heating ducts, and the relatively levels of the two channels suggests that Caroe's brick-built conduit rests on the roof of that built in the 19th century.
- 3.3.4 The nave north aisle
- 3.3.4.1 Test Pit No.4 was dug against the north aisle wall just to the east of the north door in order to investigate the status of the nave footings. This indicated that there is a considerable depth of finely finished ashlar work below ground-level, finishing with a chamfered plinth whose base is 1.2 m. below the base of the existing 12th century north door. The aisle buttress is of fine ashlar construction (with a fresh finish, retaining diagonal tooling and masons' marks) throughout this depth, the return onto the aisle wall also being of ashlar, beyond which the wall is of coursed rubble. Below this there is a 4 cm. off-set marking the transition to the rubble footing, with a 20 cm. off-set a further 60 cm. below. The base of the wall was located at 2.65 m. below the base of the north door, and beneath this was gravel and stones, the ground being waterlogged, with up to 65 cm of standing water at the base of the cut.
- 3.3.4.2 The rubble walling appeared to have been raked-out preparatory to the application of the plaster finish, and this together with the pristine condition of the ashlar, and the gross mismatch in levels between the buttress plinth and the base of the north door, suggests that ground-levels were altered during the construction of the north aisle. It seems that initially the slope of the nave was intended to be greater, and that after the plinths were built the slope was reduced, bringing the base of the nave door up by over a metre in relation to the buttress to the east. The fabric immediately beneath the doorway was not exposed, but if there should prove to be a vertical breaks beneath the lines of the door jambs, for an earlier door related to the first intended ground-level, this would confirm such an hypothesis. The doorway itself is oddly flattened, the arch not being a complete semi-circle, and the capitals (which are present only on the outer two orders) are positioned above the springing of the inner order. These features could be consistent with the raising of the intended position of the aperture.⁸⁶

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It is worth noting, however, that proportionally the north nave doorway as extant is very similar to the north transept doorway - both are close to square in respect to the height : width ratios at the second order out. This is a proportional relationship which Pugin's drawing suggests was also present in the west door of the nave.

3.3.4.3 Much of the excavated sections had to be shored against possible collapse, preventing close examination of the deposits, but the Scott period conduit was exposed on the northern edge of the cut, and inhumations were located at a depth of only 70 cm below the tarmacked path.

3.3.5 Natural subsoils

3.3.5.1 As noted above, the waterlogged natural subsoil beneath the north aisle consists of small stones and gravel; that at the base of the three Test Pits in the cloister garth was a dark purplish-brown clay - which is probably the same as that overlying the gravel for the lowest 78 cm. of the north aisle excavation. The clay occurred at 2.4 m. below the present ground surface on the west of the cloister, 2.25 m. near the centre in Test Pit 2, and at just over 1.9 m. near the site of the east cloister pentice, suggesting a fairly consistent slope in the ground towards the river, a little steeper than that of the present surface.

3.3.6 Human remains

3.3.6.1 Inhumations in the cloister garth were located at 1.25 m. below the present ground surface in Test Pit No.3 and at only 0.70 m. in Test Pit No.4 against the north aisle, and it must be assumed that ground disturbance at or below this depth will penetrate into the area where human remains may be expected to survive. Caskets containing ashes have been buried in shallow excavations between the pentice buttresses on a regular basis since the reordering of the garth in 1934.

4 The archaeological implications of the cloister scheme

4.1 Introduction

4.1.1 Since the inception of the cloister project several different schemes have been proposed with different levels of intervention in the above and below ground archaeology of the College. For instance, near the beginning of the project-design the question of removing the great buttresses north of the nave and replacing them with slighter and more appropriate abutments was raised - hence the stress in an earlier draft of this document upon their date and phasing. The initial intention in the first stages of the design project was also to extend the development beyond the medieval envelope of the cloister into the triangle of land between the west cloister walk and the River Alun. More recent designs, however, have been far less intrusive, and the mitigation of the archaeological impact has become a more salient objective.

4.1.2 The suggestions in this document are based upon the current scheme as of 1 June 2001, and upon discussions with the project architect. They should be regarded as the basis for discussion, rather than as a firm specification for work.

4.1.3 Each section contains an outline of the implications of the scheme, followed by suggestions for an appropriate strategy each of these marked by bullets for ease of reference.

4.2 The cloister

4.2.1 The medieval wall foundations

4.2.1.1 Throughout the discussion stages of the project it has always been the intention to erect the new structure upon the fourteenth century

foundations. The 1998 Test Pit (No.3), excavated for the purpose of assessing the potential strength of these footings, revealed a massive foundation supporting the inner pentice wall of the medieval cloister, at least 1.3 m. wide and 1.85 m. deep, built on the top of the natural hard maroon-brown clay, and while the outer walls of the cloister walks have not been investigated below ground there is no reason to imagine that they are any less well founded.

- 4.2.1.2 However, these foundations do not form a full circuit of the garth, and the sites of the south walk and the southern ends of the east and west walks (as far as is known) have no medieval substrate.

General:

- ❖ In order to build up from the medieval wall footings it will be necessary to remove the 1933-4 capping (consisting of rubble stones in Portland cement). At this stage the exposed medieval structure should be photographed and drawn, the mortar sampled and any variations in the mortar or build carefully investigated and recorded.
- ❖ At the southern terminations of the walls of the east and west cloisters the exposed structure should be carefully investigated to determine whether these are planned and built terminations, or irregular scars suggesting the disruption of fabric which originally continued southwards.

Desirable actions

- ❖ **Geophysical survey:** Once the tarmac and hard-core overburden has been removed from the cloister walks remote sensing of the exposed ground should indicate any major anomalies beneath the surface. If remote sensing of the garth and the ground between the west cloister and the river is undertaken, then this becomes essential for at least the west cloister, in determining the relationships between features in the two areas which it separates. If this could be undertaken at the same time as the other two areas the additional cost should be relatively minor.

It is the understanding of the author of this report that the existing ground level within the medieval east, west and north cloister walks will not be

reduced beyond the removal of the existing twentieth century tarmac and its hard-core base layer. Within the medieval cloister walks are two modern ducts running from the boilers in the undercroft of St Mary's Chapel into the Cathedral, which have been cut into the subsoil beneath the east and west walks. In the published photograph of the 1933-4 excavation of the west cloister there appears to be a large irregular area near the mid-point which may be disturbed.

4.2.2 The south cloister walk - implications

4.2.2.1 In the south-east corner of the cloister, between the eastern of the nave buttresses and the western buttress of the north transept, the modern [1992] building which presently houses the Song School is to be retained. Between the three eastern buttresses of the north nave aisle the construction of a range of two public toilets is proposed, approached from a passage running beneath the buttress arches on the site of the existing tarmacked path. The southern end of the west cloister walk will provide the access to and from the proposed north porch of the nave.

4.2.2.2 Potentially this is the most sensitive part of the project archaeologically. Not only is there the potential for a significant reduction in the ground level to overcome the natural slope of the ground on the north side of the nave aisle, but this is an area of the cloister garth known to retain shallow features close to the present ground surface. Initial proposals required a reduction in the ground level of approximately one metre, prior to the excavation of upwards of a further 30 cm. to form the floor of the new toilets, together with more restricted areas of excavation to a further 60 cm or so for the associated drains. The sill level of the nave aisle windows is a limiting factor on how high the enclosed structures can be - with the knock-on effect of forcing the floor level downwards. However, by making a ramp follow the slope of the existing ground-surface, and keeping the ceiling as low as the nave windows will allow, it has proved possible to obviate excessively deep excavation in these areas.

4.2.2.3 Nonetheless, this area is known to retain evidence of a slight wall only just below the existing surface, the southern face of which was exposed during the excavation of the pipe trench in 1992. This wall is in the position which might be expected for the pentice of a south walk to the cloister built against the nave wall, but is of far lighter construction than the pentice walls of the northern part of the cloister circuit, surviving to a height of only two to three courses and extending between 15 and 80 cm below the surface -

this could represent the slight masonry footing for a light timber structure to complete the circuit of the medieval cloister against the north wall of the nave. Since the ground in the cloister slopes up from west to east the evidence for this wall on the Song School site (excavated in 1992) had been destroyed by previous activity on the site, and it is only in the gaps between the nave buttresses that it seems to survive.

4.2.2.4 For this reason it is important that these areas should be excavated archaeologically to the depth required by the new building, and it is therefore advised that these two areas should be hand excavated by competent archaeological practitioners prior to the commencement of building works.

❖ **Excavation:** Hand-excavation of the general area to the depth required by the building - in particular establishing the existence and stratigraphic relationships of the shallow foundation encountered in the 1992 pipe trench.

❖ **Excavation or watching brief** of the course of the drains required for the toilets and wash-handbasins may, on the basis of the findings of the above, be accomplished by archaeological excavation or a watching brief - but with the work carried out by hand- rather than machine-excavation.

❖ **Excavation or watching brief:** The same comments as are made below in relation to the southern end of the east pentice wall also apply to the southern end of the west pentice wall - it should be possible to establish what the status of the end of this footing is: whether it ends with a clean built termination (implying a truncated cloister), a robbed scar (implying that the west cloister continued southwards), or an eastward return (implying the existence of a south walk against the nave aisle).

4.2.3 The projecting east walk stairwell - implications:

4.2.3.1 The requirements for disabled access to the upper storey of the new eastern cloister walk, have meant that the wall towards the garth in the southern two bays of the east cloister north of the transept buttress will have to be extended westwards beyond the confines of the medieval pentice. Initially discussions centred upon the provision of a lift for disabled access in the north-east corner of the garth where the eastern buttress of the north walk and the northern buttress of the east walk almost enclose the corner of the pentice wall foundation. However, many such lifts require a pit up to 1.5 metres deep to house the winding and other mechanisms,

and this position would have entailed excavation into the solid masonry of the footing. To provide a stair wide enough to incorporate a stair lift and still retain adequate space in the first and ground-floors of the east walk the stair has effectively been brought outside the confines of the medieval cloister walk and into the garth.

- 4.2.3.2 The intention, therefore, is to provide a raft foundation for the west wall of this stair projecting beyond the east walk into the cloister garth.
- 4.2.3.3 This area has almost certainly been part of the cathedral graveyard since at least the twelfth century, and was probably part of the College graveyard from the time of its foundation in the third quarter of the fourteenth century. In landscaping the Close when the College was built earlier graves may have been brought closer to the surface, but it is likely that these have been dug away by subsequent interments during the existence of the College and in the post-medieval period. The documents detailing the disposition of medieval graveyards often specify that burials shall begin at the east, so this part of the College graveyard is likely to have been the most heavily used.
- 4.2.3.4 At the present time the foundation for the new building is expected to require excavation into the grave-earth of the cloister to a depth of between 40 and 60 cm. In the equivalent position on the west walk inhumations were located at 1.35 m. below present ground surface. Taking into account the natural rise of the ground it is unlikely that burials will be encountered above 1 metre.

Essential actions: The east cloister stair projection

- ❖ The excavation of 40-60 cm. depth of soil from the area to be occupied by the east cloister stair will cut into the cloister garth over an area of **** sq. m. The upper 30 cm. or so of this will represent topsoil, and beneath this the subsoils are likely to be disturbed by medieval and post-medieval burials, amongst which there are likely to be modern caskets of ashes.
- ❖ **Excavation:** The turf should be stripped and the exposed surface cleaned in order to locate any such modern interments, which should then be exposed, carefully lifted and reserved in a place of safety for reburial.
- ❖ **Watching brief:** The soil may then be carefully stripped using a mechanical digger with a bucket of appropriate width to the excavation, drawing back to expose successive spits, with a qualified archaeological

practitioner in attendance to record any features exposed in the process. Care should be taken in this process not to disturb the adjacent footing of the pentice.

- ❖ The creation of the raft foundation will also expose the top of the pentice wall footings. In this vicinity much of the wall-top appears to consist of 1933-4 cement bonded rubble cappings. At the southern end of this wall there is an opportunity to try to understand whether the wall was intended to terminate or whether it has been subsequently robbed out. It is likely that Caroe's 1933-4 excavation has destroyed the stratigraphy around the wall-stub since he refers to 'deep excavation' in this vicinity (and Test Pit No. 1 tended to confirm this analysis); nonetheless the character of the wall itself - whether it terminates in a finished face or a ragged break suggestive of robbing of the masonry - may provide hard evidence for the extent of the fourteenth century masonry buildings of the cloister.
- ❖ **Excavation:** There is a case for limited hand-excavation over the site of the end of the pentice wall in order to expose enough of it to establish the form of its termination. In order to achieve this objective it would be justified to excavate below the intended level of the raft.

4.3 Excavation outside the cloister

4.3.1 Introduction

4.3.1.1 Other than the work within the undercroft itself there are two main areas of concern outside the cloister, both lying between the west walk and the River Alun:

- the excavation of drains from the undercroft to the settlement tank adjacent to the river;
- and the excavation for a raft foundation beneath the proposed north porch into the cathedral.

The former is dealt with below as a continuation of the implications of work in the undercroft.

- 4.3.2 Excavation for a raft foundation beneath the proposed north porch
- 4.3.2.1 Caroe in 1933-4 appears to have undertaken excavations in the vicinity of the north door of the cathedral, since he states that, 'a search was made outside the north door of the cathedral for any proposed porch or cloister connection with it, but in vain.' The Test Pit against the north aisle should have intercepted the eastern wall of a putative porch, but no trace of it was located. Unless this was as light a structure as is here being proposed for the hypothetical south walk some sign of building might have been expected to have survived; however, traces of a timber structure supported on a light footing might have been destroyed in the creation of the drainage system introduced by Scott: the deep digging for the conduit, together with the shallower excavations for the drainage channel against the north wall of the nave, perhaps being sufficient to erase all traces in the metre north of the aisle wall which was excavated in 1998. If Caroe also limited his digging to the area adjacent to the nave wall he may also have excavated only ground disturbed in the 1860s-70s.
- 4.3.2.2 The same arguments rehearsed above, based upon Houghton's statement that he was building an 'attached and useful cloister', apply also in this instance: that the large-scale, well-finished buildings of the north, east and west walks which survive imply at least an intended completion to the circuit of the alleys, together with a built connection to the cathedral's doorways in transept and nave. It may be, therefore, that a much lighter structure connecting the north door to the west cloister existed in the fourteenth century, and that this may have left very little trace. It is also possible that what little trace existed has been destroyed by subsequent activity on the site in the nineteenth century, and perhaps also in the 1933-4 excavations.
- 4.3.2.3 The 1992 pipe trench passed through this area without encountering any obvious traces of the side walls of a porch. The main features which were located being a cobbled area interpreted as a continuation of the cobbled path which runs past Pen y Ffoss to the bridge over the River Alun, and appears on the basis of this evidence to have continued to the north door of the nave. The western end of the path partway up the slope towards the site of Porth Gwyn has the date 1705 worked into the cobbling with white setts. Beneath the level of the cobbles, and to the west of the presumed path, a disused conduit was located running north-westwards to discharge beneath the southern side of the bridge over the Alun. This watercourse appears to have been aligned along the southern edge of the presumed pathway, and may date from the same period.

