Halesowen Abbey

A report on building recording and fieldwork, 1987–95

by Stephen Litherland and Derek Moscrop, with a contribution by Lynne Bevan



Halesowen Abbey: A report on building recording and fieldwork, 1987-95

Contents

List of Figures	ii
List of Plates	
List of Historical Engravings	ii
INTRODUCTION	
Acknowledgements	
THE MONASTIC BUILDINGS	
HISTORICAL AND DOCUMENTARY BACKGROUND	
BUILDING RECORDING	
Structure 1	
Description	10
South wall	
East wall	
North wall	
West Wall	
Roof	
Western section	
Eastern section	
Stonework	
Interpretation and phasing	
Phase 0	
Phase 1	
Phase 2	
Phase 3	
Phase 4	
Phase 5	
Dating	
Discussion	
Structure 2	
Description	
Interpretation and phasing	
Structure 3	
Description	
Interpretation and phasing	
Structure 4	
Description	
Interpretation and phasing	
THE ABBEY PRECINCTS	
THE ABBEY GRANGES	
CONCLUSIONS	
A DIMENIALLY BALLIAND LINES	an.
APPENDIX, Medieval Tiles	40
DUPPEDENCE	
REFERENCES	41
INDEX	42
	_
PLATES	

List of Figures

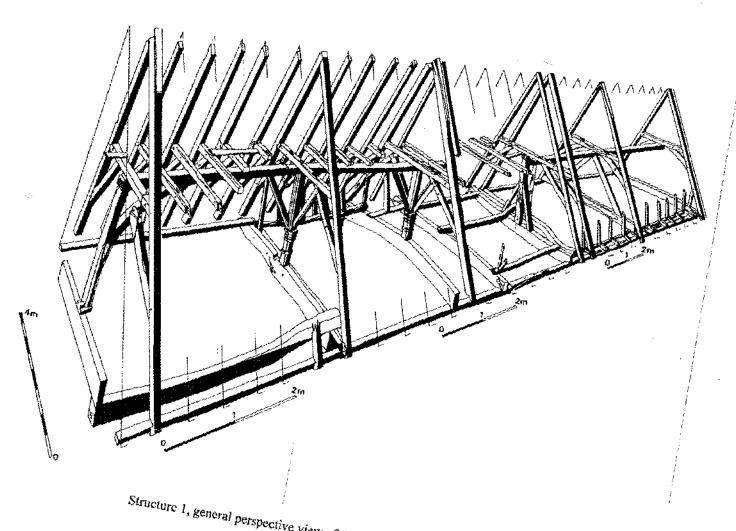
Facing p. 1	Structure 1, general perspective view of the roof assembly, as existing.
Fig. 1	Location plan and structure numbers used by the survey.
Fig. 2	Abbey buildings and their modern setting.
Fig. 3	Abbey buildings within the inner court.
Fig. 4	Premonstratensian houses in Britain.
Fig. 5	Structure 1, external and internal elevations of south wall.
Fig. 6	Structure I, phasing of south wall.
Fig. 7	Structure 1, decorative stonework.
Fig. 8	Structure 1, external and internal elevations of west and east walls.
Fig. 9	Structure 1, phasing of west and east walls.
Fig. 10	Structure 1, external and internal elevations of north wall.
Fig. 11	Structure 1, phasing of north wall.
Fig. 12	Structure 1, ground plan, roof plan and cross-section.
Fig. 13	Structure 1, perspective view of the crown-post roof.
Fig. 14	Structure 1, perspective view of whole roof showing later additions.
Fig. 15	Structure 1, simplified sequence of building development.
Fig. 16	Structure 1, details of trefoil and lancet-headed windows.
Fig. 17	Structure 1, details of rectangular windows.
Fig. 18	Structure 1, detail of window AE 514 in east wall.
Fig. 19	Structure 1, details of later windows.
Fig. 20	Structure 2, elevations of south (outer) and north (inner) faces.
Fig. 21	Structure 3, wall elevations and plan.
Fig. 22	Structure 4, wall elevations and plan.
Fig. 23	The abbey precincts.
Fig. 24	Location of abbey and its dependent granges and estates.
Fig. 25	Floor tiles from Halesowen Abbey.