4.3.2.4 It has been suggested in conversation with the project architect that it may be possible to use the cobbled surface (depending upon its status and preservation) as the basis for the raft foundation for the new porch.

4.3.2.5 It would appear from the proximity to the surface of burials at the western margin of the graveyard in this vicinity, that the land to the west of the path to the bridge may have been banked up, and engravings dating from before the erection of the Nash west front [particularly that of Grose] tend to confirm this. The photograph of the west front which includes E.A. Freeman, G.G. Scott and Dean Allan also shows a raised mound at the west end. It is possible, therefore, that burials may occur at a relatively high level towards the western margin of the area affected by the erection of the new porch.

❖ **Excavation** Following the stripping of the tarmac for the area required for the raft foundation of the north porch, hand excavation should proceed to the surface of the cobbled path which is presumed to exist leading to the bridge over the River Alun. The condition of the cobbled area should be assessed to determine whether it is an appropriate substrate for the raft foundation of the new building.

The relationship of the cobbled path to the disused conduit to its west should be established if possible.

It is likely that any traces of an earlier porch will not exist above the level of the eighteenth century path; however, it is possible that some trace of the side walls might survive north of the ground disturbed by Scott's drainage schemes, particularly to the west where the ground may have been banked up prior to the nineteenth century. It is therefore important to ensure that these areas are dug by hand rather than machine excavated, since such traces as may remain are likely to be very slight. In addition the banking up of the ground to the west (and its subsequent reduction in the nineteenth century) may mean that burials are much closer to the surface in this area than they are to the east.

4.3.3 The undercroft and its associated drains

4.3.3.1 Two main areas of concern exist in the proposals for the undercroft itself:

- the pit to accommodate the new boilers for the cathedral heating system
- the levelling of the floor within the undercroft;

with a third which has implications both with the undercroft and the for the ground to the south and west:

- the excavation for new foul-drainage connecting the proposed undercroft toilets with the settling tank installed in 1992 adjacent to the River Alun

4.3.3.2 Little is known of the deposits beneath the undercroft, despite the excavation of a substantial pit for the existing boilers, probably in the 1960s. The initial proposals for the heating system required the excavation of a new pit, but it has proven possible to place the new pit within the footprint of the existing one, so that no new digging in this area will be necessary. It will, however, be necessary to level the floor towards the western end of the west chamber of the undercroft.

4.3.3.3 It seems likely that the floor level has been sloped up towards the west relatively recently; cement patching records work here as recently as 1989, but this probably represents repair rather than the date of the initial alteration, which is likely to be the result of work in the 1960s.

❖ **Excavation** Trial excavation at the eastern end of the flagstone floor in the western end of the west chamber, where it meets the cobbled area of flooring, should initially be undertaken to determine whether the earlier cobbled floor (which exists in the eastern chamber and the eastern end of the west chamber) underlies the flagstones at their junction, and what the nature of the intervening deposits is. If the cobbles do indeed survive beneath the later floor they may well define the level of the earlier flooring, and could be followed westwards to provide a usable floor.

4.3.3.4 The creation of new drains in the floor of the undercroft, while likely to represent only narrow trenching, may well intersect the line of the 'stream' or 'rill' which is recorded as having run through the undercroft. This was probably an uncapped conduit, and it may still exist, perhaps still active, beneath the existing floor.

4.3.3.5 It is also possible that the landscaping of the ground in the fourteenth century for the erection of the cloister and undercroft has penetrated deeply

into the earlier layers, so that even superficial excavation beneath floor level is likely to threaten archaeologically sensitive deposits. In particular there is the possibility of burials being encountered at high levels, and this is also true of the course of the drains outside the undercroft running to the tank adjacent to the River

- 4.3.3.6 During the excavation of the 1992 pipe trench burials were located perilously close to the existing ground surface, since the bank which had formerly existed adjacent to the river south of the bridge over the River Alun had been landscaped flat, probably at the end of the erection of the present west front early in the 1880s. It seems likely, therefore, that as the line of the trench for the foul-drain runs deeper towards the south-west and the junction with the existing tank, that it will increasingly run the risk of intersecting burials.

- ❖ **Watching Brief** The excavation of the trenching for drains within the undercroft will follow the preliminary work required for establishing the desired floor level, since it is from this level that the depth of the new drains will need to be determined. An archaeological watching brief should be undertaken during the excavation of this trenching. This will help to establish the likely depth of deposits over the course of the drain trench to the settlement tank outside the undercroft.
- ❖ **Geophysical survey** The triangular area between the north side of the cathedral, the west walk of the cloister and the river should be surveyed using remote sensing, with the objective of locating the position of cist burials in the hope that it may prove possible to site the drainage cut in such a way as to minimise disturbance of the medieval graveyard and other features which may exist in this area.
- ❖ **Excavation** Depending upon the results of the foregoing it may be appropriate to undertake hand excavation of short stretches of the course of the drainage trench in order to assess the depth and nature of the archaeological deposits. Depending upon the results of such an evaluation a final decision may then be taken as to whether the trench should be excavated by machine with an archaeologist in attendance, or hand excavated archaeologically.

4.4 Recording the standing fabric before building commences

4.4.1 Preliminary photographic survey

4.4.1.1 Prior to the commencement of work a full photographic survey of the standing fabric should be undertaken, consisting (for the exterior) of front-on elevations (where possible) of the individual bays of the cloister, and elevations and details of St Mary's Chapel, the 'Sacristy tower', the north nave aisle bays, and the great buttresses of the north aisle and transept; and on the interior of elevations and details of the undercroft, narthex, kitchen, hall, upper narthex rooms and stair/passageways (where possible). This should be accomplished in 35mm slide and monochrome media (together with sufficient colour print stock to provide illustrations for the final report).

4.4.1.2 Two series of elevations of the cloister and nave bays should be taken (since these will be subject to re-rendering or will otherwise be obscured for future study), one of which should include a scale (2 metre ranging rods or other appropriate photographic scale).

4.4.2 Preliminary fabric survey

4.4.2.1 The photogrammetric survey of the cloister and southern elevation of St Mary's Chapel forms the basis for further recording of the structure, and the provision of scaffolding prior to the commencement of work will enable the checking and hand-enhancement of this resource to take place.

4.4.2.2 Prior to the start of work, but after the erection of scaffolding, time should be allowed for the close-range inspection and archaeological recording of the standing fabric. In addition, in those areas where depointing is specified it is important that time is allowed for re-inspection of the fabric after the removal of the old pointing material and prior to the repointing.

4.4.2.3 While this may be taken as a general injunction for the whole of the fabric, there are several areas of key importance which warrant special mention in this context, in particular within the main body of the Chapel of St Mary:

- the scar of the tomb of Bishop Adam Houghton should be carefully drawn in order to assist in assessing the form of what must have been one of the most important medieval tombs in south Wales. Similarly, recording of the lost piscina on the south wall of the east bay is desirable, but of less importance than the proper recording of the tomb.

- any stripping of the modern render over the dado of the interior of the Chapel should be subject to archaeological supervision, particularly in the second bay from the west, where evidence is known to have existed in the last century for the form and position of the steps between the ante-chapel and the chapel, and of the original screen which divided these two sections of the chapel. Furthermore, it is possible that traces of further consecration crosses may survive beneath the modern material. It is also likely that traces of one or more steps designating the sanctuary of the Chapel exist in the east bay or the eastern part of that immediately to the west, and that marks left by the liturgical furnishing of the sanctuary may survive on the walls of the east bay, and of the stalls in the western bays of the chapel proper.

4.4.2.4 Careful 1:1 tracings of all the surviving consecration crosses, both internal and external, should be made (ensuring that the surviving plaster is not damaged in the process) to ensure a permanent record of these features. This is essential not only for their proper recording but also as a precaution in case they are damaged during the building project. The best strategy for the proper cleaning, conservation and protection of the northern internal cross and its surviving polychromy should be explored.

4.4.2.5 Wherever historic fabric is to be re-rendered, or otherwise obscured for future study, the geological composition of the fabric and any other features which may elucidate the constructional or subsequent history of the building should be recorded on measured drawings of an appropriate scale.

In the context of the medieval fabric special attention should be paid to identifying and recording:

- any significant distribution of stone types in the fabric
- any significant changes in the coursing or the type of mortar denoting medieval repair or phases within the original constructional sequence
- all masons' marks on the ashlar and moulded block

- any constructional features: such as the distribution of putlog holes
- any information concerning the working-practices and tool-kit of the 14th century masons' workshop derived from examination of traces of the cutting and subsequent marking of the stone
- any evidence of the use of iron/lead/other reinforcements within the masonry, or the use of mastic/mortar repairs in the primary fabric
- any evidence of the finishes used on the interior or exterior masonry: plaster substrates and finishes, and traces of painted decoration
- any sign of the seating for the 14th century ceiling/roof (or subsequent ceilings/ roofs) in the upper masonry of the Chapel; and any signs of the form of the parapet of Chapel or tower
- the form and mouldings of the window tracery and any other significant detailing.

Furthermore, all evidence for subsequent repairs and interventions in the fabric should be surveyed and recorded using the photogrammetric elevations as a base.

4.5 Survey during the course of construction

- 4.5.1 All opening-up of ancient masonry fabric should be carefully monitored in the same way that the west front and south transept pinnacles have been in recent years, ensuring that any significant findings are carefully recorded and incorporated the project report.
- 4.5.2 Any additional excavation, such as trenching for services, not already specified should be subject to appropriate archaeological monitoring or (where necessary) excavation.

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Plates

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Plate 4	The north west angle of the cloister
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Plate 6	The interior of the western undercroft chamber
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Drawings

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- Figure 11 Site drawing from the 1998 test pit excavations: Pit against the north wall of the nave north aisle, immediately east of the north nave door. [Scale 1:20]

Figures at end - Photogrammetry of Cloister

Photographs

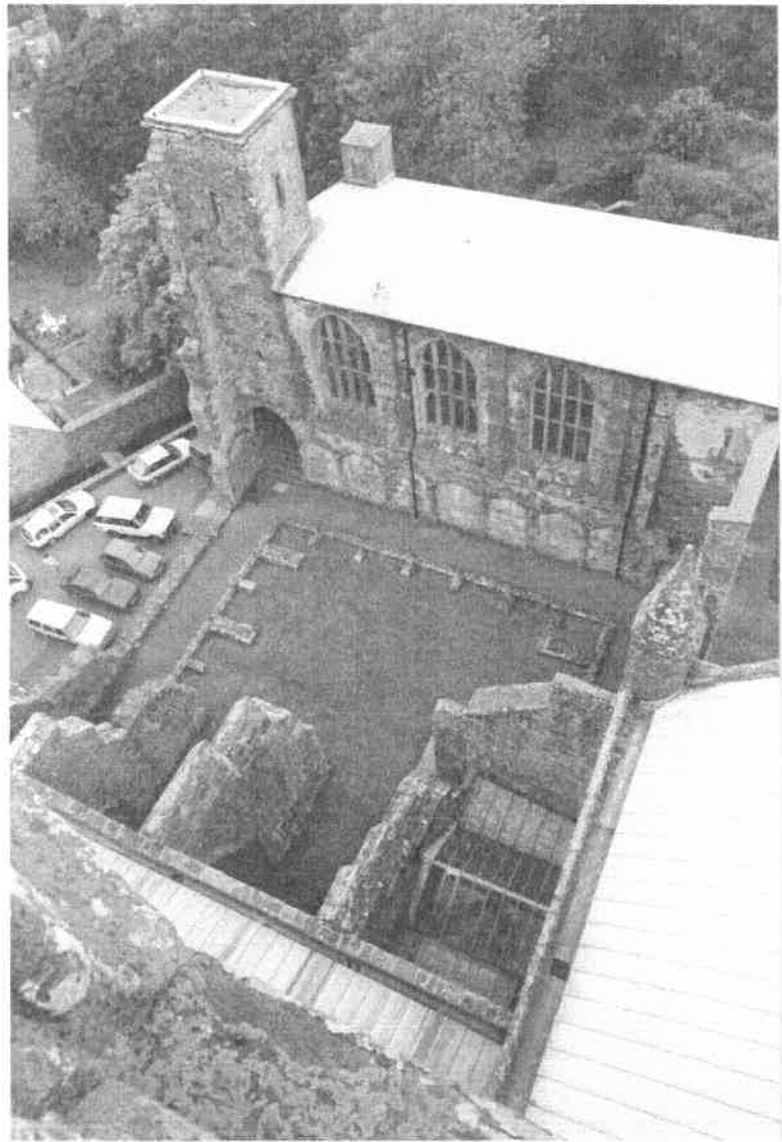


Plate 1. - The cloister and St Mary's Chapel from the central tower, looking slightly west of north. The Choir Room lies between the nearest buttresses. At top right the overgrown ruins of the NW corner of the communal buildings of the college are just visible.

Photographs



Plate 2.- The ruins of the communal buildings of the College from the central tower. The 18th century house at right, Cloister Hall, incorporates two cellars of the eastern range. The gate to the College is immediately west of the Lime Shed (which forms the northern end of the east range). The overgrown mounds to the west are the remains of the ground-floor cellars of the College buildings, the southern range apparently having been backfilled

Photographs

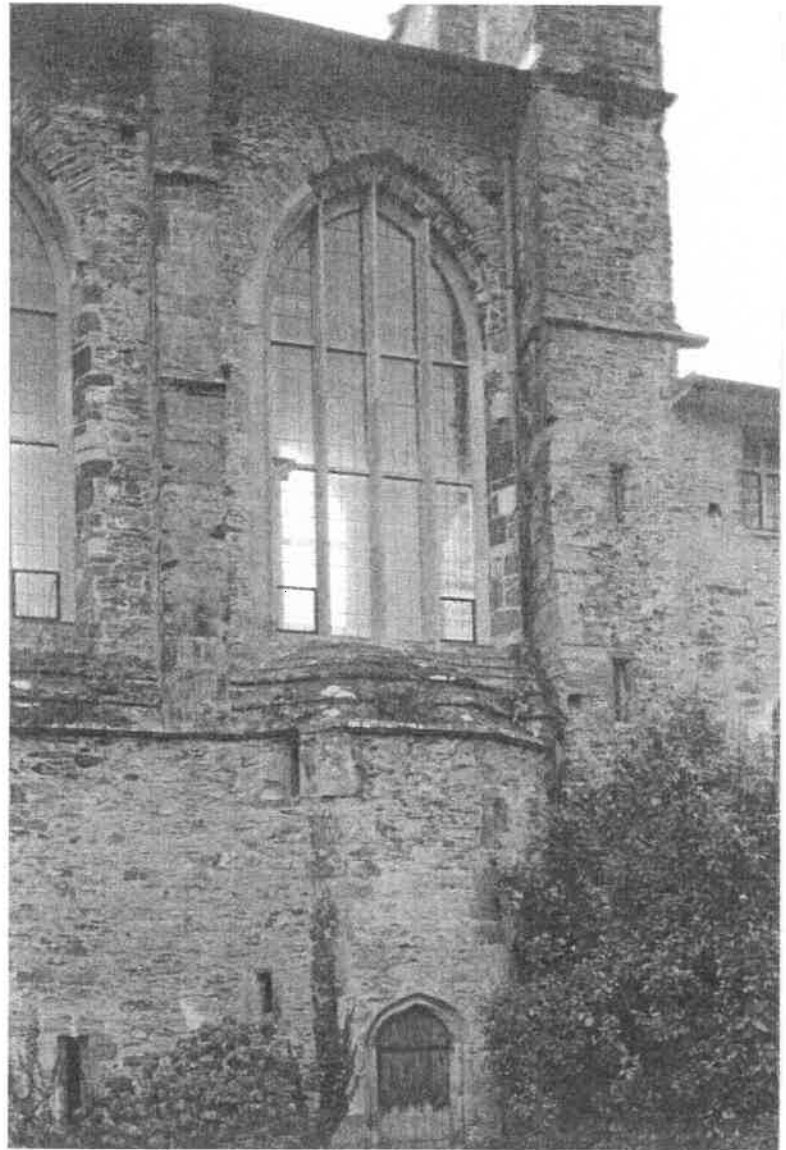


Plate 3. - The western end of the north elevation of the Chapel. Below the renewed chapel window (the eastern transom springer of the tracery remaining) is the projecting demi-hexagonal stair turret which provided direct access from the College buildings to the ante-Chapel. A short passage at the head of this stair gives access to the projecting square vice to the west which communicates with the chambers over the narthex and the roofs of the Chapel.

Photographs

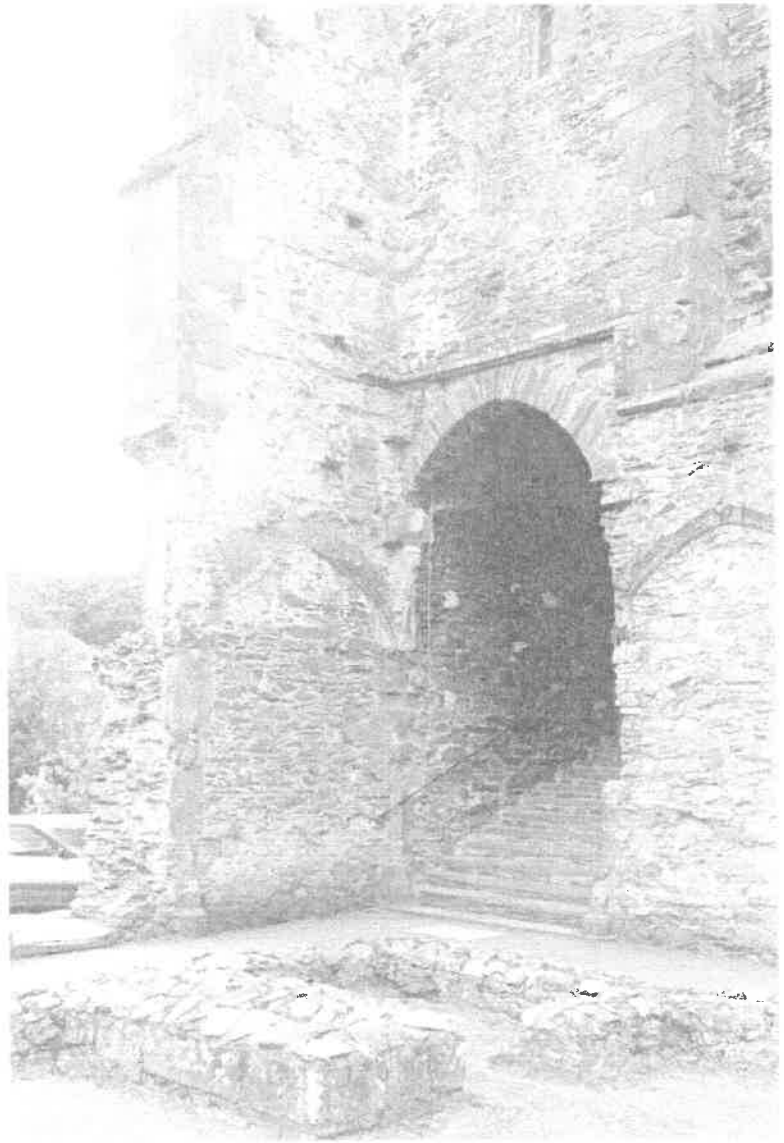


Plate 4. - The NW corner of the cloister with the entry to the narthex stair. The existing arch over the stair was rebuilt or refaced by W.D. Caroe; the medieval arch springer remains at the west. The string-course above the earliest west cloister roof passes above the narthex arch and returns onto the buttress; while the mortar scar of a higher roof can be seen above this, with a pitched line on the wall above the arch. On the west cloister wall the northern jamb of a secondary doorway can be seen in the south elevation; this door appears to have been created after the slighting of the cloister vault.

Photographs



Plate 5. - The east elevation of St Mary's Chapel and cloister. Between the N Transept and the Sacristy tower the upper part of the wall consists of a post-medieval buttress, but the scar of the upper storey of the medieval cloister can be seen against the Sacristy Tower. Two massive corbels set in the east wall of the chapel may have supported a pentice roof or a first floor walkway (or both) providing access from the College to the Cathedral without passing through the Chapel. The arched opening in the east wall of the undercroft (a doorway in the 19th century) was originally a window, so in the fourteenth century there was no direct access to the undercroft from the College, suggesting that this part of the building was related to the cloister and/or cathedral, rather than the functioning of the College, which was already well provided with cellarage. The E window and roof of the Chapel are by A.D.R. Caroe.

Photographs

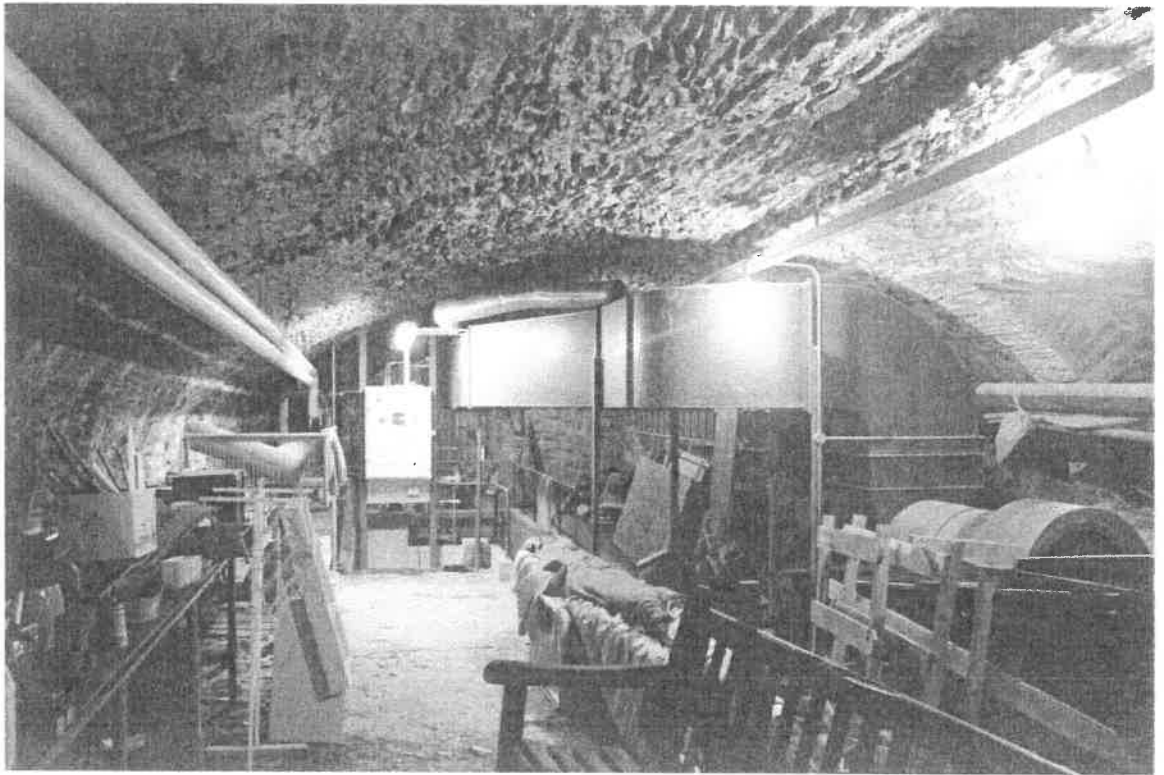


Plate 6. - The western undercroft beneath St Mary's Chapel, now used as a store and housing the heating system and its associated ducting (looking W). Discontinuities in the vaulting probably represent the phases of construction, and the impress of the shuttering of the centreing is visible (as in the Bishops' Palace). The cobbled flooring visible in the foreground appears to run beneath the later cement screed over the western floor.

Photographs

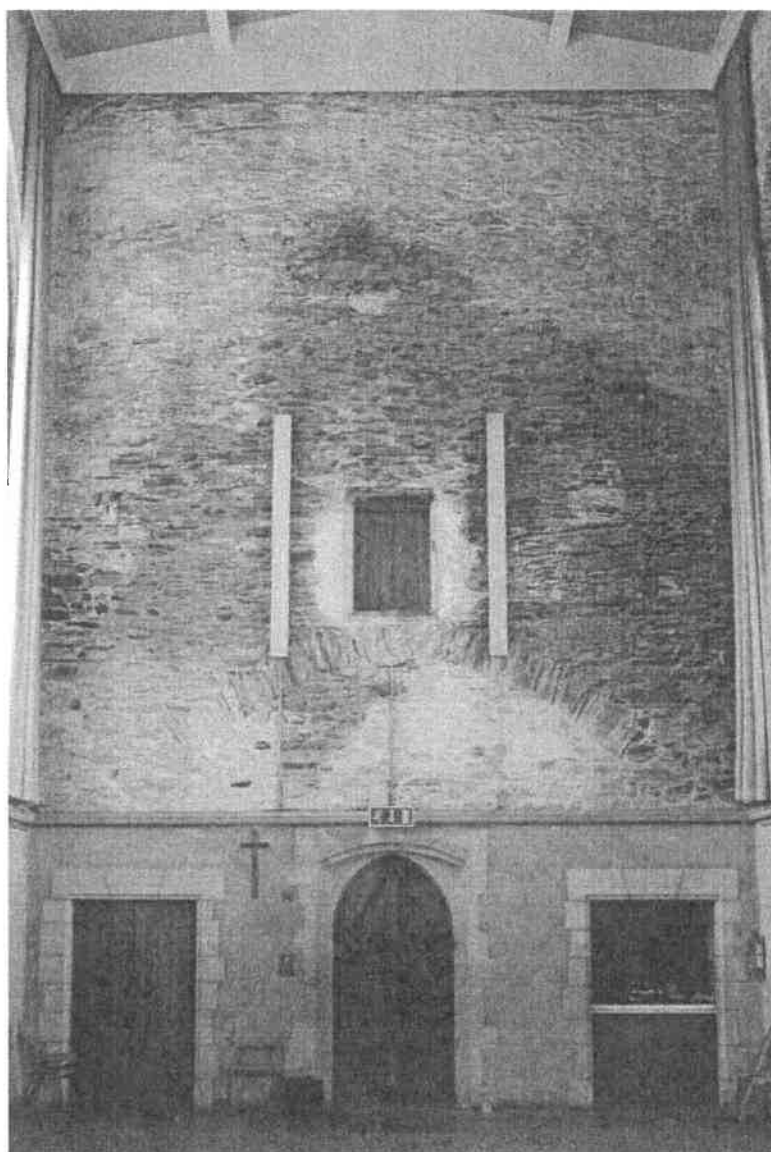


Plate 7. - The interior west end of St Mary's Chapel. The existence of the narthex and the rooms above it prevented the provision of a west window, the square opening being a window into the northern narthex room - perhaps the office of the warden with a secure muniment room in the tower base to the south. The three openings beneath (from the south: to a cupboard, the stair door, and the hatch to the kitchen) all date from A.D.R. Caroe's restoration of the building.

Photographs

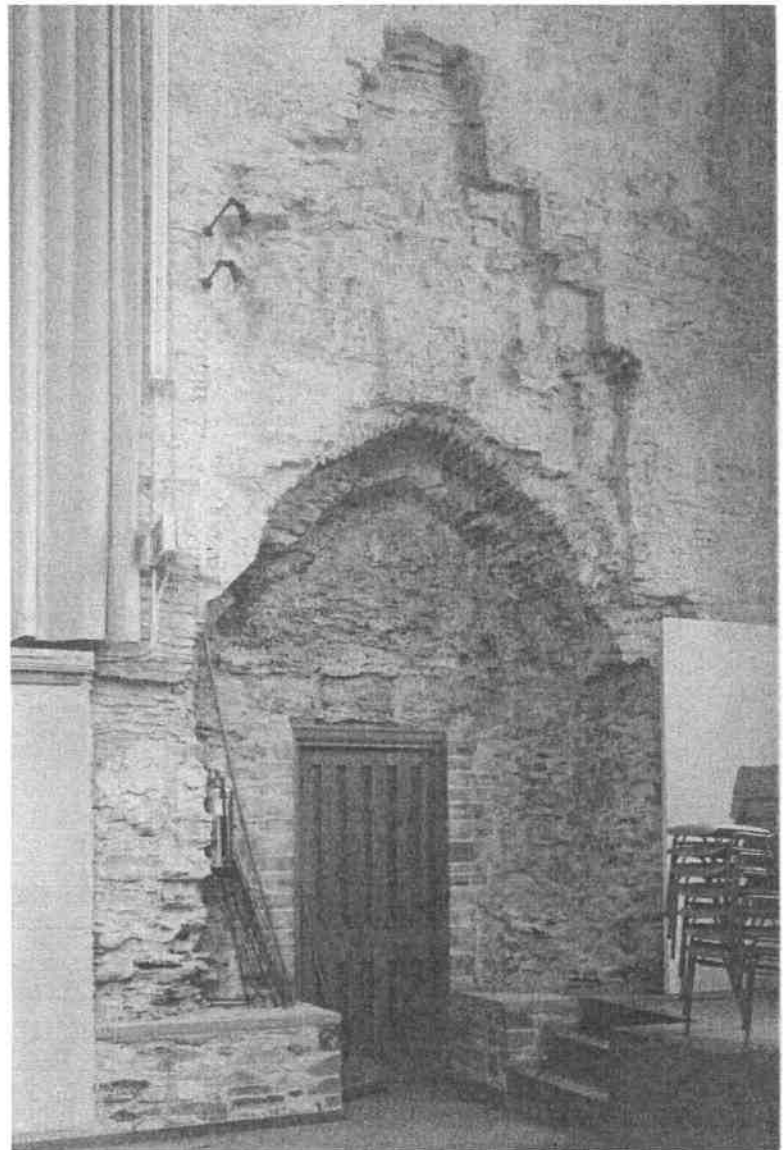


Plate 8. - St Mary's Chapel, north wall of east bay - the scar of the tomb of Bishop Houghton. The medieval floor level was at the height of the existing staging, but even so the tomb was well over 5 metres high with complex canopy work the general form of which can be inferred from the scar left by the removal of the ashlar. In the 1960s a fire escape was cut through the centre of the recess.