List of Plates

Frontispiece	Recording roof timbers, Structure 1 (Ferris).
Plate 1	Structure 1, west gable and north wall, looking south-east (Sterenberg).
Plate 2	Structure 1, east gable and south wall, looking north-west (English Heritage).
Plate 3	Structure 2, the inner face of the refectory, looking south with the Victorian farmhouse behind (English Heritage).
Plate 4	Structure 3, north wall looking south (Sterenberg).
Plate 5	South transept wall and farm buildings on site of former cloister, looking north (Sterenberg).
Plate 6	Structure 1, view of the south wall looking north-east (Sterenberg).
Plate 7	Structure 1, south wall, detail of the fireplace (Sterenberg).
Plate 8	Structure 1, view of the east gable wall (Sterenberg).
Plate 9	Structure 1, detail of crown-post roof, looking east (English Heritage).
Plate 10	Structure 1, detail of the decoration of the crown post of an open truss (Sterenberg).
Plate 11	Structure 1, detail of western closed truss and crown-plate assembly (English Heritage).
Plate 12	Structure 1, detail of the curved soulaces of the common-rafter roof (Sterenberg).
Plate 13	Structure 1, detail of the junction of the common-rafter roof and the crown-post roof (English Heritage).
Plate 14	Structure 3, east wall, possible remains of a kitchen (Sterenberg).
Plate 15	Structure 4, south wall of the church showing remains of processional doorways (Sterenberg).

List of Historical Engravings

Engraving 1 S. Hooper, 1774 (in The antiquities of England and Wales, vol. iii).
Engraving 2 J. Coney, 1825 (in Dugdale, Monasticon Anglicanum, 1830 edition).
Engraving 3 D. Parkes, 1789 (in Gentleman's Magazine vol. xix, 1799).
Engraving 4 S. and N. Buck, 1731 (in A collection of engravings of castles, abbeys... etc., 1721–1752).
Engraving 5 J. Caldwell, 1799 (in Nash, A history of Worcestershire, vol. i).
Engraving 6 D. Parkes, 1801 (in The Itinerant, 1801).
Engraving 7 D. Parkes, 1811 (in Briton and Brayley, The beauties of England and Wales, vol. xiii, 1813).



Structure 1, general perspective view of the roof assembly, as existing.

Halesowen Abbey: A report on building recording and fieldwork, 1987-95

by Stephen Litherland and Derek Moscrop, with a contribution by Lynne Bevan

INTRODUCTION

Halesowen Abbey, a Premonstratensian foundation, lies 1km to the south-east of Halesowen in the Metropolitan Borough of Dudley, on the western outskirts of Birmingham (NGR SO 97678283; Fig. 1). The abbey remains now form part of Manor Farm, and are situated on a spur of south-facing land drained by tributaries of the River Stour. The surface geology consists of sandstone and grey clays with thin seams of coal and Spirorbis limestone, while there are areas of alluvial deposits along the stream courses to the south and west of the abbey (Geology Survey 1" Sheet 168). An area which includes almost all the earthworks connected with the abbey has been designated a Scheduled Ancient Monument, and portions of the standing remains of the abbey are Guardianship monuments (Fig. 2).

The following report outlines the results of building recording, earthwork survey, documentary research, geophysical prospection and fieldwalking undertaken by Birmingham University Field Archaeology Unit since 1987. The introductory section outlines previous work at the abbey, the background to the work reported here and the methods used. A general description of the standing remains follows and a summary of the historical and documentary evidence. The detailed results of building recording are then presented, followed by a report on the fieldwork survey of the abbey precinct and by a section on the monastic granges.

The plan of the abbey has been principally recovered by excavation (Fig. 3). Holliday conducted the first recorded excavations at Halesowen Abbey in 1870 (Holliday 1871a). Although most of the records of his work have since been lost, a manuscript plan of the abbey including the positions of the foundations traced from excavation and two in situ portions of tile floor is in Birmingham Reference Library (BRL 353137). Holliday's plan of the abbey church and main claustral buildings was enhanced by survey work on the site by Brakspear in 1906 (Clapham 1923, pl. facing p. 252), and by excavation by Somers from 1928 to 1930 (Somers and Somers 1932, 4-10). Further excavation by Somers in 1938, during the widening of Manor Lane to the west of the church, found wall foundations and a cobbled track which may have been part of the outer gatehouse of the abbey (Somers 1938, 82). The Duke of Rutland conducted minor excavations on the site between 1925-28 and 1934-40 in search of medieval floor tiles. The exact location of this work is unknown, apart from a reference to his 1938 excavation of the Chapter House (Somers 1938, 82). A short note on a watching brief on the supposed site of the Guest House is also not accurately located (Wilson and Hurst 1971, 141). Figure 3 is an attempt to combine all the details from the plans made by Holliday, Brakspear and Somers. Previous excavations have resulted in a small archive, and finds are limited to a large collection of tile stored or on display in local and national museums. There are two major descriptions of the abbey ruins (Holliday 1871a; VCH 1906, ii, 137-9). An historical and archaeological assessment of the abbey was commissioned by Dudley Borough Council in 1986 (Marsden 1986a). Illustrations of Halesowen Abbey since the 18th century are listed by Marsden (1986b, 89).