Photographs



Plate 9. - St Mary's Chapel, looking ENE, with the recess of Bishop Houghton's tomb just left of centre, and the well preserved consecration cross near the left hand edge.

Photographs



Plate 10. - The south wall of the east bay of the Chapel is unfenestrated, and originally had a doorway to the Sacristy and a lost ashlar feature (probably a piscina) to the east of this. The recess for the latter survives where the ashlars have been robbed out, but at the eastern margin of the base of the recess a fragment of the framing pilaster still remains.

Photographs

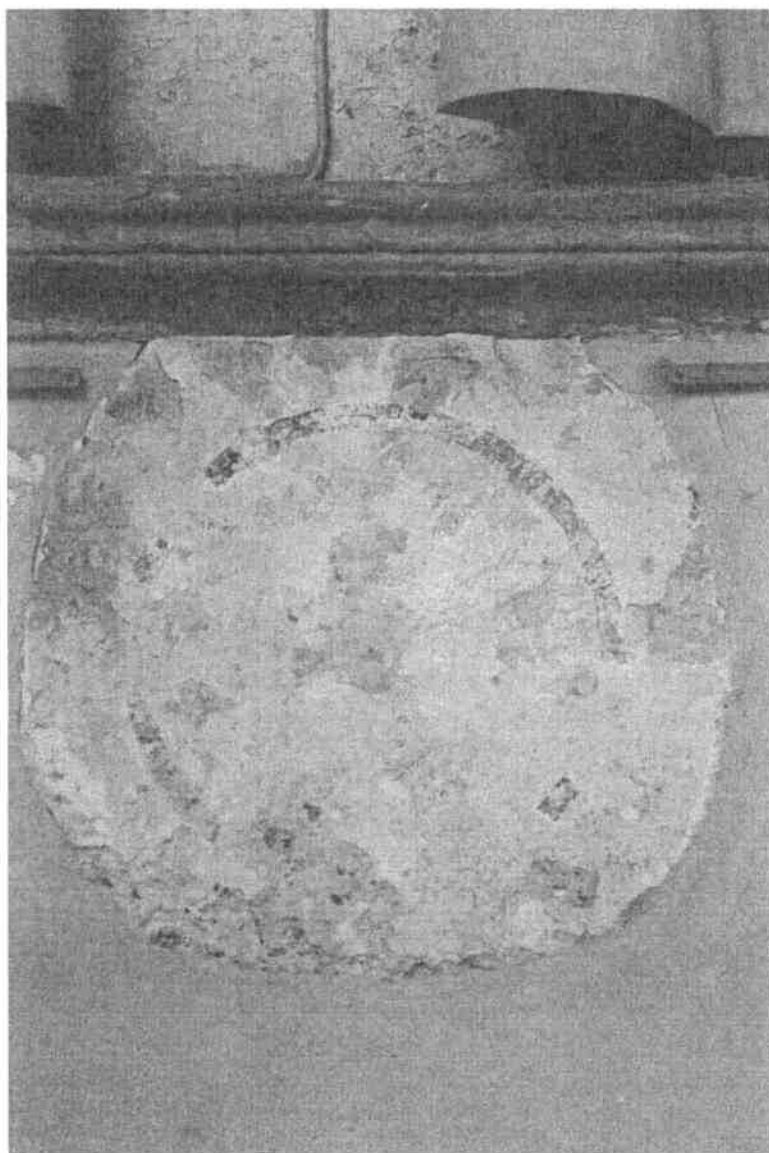


Plate 11. - The best preserved of the fourteenth century consecration crosses on the Chapel block (interior north wall) which retains not only the incised setting-out by which the others can be recognised, but also substantial traces of the painted finish.

Photographs

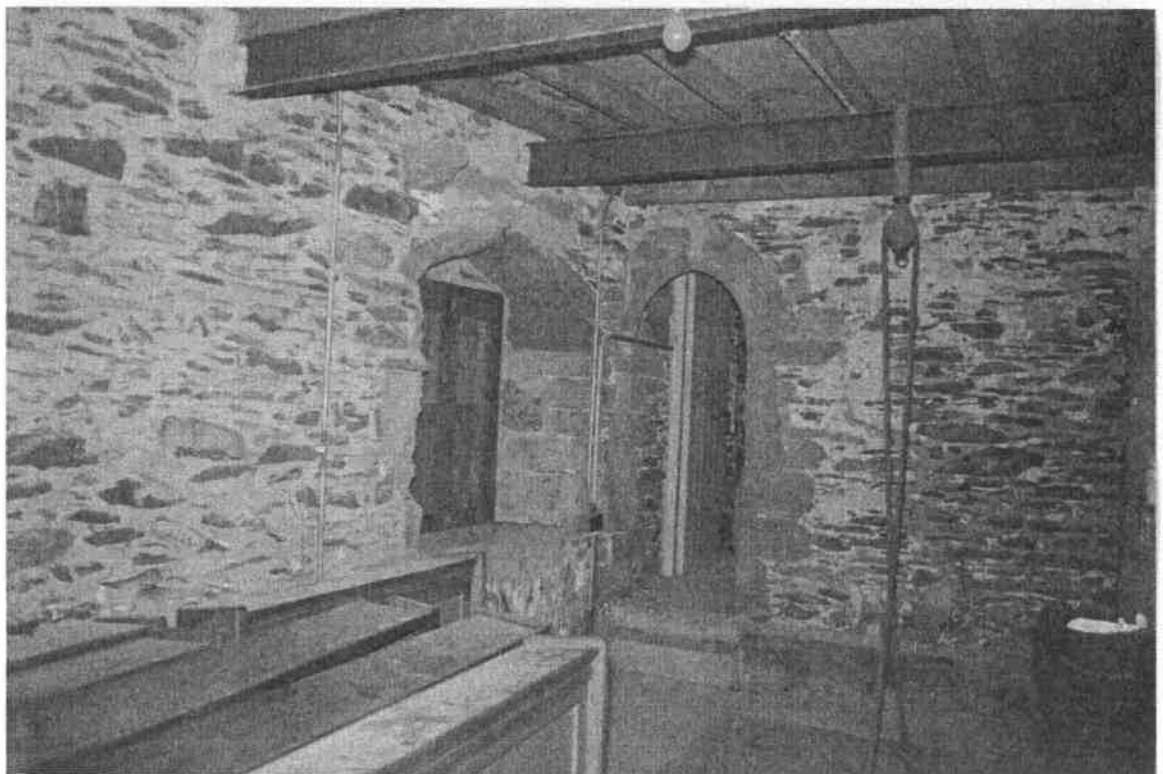
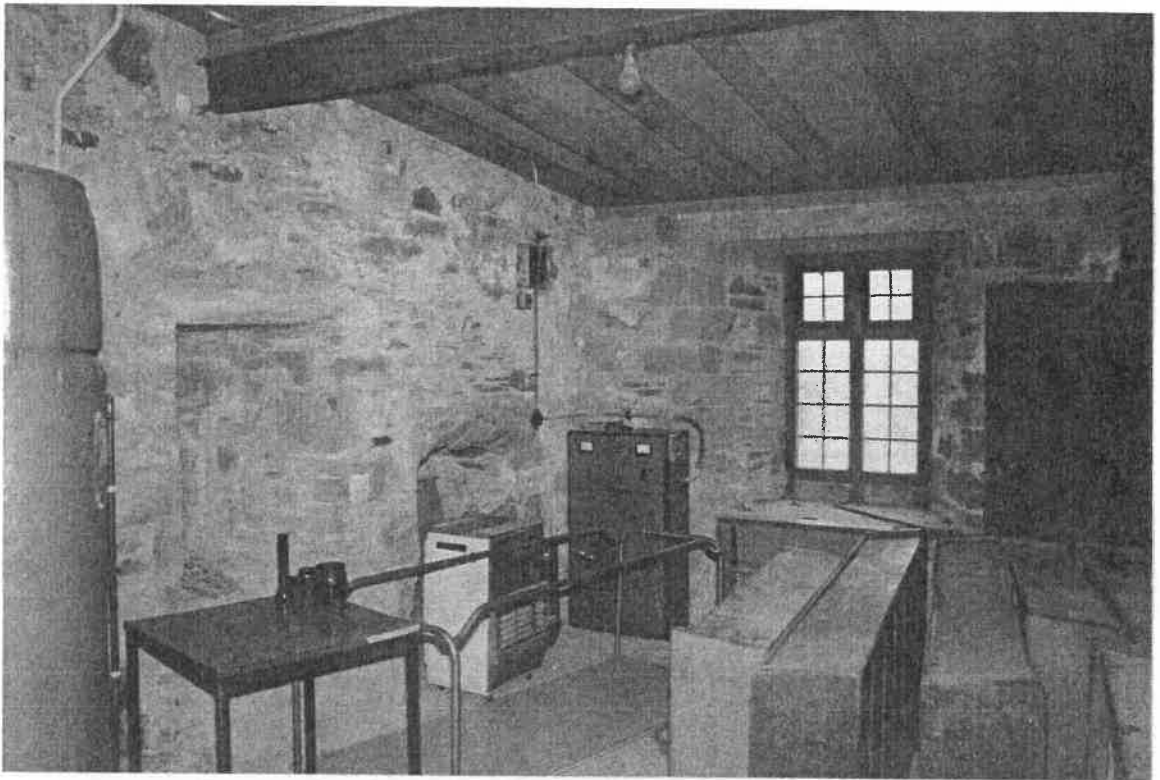


Plate 12A. - [NN/7Jun/16]Northern narthex room looking NNW

Plate 12B. - [NN/7Jun/27]Northern narthex room looking SSE

Photographs



Plate 13. - Southern room above the narthex of St Mary's Chapel, looking SW, with concrete floor and roof by Caroe. One of the original constructional putlog holes can be seen at the western edge.

Photographs

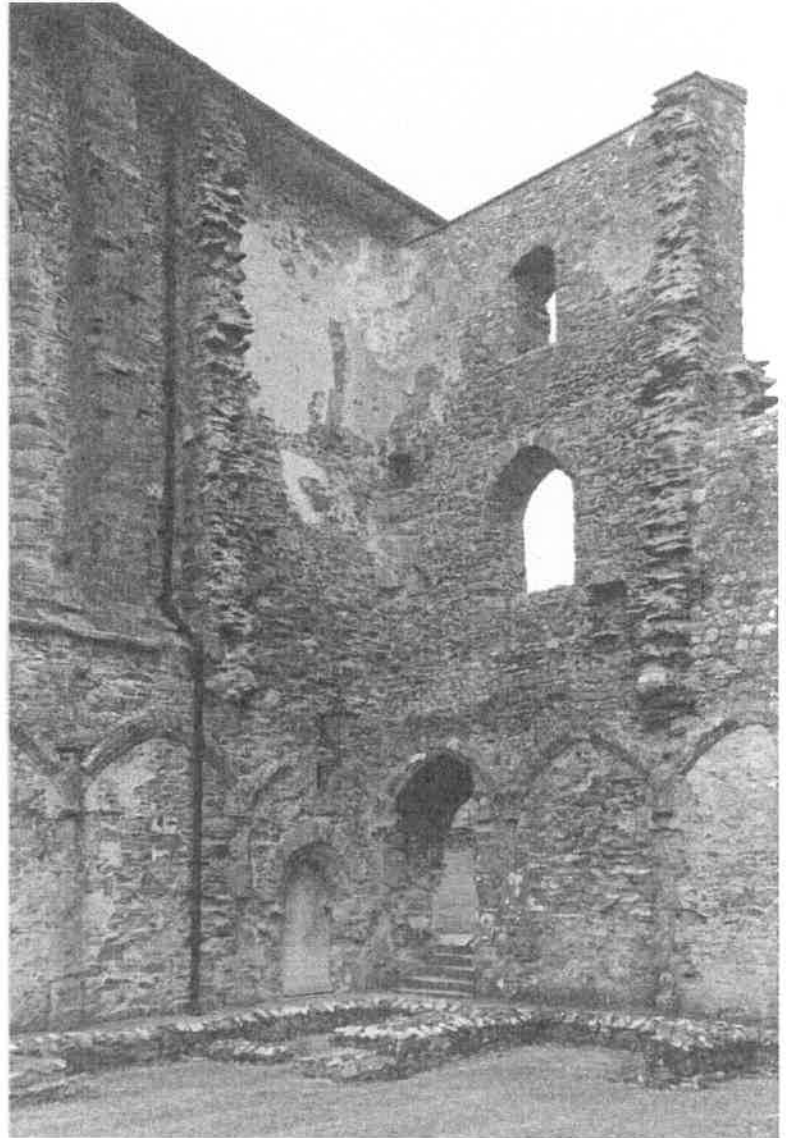


Plate 14. - The 'Sacristy Tower' at the NE corner of the cloister. The vertical scars of the walls over the cloister walks are clearly visible, and must have been carried on relieving arches similar to those carrying the tower over the narthex stair. The southward facing scar at the south end of the east wall indicates that the east cloister was of two storeys to the south of the Sacristy Tower, and may have incorporated a first-floor access into the North Transept, since there are redundant corbels within the latter at this height. The door in the north cloister leads to the undercroft of St Mary's, that in the east walk leads to the NE churchyard and the College.

Photographs

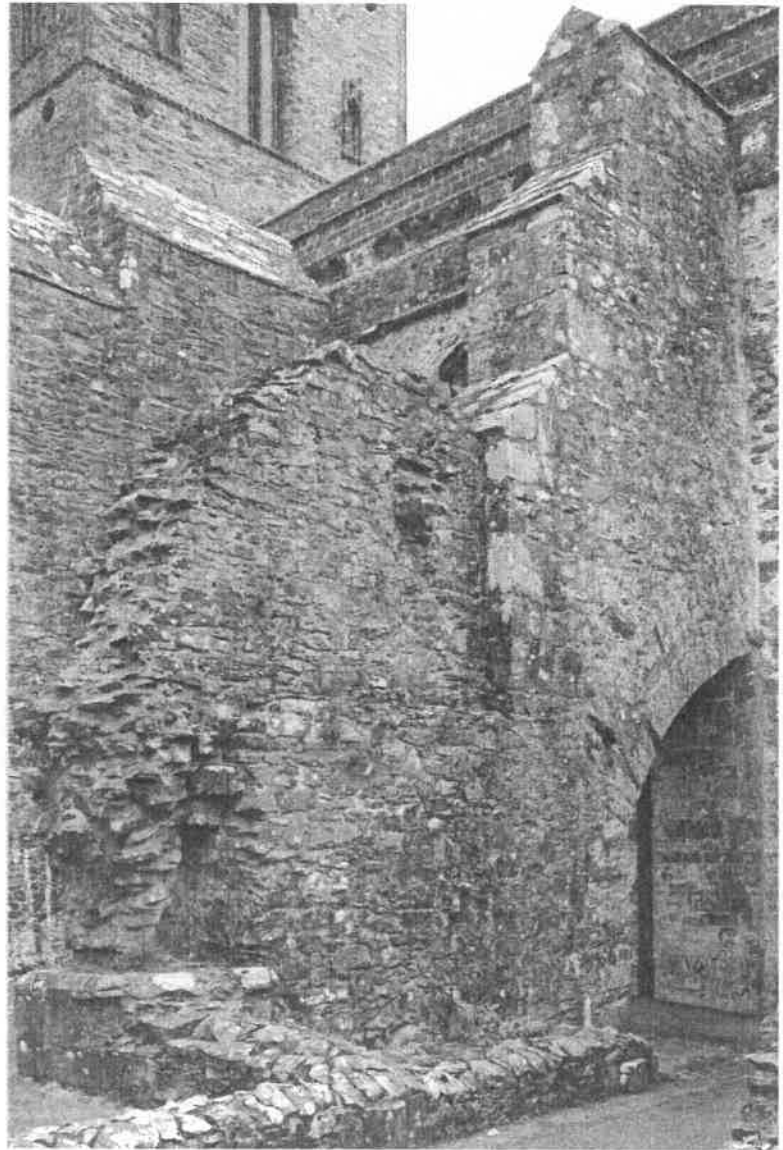


Plate 15. - West cloister, junction of the later rebuilding with the nave buttress, looking SE. The phasing here is difficult to establish, but the lower part of the nave buttress oversails the projecting buttress of the west cloister walk, and a second phase of walling has been superimposed on this, the latter incorporating a wall running E-W at first floor level just north of the face of the nave buttress. The projecting stub of the latter can be seen in this view.