The building recording was undertaken mainly on behalf of English Heritage. The work focused on the surviving buildings within the former Manor Farm complex. These are, or were recently, used as farm buildings and incorporate medieval masonry. Each was given an individual Structure Number (Fig. 1). The aims of the survey were to establish the character, history, dating, and archaeological development of each surviving structure. The survey generated an archive of drawings and detailed reports (Ferris 1987 and 1990) to be lodged with English Heritage's Historic Properties Midlands section and the National Monuments Record of the RCHME, Dudley Borough Council and the Black Country Sites and Monuments Record. A synthesis of these surveys is presented below with illustrations and photographs of the principal plans, elevations and relevant architectural details.

Structure 1 is now a barn with two large opposing cart doors punched into the northern and southern walls (Plates 1 and 2). Its eastern part is open to the roof and has no surviving floor save of trampled earth. The western part is divided into two storeys by a modern timber floor. Access to the lower level is only through a door in the western wall, with a staircase up to the upper level. The structure was briefly described by Holliday (1871a), and a detailed analysis of the roof was presented by Molyneux (1984). An engraving by Hooper in 1775 shows the building from the south-east with the abbey ruins beyond (Engraving 1).

The building was surveyed in 1987. The work consisted of a detailed stone by stone enhancement of a photogrammetric survey of the walls, and a detailed measured survey of the roof structure. In addition a written record of the building was produced, which recorded various distinct builds and architectural features on pro formae. These comprised 'Structural Element' (SE) and 'Architectural Element' (AE) recording sheets. Further work was undertaken in 1989/90 prior to the consolidation of the structure by English Heritage. This included the recording of those parts of the structure hitherto inaccessible, and limited excavation in advance of groundwork required to stabilise the building fabric. Conservation of Structure 1 was necessitated by its instability, possibly a result of subsidence associated with a disused 19th-century mine nearby. The conservation brief specified that alterations to the structural evidence of wall faces be minimised. Small-scale excavation undertaken within the building in 1990 was intended to locate an internal partition. However, in the limited area excavated it was found that archaeological deposits had been truncated down to the natural surface.