Photographs



Plate 16. - West cloister, junction with western nave buttress. The remains of two shafts of the wall arcade remain, the southern of these later replaced by the springing of a low arch on the same line as the first floor wall stub on the buttress to the east.

Photographs

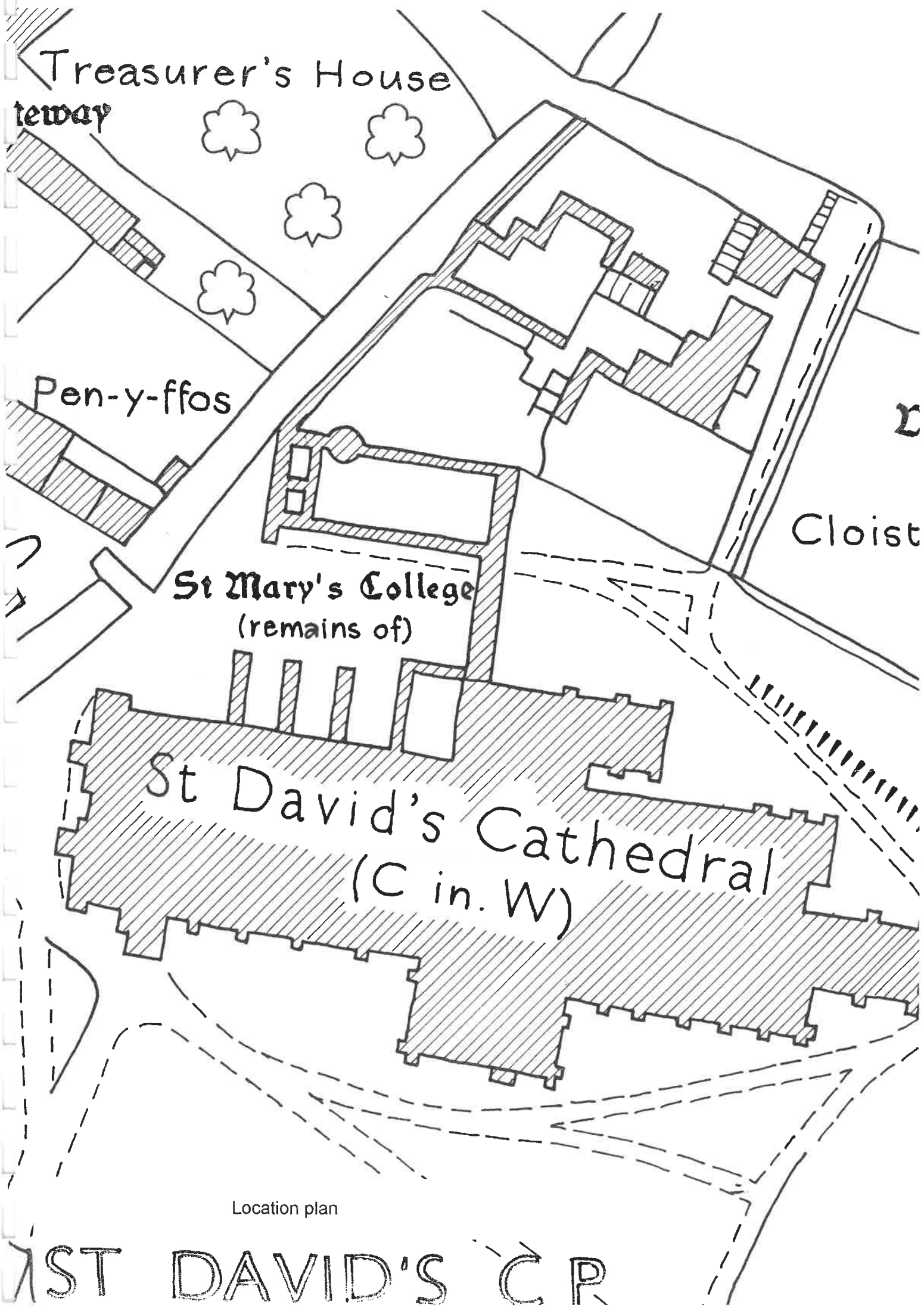


Plate 17. - Test Pit 3 (1998) against the east face of the west cloister pentice wall immediately north of the second nave buttress from the west exposed a massive wall built on dark maroon clay natural.

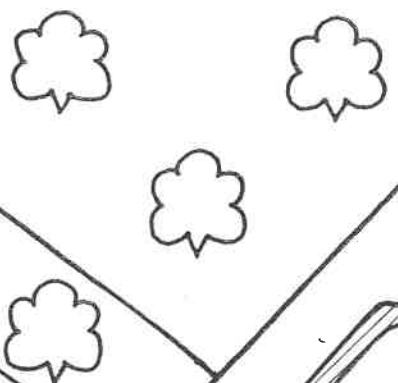
Photographs



Plate 18. - Test Pit 4 (1998) against the north wall of the cathedral exposed a well finished ashlar wall with a fine plinth well below the level of the nave door immediately to the west. The water-level at the base of the pit is well above the bottom of the foundation, which rests on gravel and loose stone natural.



Treasurer's House
teway



Pen-y-ffos

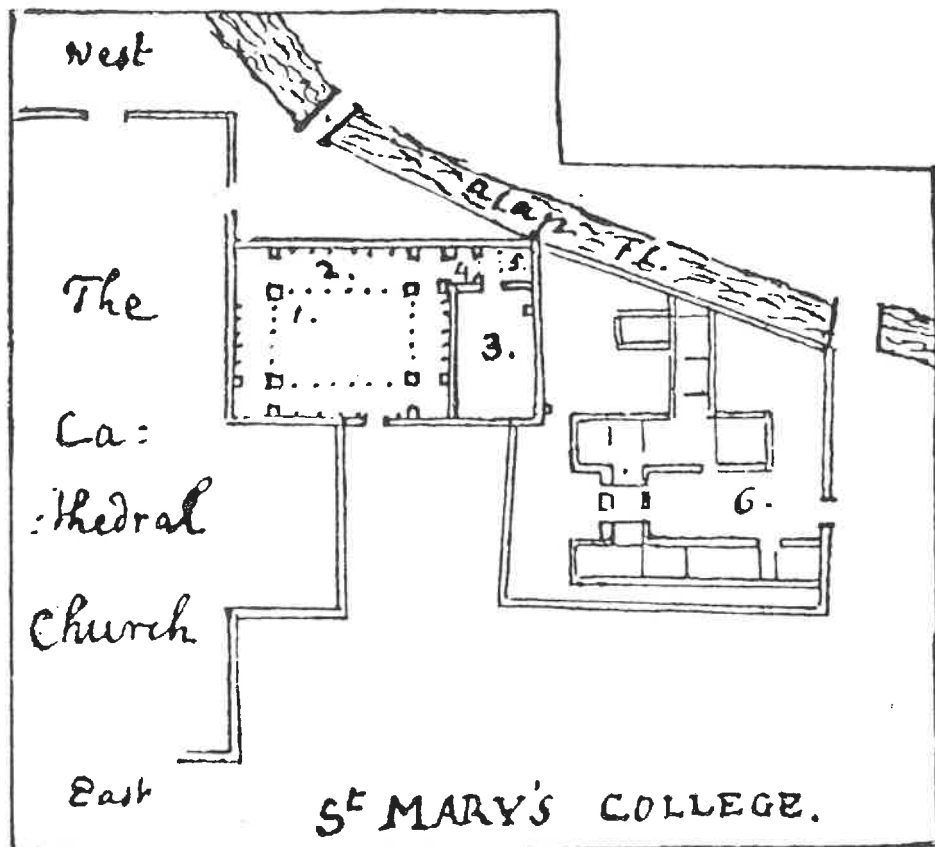
St Mary's College
(remains of)

Cloist

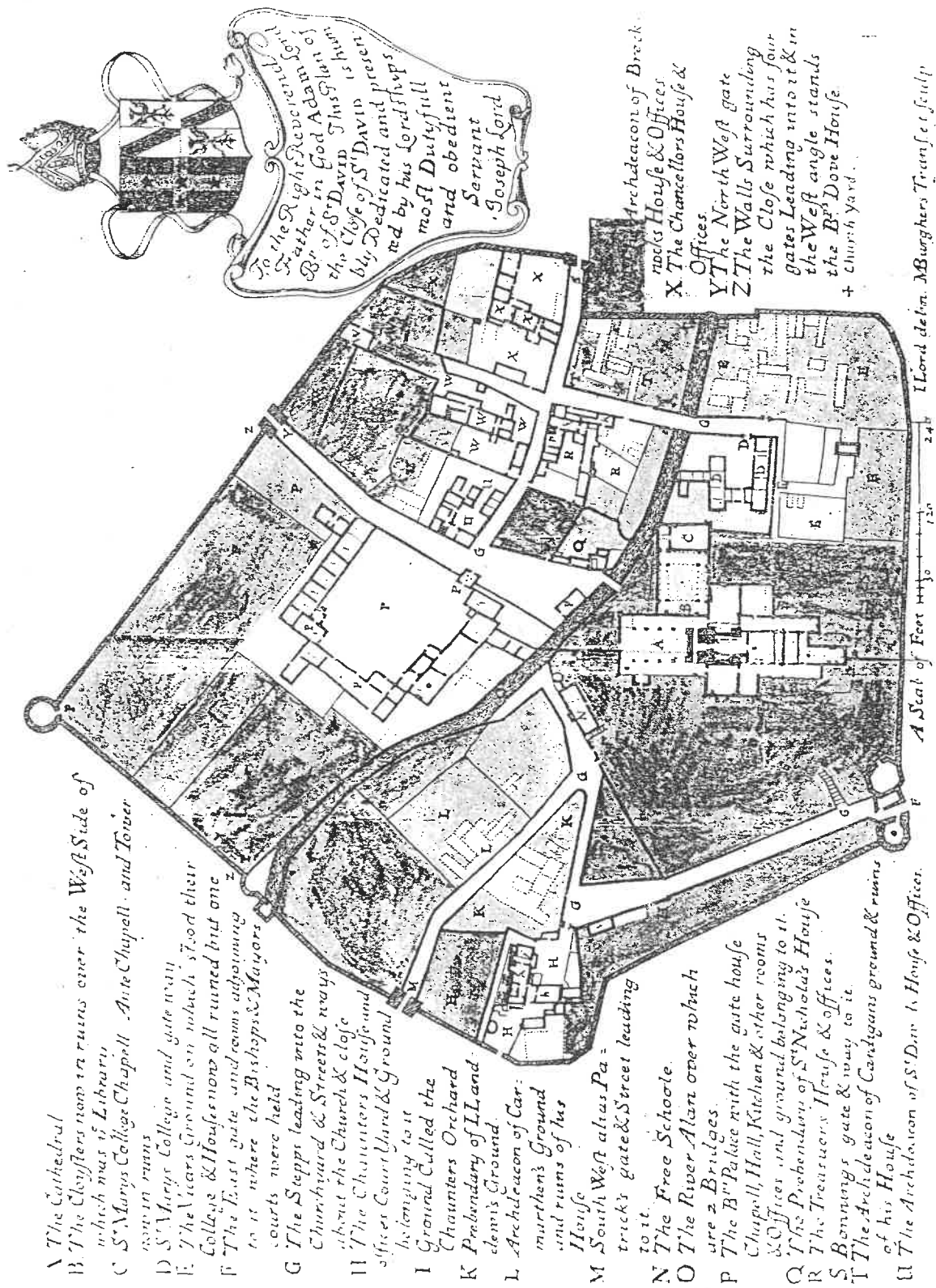
St David's Cathedral
(C in. W)