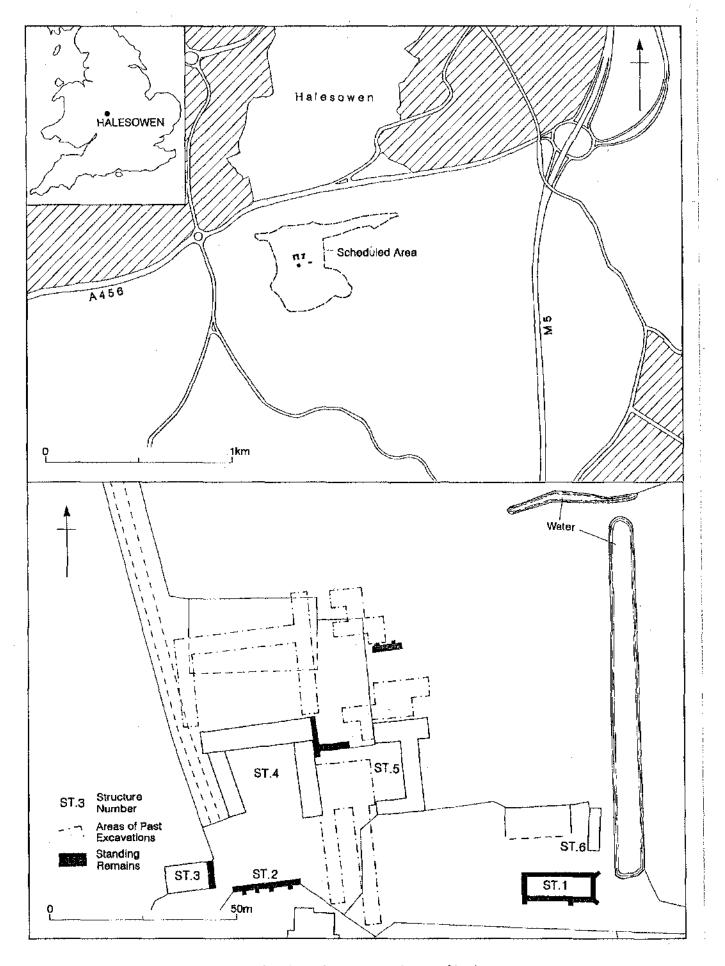


Fig. 1. Location plan and structure numbers used by the survey.

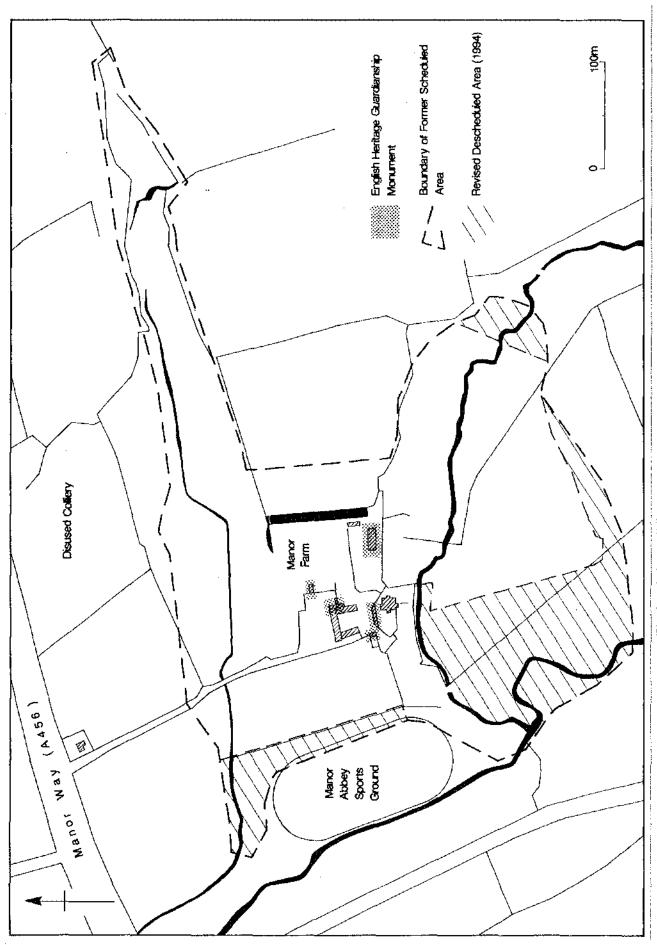


Fig. 2. Abbey buildings and their modern setting.