Location plan

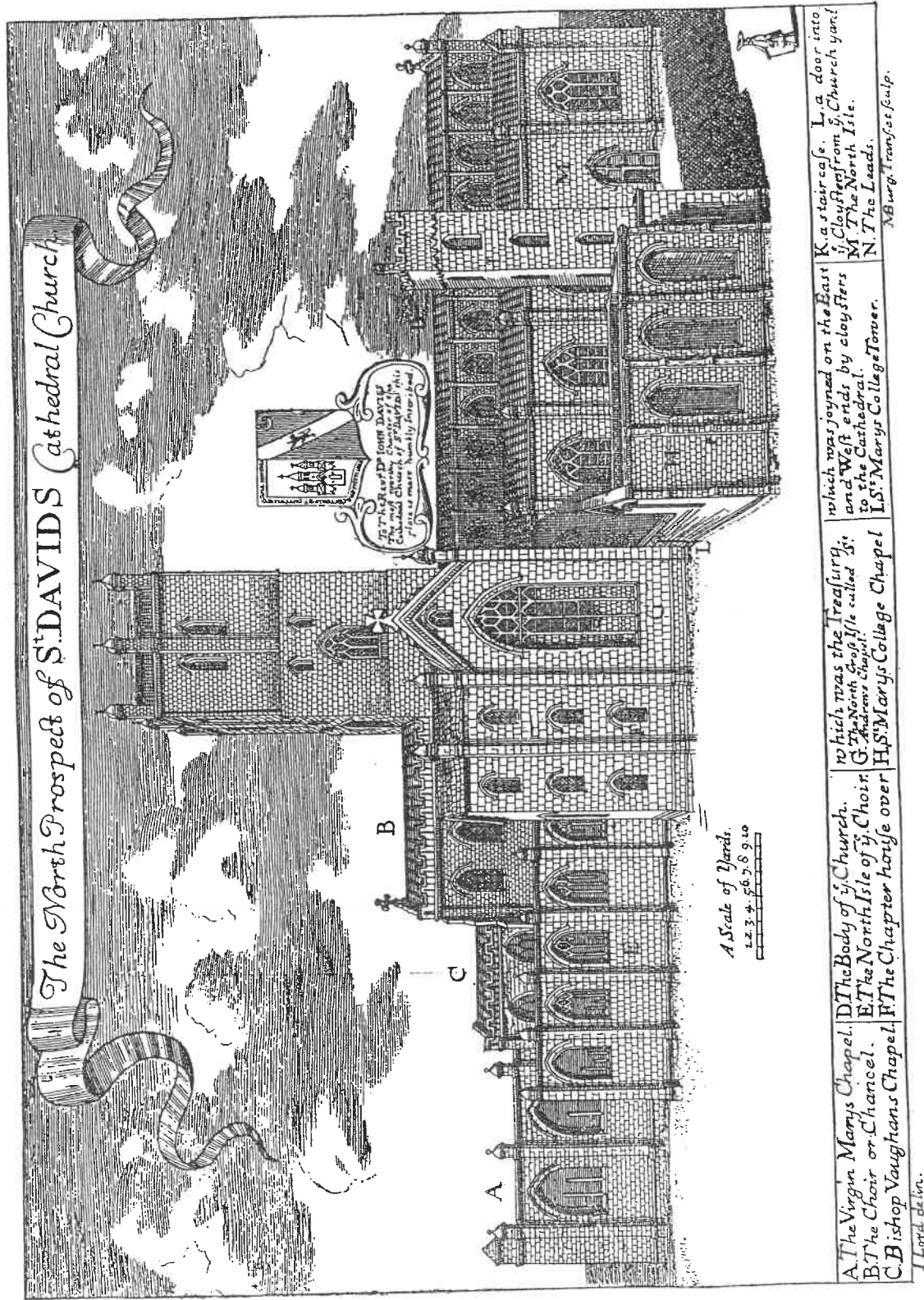
ST DAVID'S C R



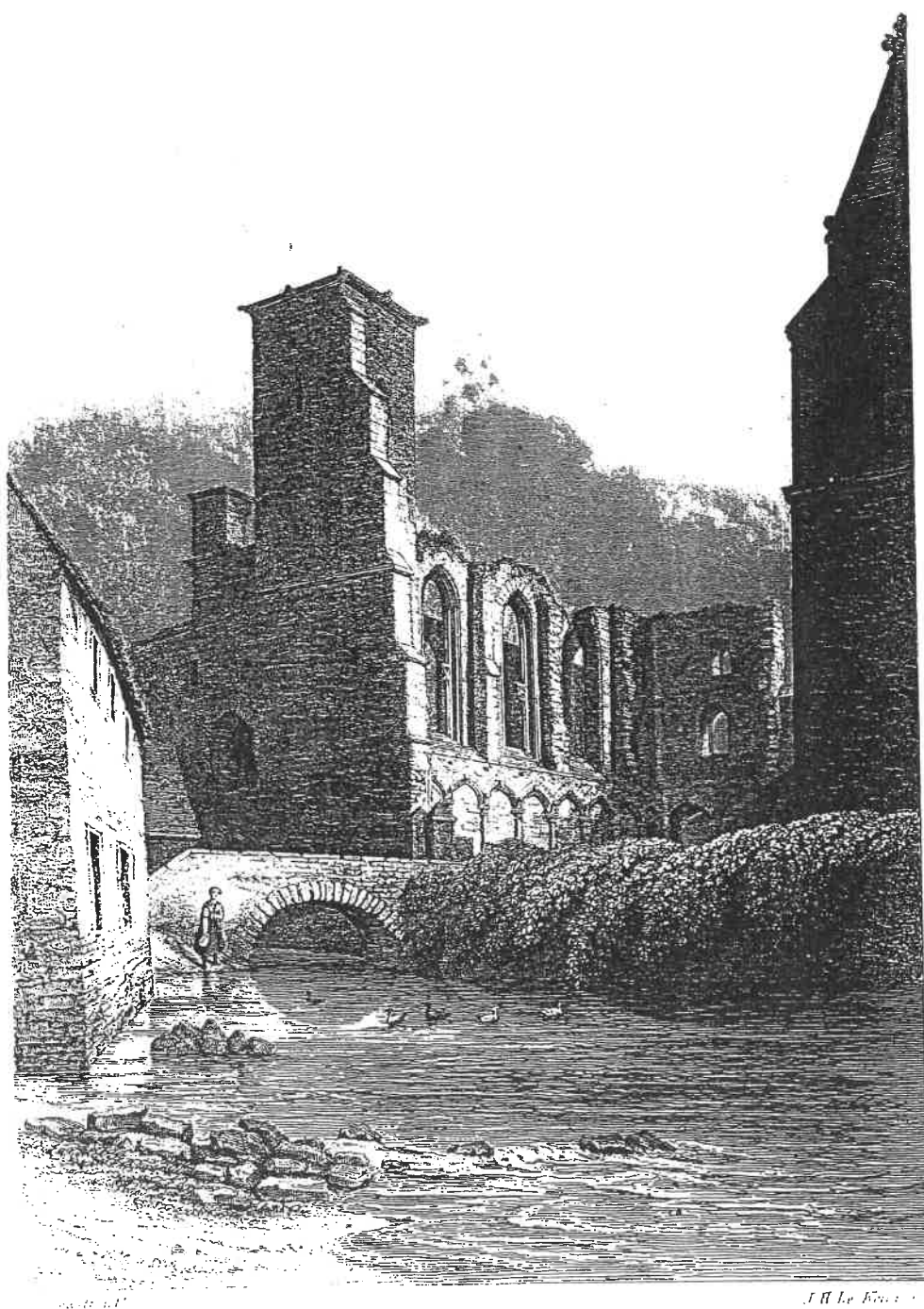
Joseph Lord's plan of St Mary's College - 'an accurate description of the ruins thereof, as remaining, A.D. 1720' included in *Menevia Sacra*.



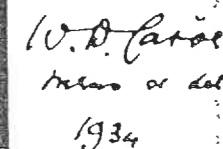
Lord's plan of the close, c.1720.



Joseph Lord's [sadly inaccurate] rendering of the north side of St Mary's chapel, reproduced in Menevia Sacra



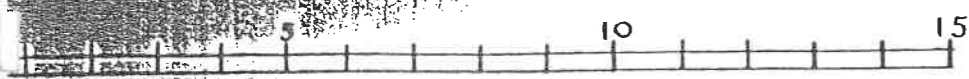
Jewitt/Le Keux's engraving of St Mary's Chapel for Jones and Freeman (1854)



DAVIDS CATHEDRAL SUGGESTED FORM OF CLOISTER

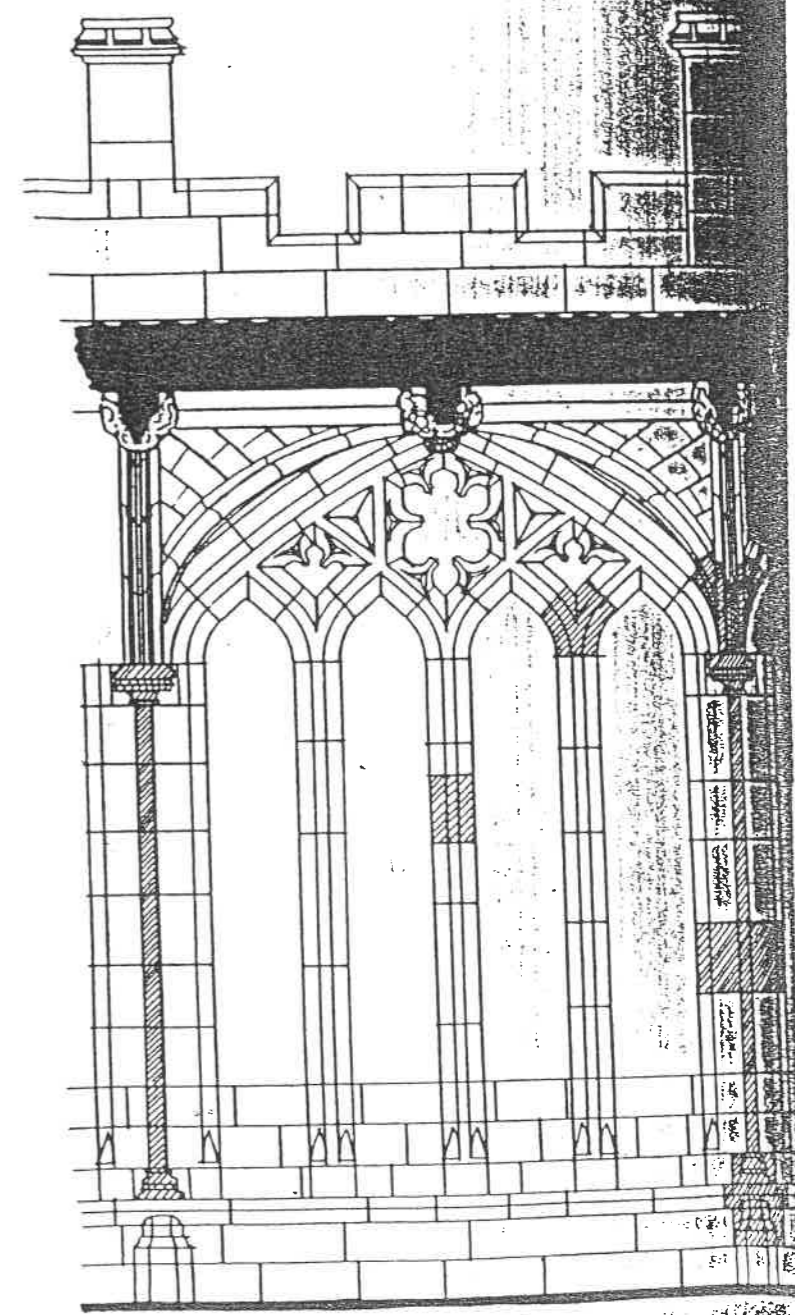
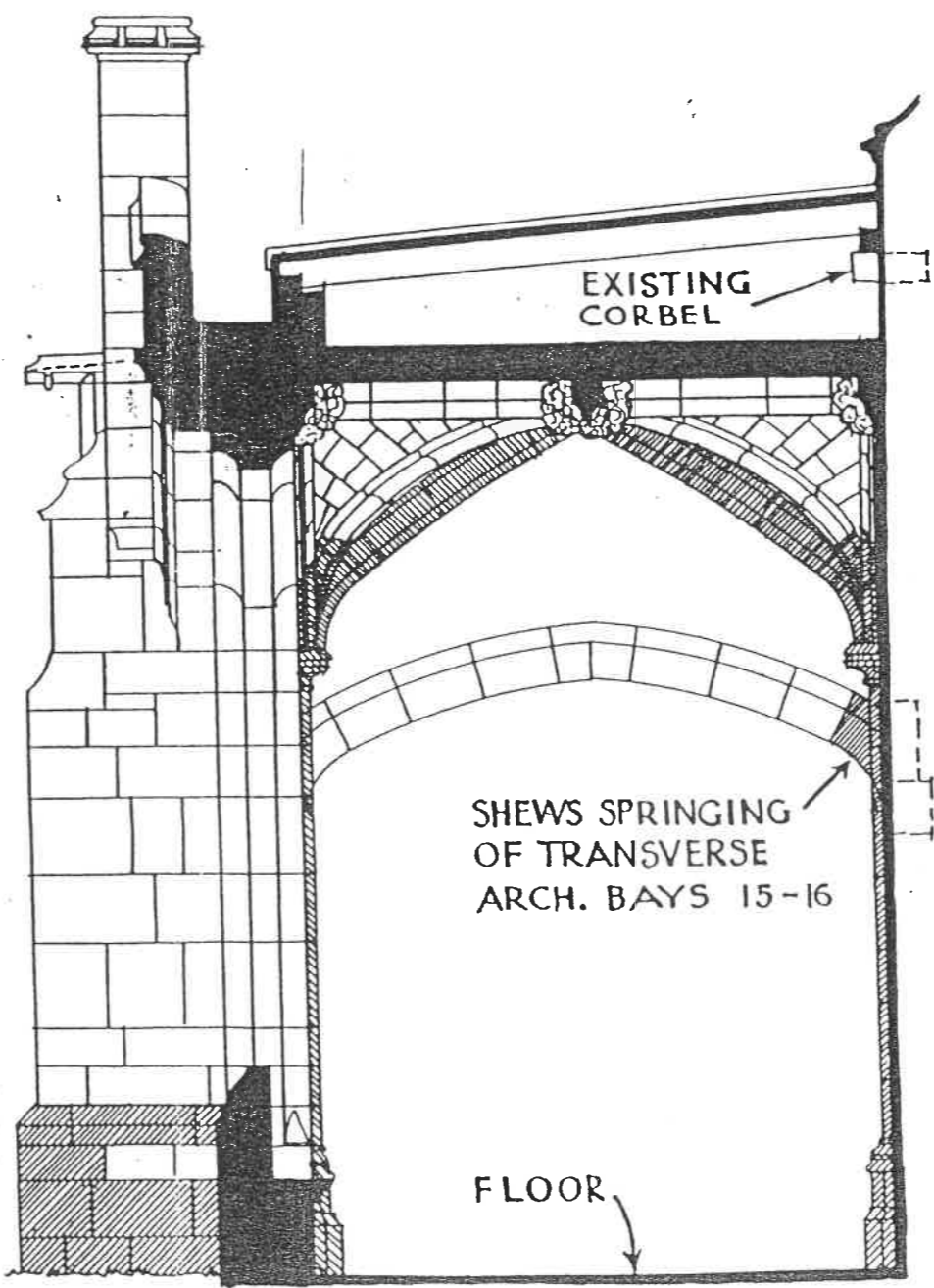
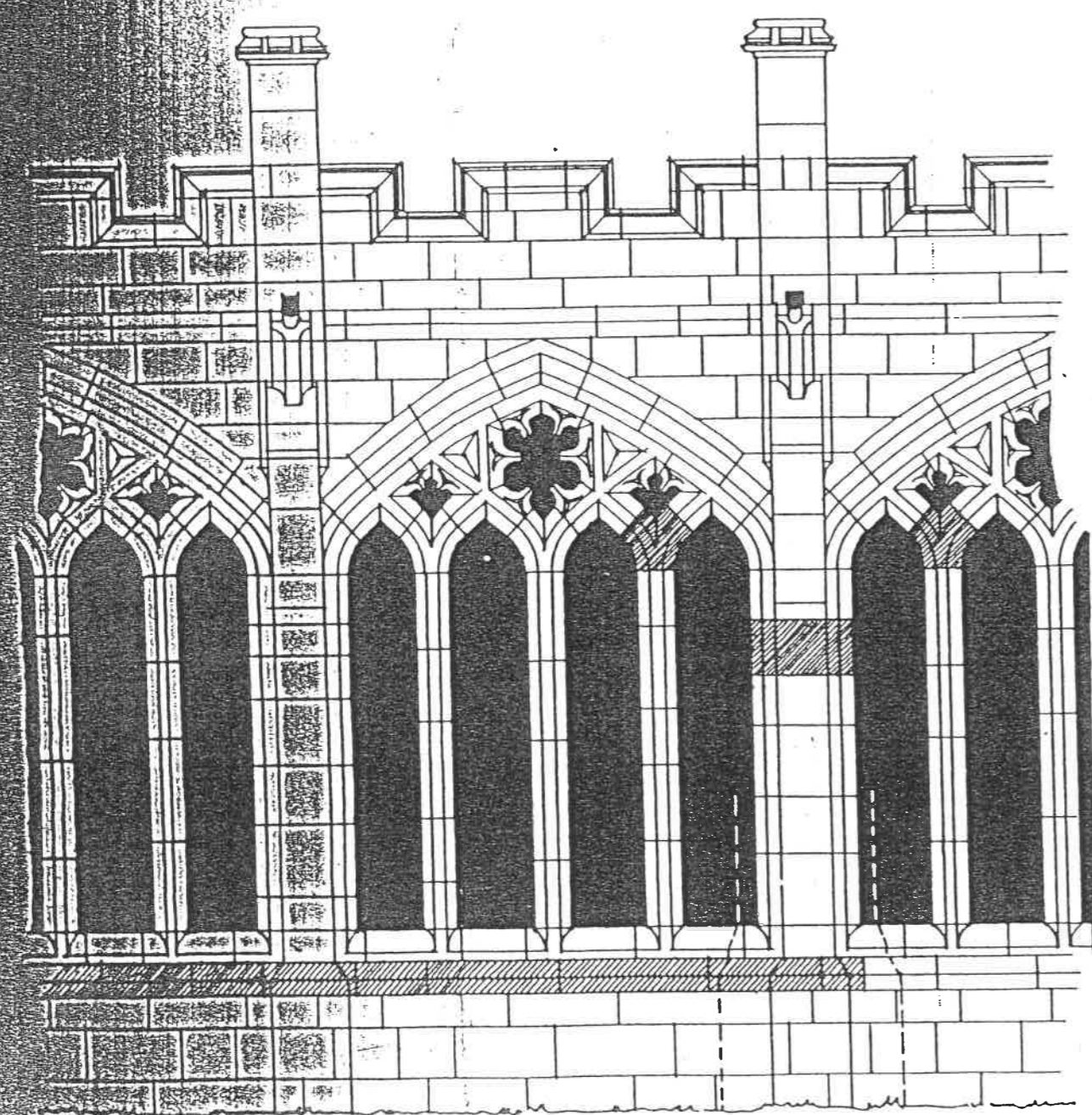
W.D. Caroe's reconstruction of the cloisters based on fragments recovered from his 1930s excavation

PLATE



SCALE OF FEET

HATCHED PORTIONS EXIST AS EVIDENCES



THERE IS NO INDICATION HOW THE WIDE BUTTRESSES OF EAST & WEST RANGES WERE COMPLETED THEY ARE SHEWN DOTTED

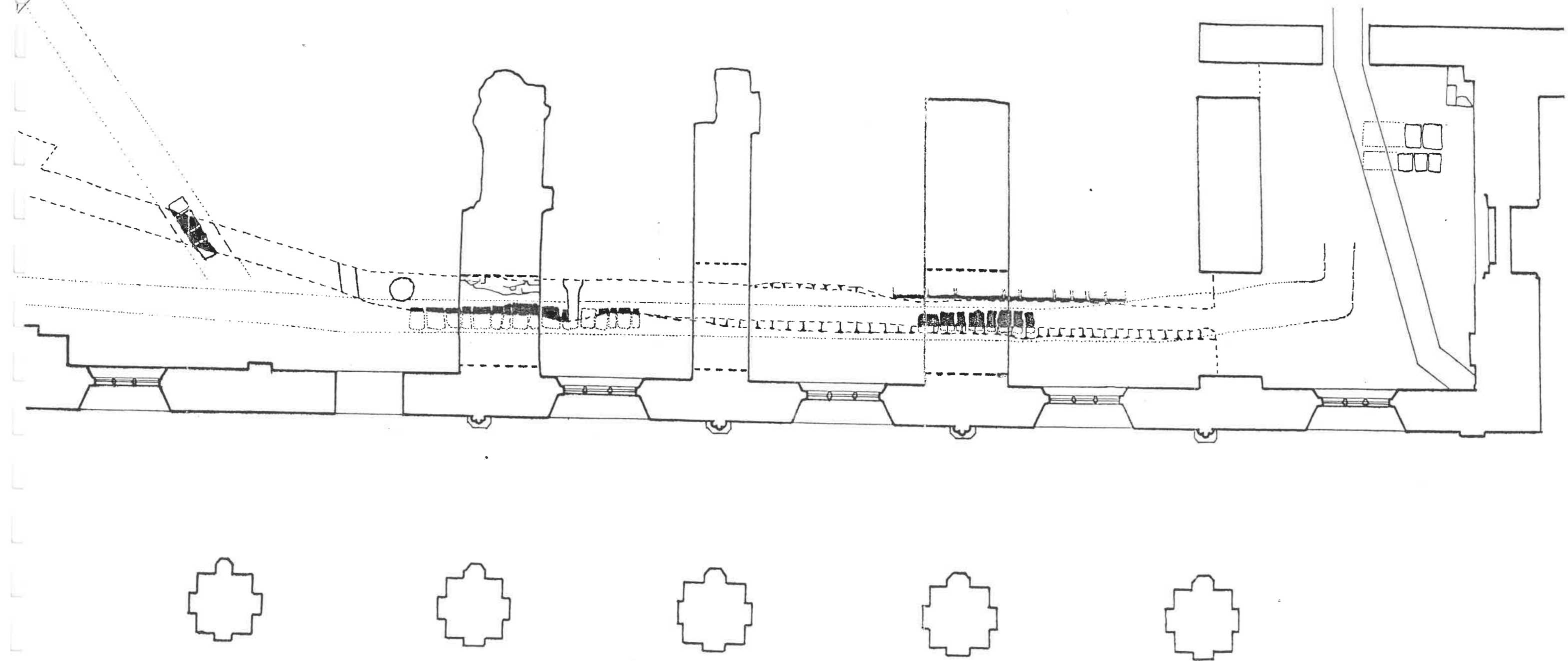
EXTERNAL ELEVATION.
NORTH RANGE.

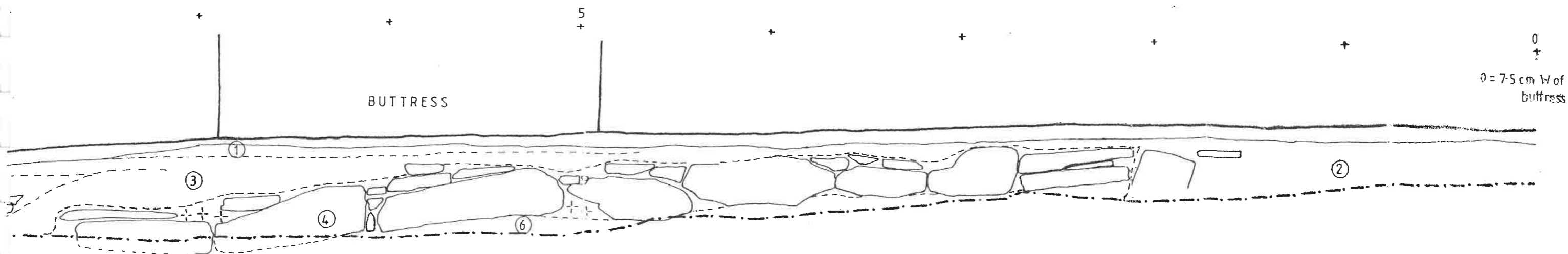
SECTION

INTERIOR LOOKING OUT

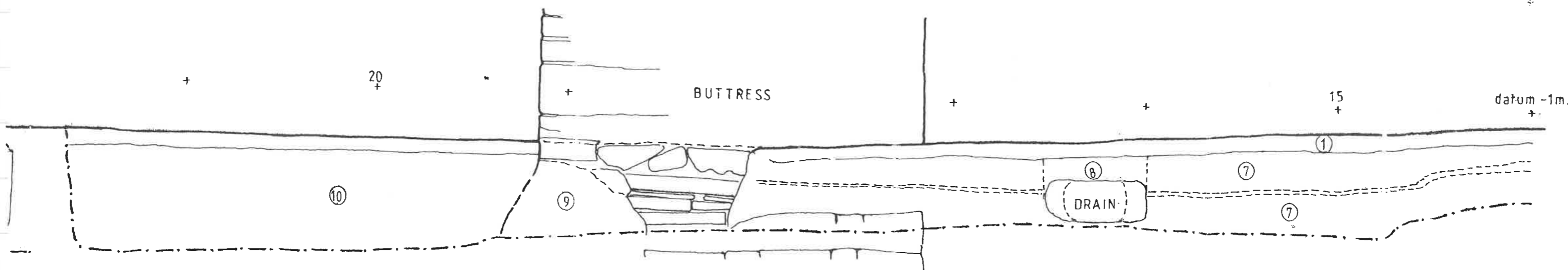
W.D. Caroe
1933 - 1934

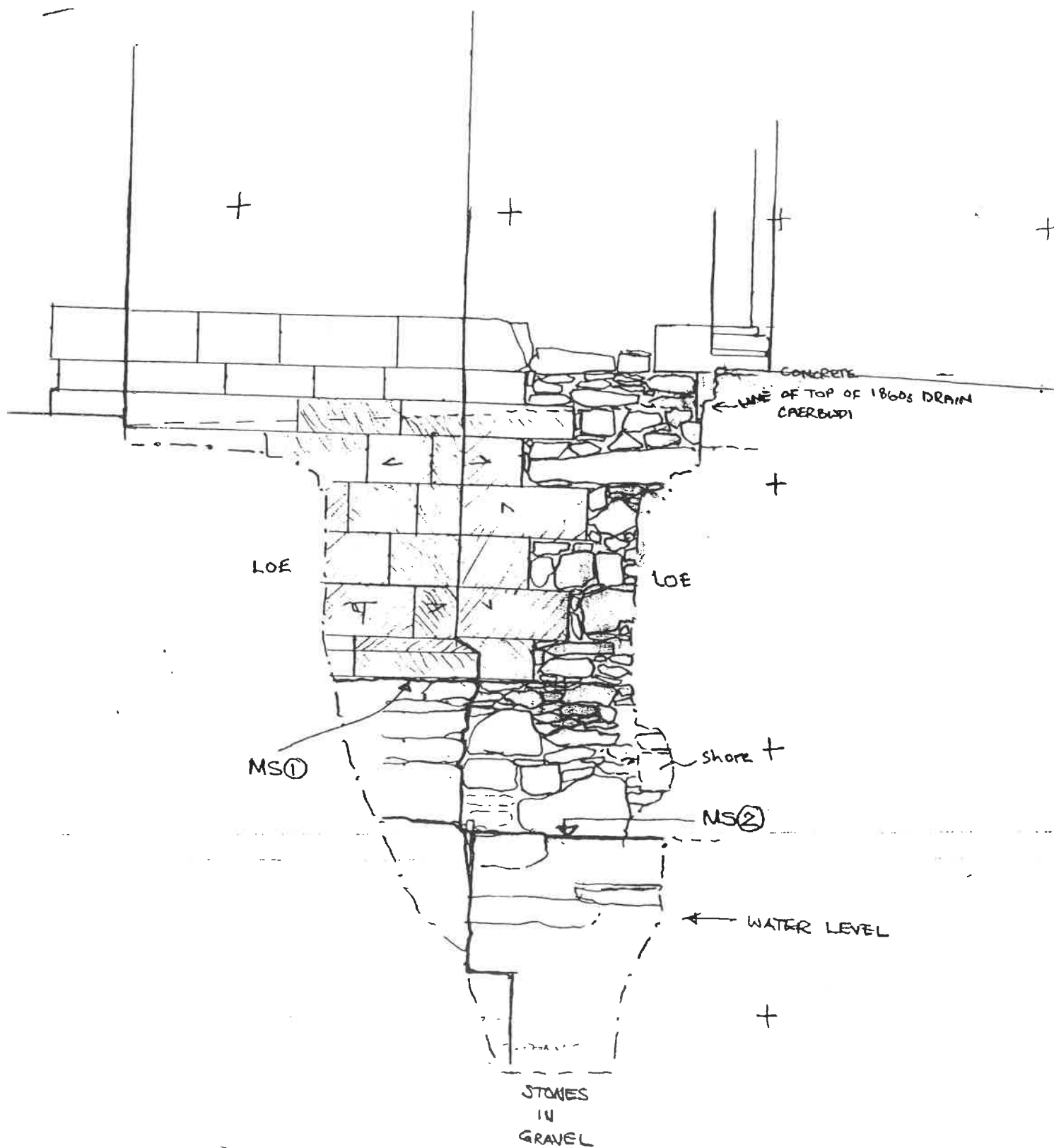
Plan of the features revealed by the excavations for the Choir Room services in 1992. The capstones beneath the north nave buttresses belong to Scott's conduit of the 1860s-80s - immediately north of the eastern capstones the southern face of a shallow wall footing was encountered, possibly the foundation for a slight timber structure completing the circuit of the cloisters. An earlier conduit runs north-west to an outfall beside Pen y Ffoss bridge.