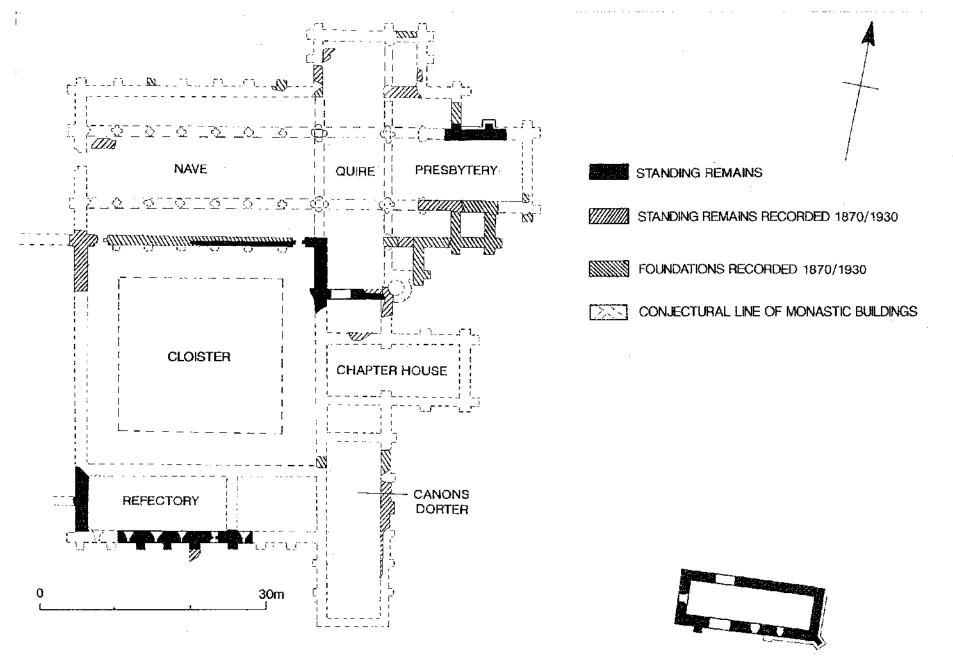


Fig. 3. Abbey buildings within the inner court.



Engraving 1. S. Hooper, 1774 (in The antiquities of England and Wales, vol. iii).

Structures 2, 3 and 4 all contain surviving elements of the monastic complex and were also surveyed in 1989/90. Structure 2 consists of a 19m-long stretch of sandstone walling which originally formed part of a building in the south range of the monastic cloister (Plate 3). Structure 3, situated to the west of Structure 2, is an open-fronted, south-facing cart-shed, containing several phases of sandstone walling within its fabric (Plate 4). Structure 4, known as 'the long barn', incorporates parts of the south wall of the nave and southern transcet of the former abbey church. It encloses three sides of the central farmyard, situated over the area of the former monastic cloister (Plate 5). The architectural record of Structures 2, 3 and 4 consisted of detailed stone by stone drawings of all areas of surviving sandstone walling within the principal internal and external elevations, the compilation of floor plans, and detailed photographic survey. In common with the architectural survey of Structure 1, a written record was also produced.

Later farm buildings were studied by students on the University's Postgraduate Diploma in Practical Archaeology course in 1990 and 1995 (Learmonth and Heath 1995). In addition to parts of Structure 4, these comprise Structure 5, a brick-built stock house, Structure 6, a small brick-built stable (since demolished), and the Victorian farmhouse. Recording of these structures consisted of a photographic record and descriptive text. They are not further discussed in this report.

Halesowen Abbey has also been the focus of research work on the abbey precinct, on the wider landscape surrounding the abbey complex and on its dependent granges undertaken as student projects both at the Unit and at the University, and the opportunity has been taken to present reports on this work as well as those on the structural evidence (Marsden 1986; Moscrop 1993a, 1993b; Millard 1994).

Acknowledgements

Building survey work on the abbey buildings was supervised by Jon Sterenberg, Iain Ferris and Stephen Litherland. Thanks are due to Beric Morley, the English Heritage Inspector responsible for the site during the greater part of the project, and to his successors Gill Chitty and Andrew Fleming. Beric Morley is also thanked for advice and comments during the writing of this report. Mick Aston also kindly lent material from previous surveys he had made of the abbey. Lord Cobham and the present tenant, Mr Tudor, are thanked for allowing access to the site and the help and cooperation of Lord Cobham's estates manager, David Condy, is also acknowledged. Initial documentary research was undertaken by Andrew Marsden and this was subsequently expanded by the author. The work of Birmingham University students on Practical Archaeology courses is acknowledged, principally Derek Moscrop for his landscape survey work, George Learmonth for survey work on the farm buildings on the site, and Debbie Millard for her study of the granges of Halesowen Abbey. The illustrations are by Jon Sterenberg and Nigel Dodds and the report was edited by Peter Ellis. The project was funded by English Heritage through the good offices of Glyn Coppack at Historic Properties Midlands and East Anglia.

THE MONASTIC BUILDINGS

The monastic church at Halesowen consisted of a rectangular aisleless presbytery as was the case at many of the Premonstratensian houses in England for which plans exist (Clapham 1923, 124). The transept chapels divided by solid walls were common in earlier Premonstratensian churches, but more often replaced by open arches in the 13th century. The plan of the church differs from other Premonstratensian houses in having an aisled nave; many houses retained an aisleless nave until the Dissolution since the order was closed and the church needed only to accommodate the monks. The aisles might indicate an intention to house conversi but there is no evidence that there were conversi at Halesowen. At Cistercian houses, for example, the presence of lay brethren in the west range often resulted in the removal of the refectory from the south to the west range, and this clearly did not happen at Halesowen. It is just possible that the Premonstratensians at Halesowen relaxed their closed rule in order to preach and that the aisles at Halesowen were intended to accommodate the laity. However, the most likely explanation for the presence of aisles is that they reflect a more relaxed attitude to architectural austerity at the time of building and therefore a deliberate choice of a more imposing plan.