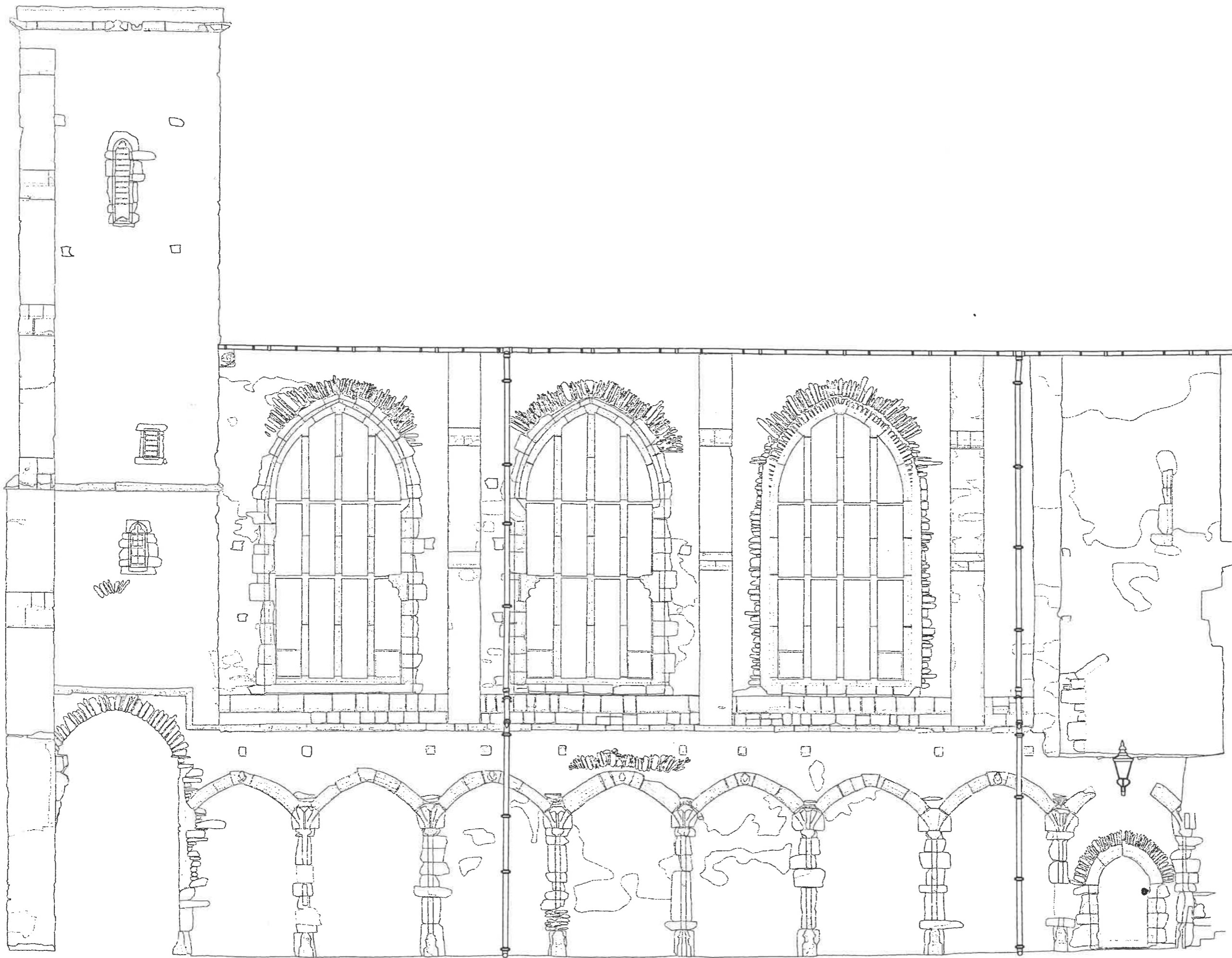


Choir Practice Room excavation 1992 - The wall face revealed on the northern edge of the pipe trench in the vicinity of the second nave buttress from the east - section looking north.





Site drawing from the 1998 test pit excavations: Pit against the north wall of the nave north aisle, immediately east of the north nave door. [Scale 1:20]



49.00m

47.00m

45.00m

43.00m

41.00m

39.00m

37.00m

35.00m

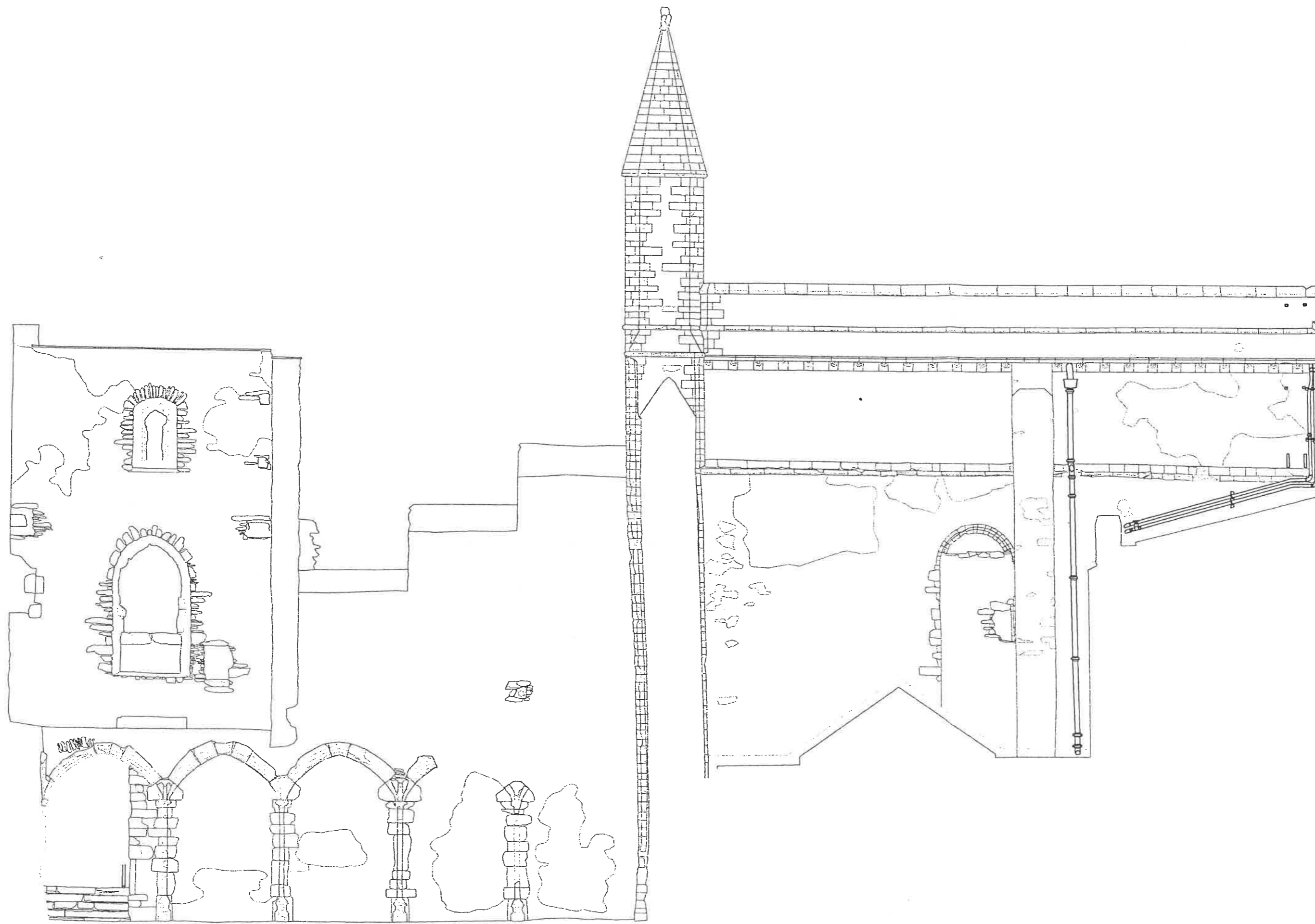
33.00m

31.00m

29.00m

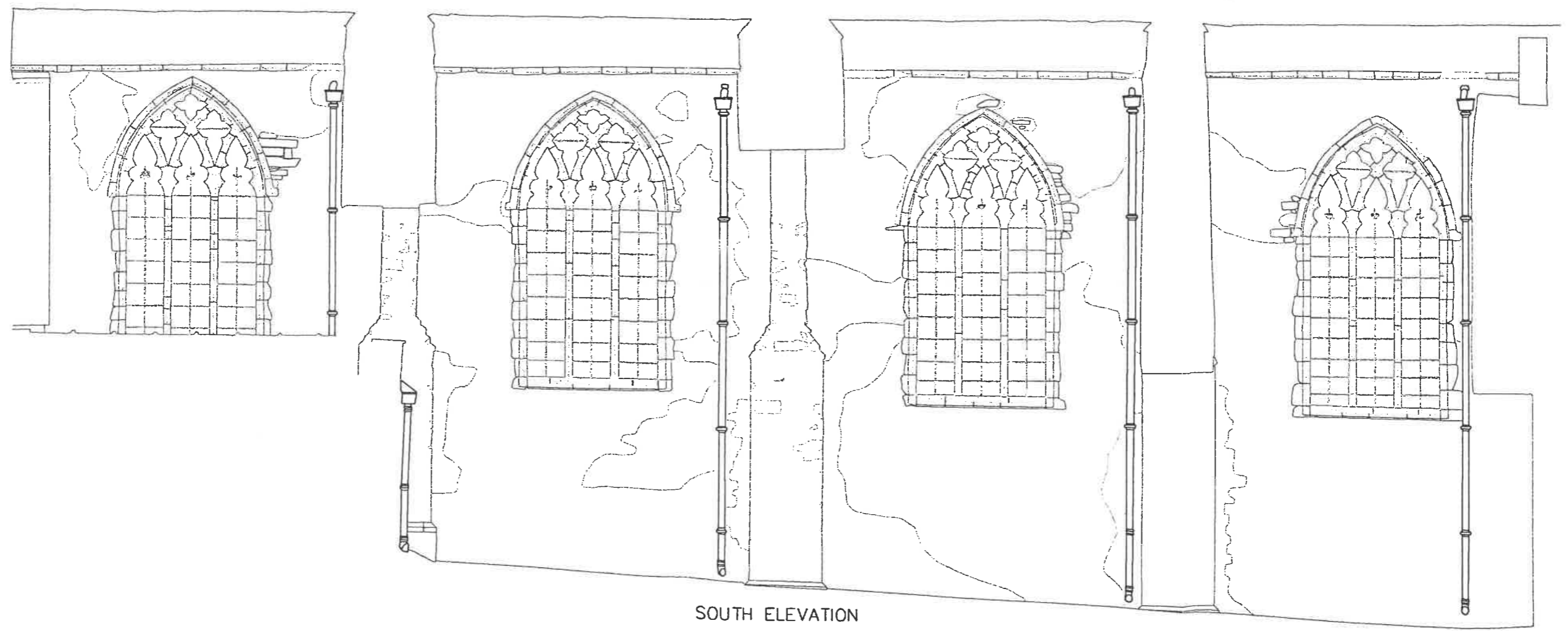
27.00m

47.00m
45.00m
43.00m
41.00m
39.00m
37.00m
35.00m
33.00m
31.00m
29.00m
27.00m



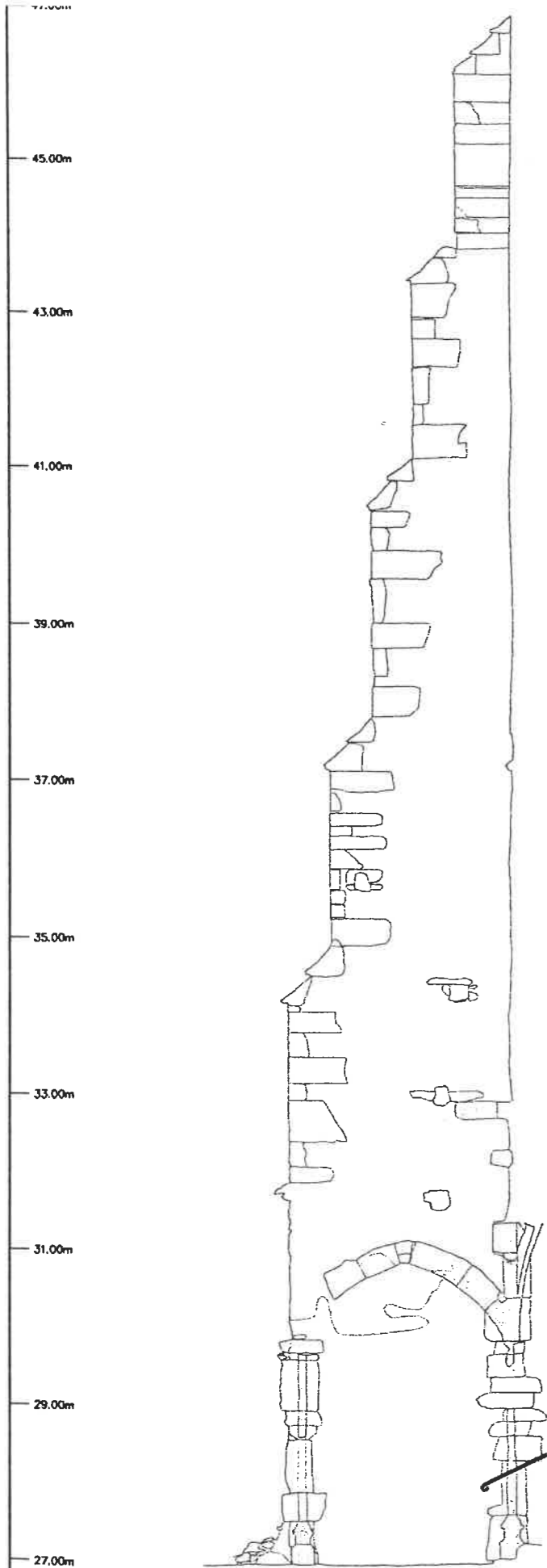
EAST ELEVATION

45.00m
43.00m
41.00m
39.00m
37.00m
35.00m
33.00m
31.00m
29.00m
27.00m

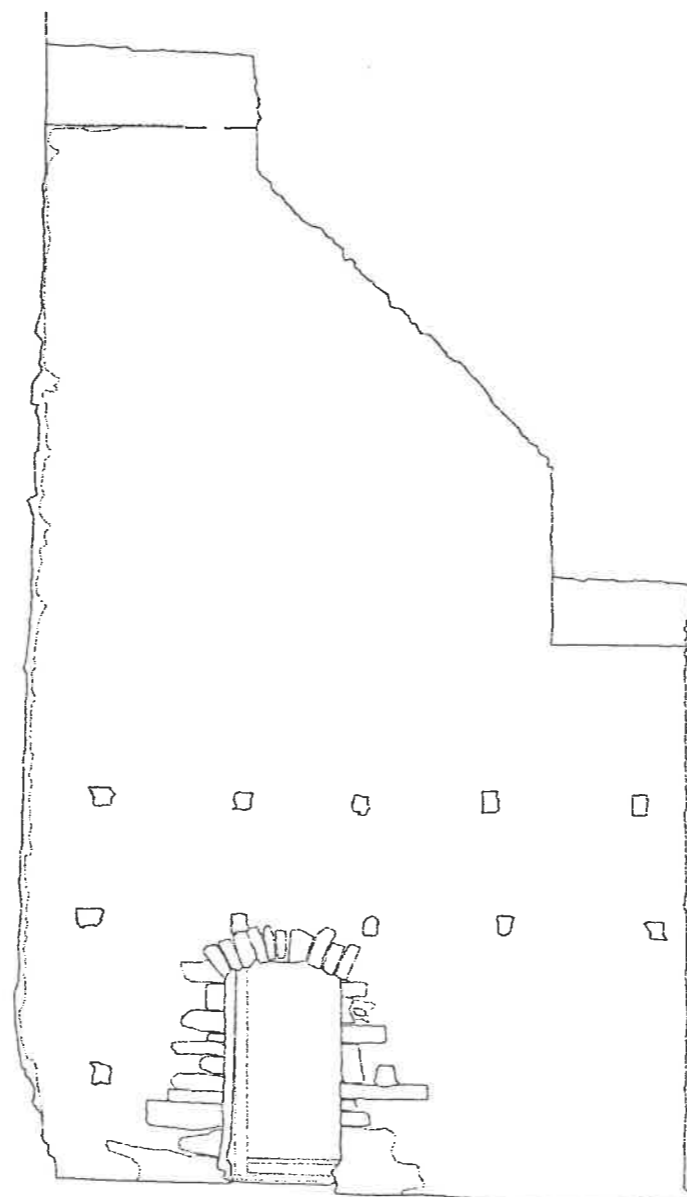


SOUTH ELEVATION

DATUM 25.00m A.O.D.



NORTH ELEVATION BUTTRESS
EAST FACE



EAST ELEVATION BUTTRESS
NORTH FACE