It is unclear whether the monastic church had a tower at the crossing. These were generally not present at early Premonstratensian churches, with only Talley, Dale and Alnwick possessing them originally (Clapham 1923, 126). By the time Halesowen was built it would seem likely that a small tower was provided, both to light the crossing and to deal with the architectural problems of articulating nave, choir and transept of different heights.

The church was built mainly of local red sandstone with some yellow sandstone used to highlight particular architectural features. Although there is evidence of recent repairs, the standing portion of the south transept survives almost to its original height with two doorways, one above the other. The surviving walls of the church are early 13th-century in date.

The cloister is situated to the south of the church, as in all but two of the 26 examples in the country for which we have details (Clapham 1923, 127). This was usual in the houses of all the orders. The chapter house occupied the eastern side of the cloister, and the evidence of column bases found in 1938 suggests the existence of aisles as was generally the case, although whether this was a two or three-aisled plan is unknown. Stone seats also ran along the north and south walls (Somers 1938, 82). The dormitory was probably on the first floor of the east range of the cloister. The upper of the two doorways in the south wall of the south transept seems likely to have led to the night stairs (Plate 5). The south wall of the refectory survives to a sufficient height to show that it was built on the south range over an undercroft, a pattern mirrored in ten other Premonstratensian houses in England and Scotland (Clapham 1923, 128). Presumably the west range of the cloister housed a cellarer on the ground floor and the guest house above. The evidence suggests that in the plan of its domestic claustral buildings, Halesowen conforms to the usual Premonstratensian pattern, which in general follows very closely that of the Austin Canons (Clapham 1923, 170).

The core buildings of the modern farm were constructed or rebuilt between 1841 and 1863, and comprise a barn and rickyard with attached stables and animal sheds lying north of the farmhouse. To the east a substantial medieval building, Structure 1, used as a barn, has been suggested to have been the infirmary, a separate chamber for the abbot, or a guest house. Building recording has shown that it was probably an addition to a building, all traces of which have otherwise disappeared.

HISTORICAL AND DOCUMENTARY BACKGROUND

Apart from scattered references in Crown documents, the main documentary sources for the abbey are the Court Rolls of the manor of Hales, 1270–1307 (Amphiett 1930; Wilson 1933), the register of Richard Redmant, Abbot of Shap, 1459–1505 (Gasquet 1904–6) and various charters and other documents which survived in the Hagley Muniments and are now mainly to be found in Birmingham Reference Library. The abbey's cartulary, however, has been lost (Colvin 1951, 380).

The manor of Hales was in existence at the Conquest. In 1086 Halesowen parish consisted of the whole of the manor, an area of some 10,000 acres. Later twelve rural townships were added (Razi 1980, 5–6). The manor was passed to the Crown in 1102. In 1174 it formed part of the lands of Henry II's sister Emma on her marriage to David, son of Owen, Prince of Wales (VCH 1906, ii, 142). Holliday speculates that the name of the estate may have derived from the name Owen (Holliday 1871a, 51).

It seems to have reverted back to the crown shortly after and in 1214 King John gave the manor of Hales with all its appurtenances to Peter des Roches, his justiciar and Bishop of Winchester, 'to build there a house of religion of whatever order he chooses' and Peter founded a house of Premonstratensian canons in 1215 (VCH 1906, ii, 162; Colvin 1951, 179). John's grant of the manor to the canons was confirmed by him on 8 August, and this was later to be reinforced when, in 1251, the abbot and convent received from Henry III a grant of free warren in the manor (C Chart R 1226 57, 362). The new canons for Halesowen were to come from the existing Premonstratensian house at Welbeck in Nottinghamshire, and according to Bishop Redman's visitation register, they arrived at Halesowen on 26 April 1218 (Colvin 1951, 180). The large size of the manor and the scattered nature of settlement were to create problems later between the monastic house and its tenants (Hilton 1966, 159-61; Razi 1980).

The Premonstratensian Order has received much less attention than the Cistercians (Bond 1993, 153) and there are only two general accounts (Colvin 1951; Bond 1993). The order was founded in 1119/20, and followed the most severe version of the Augustinian rule while incorporating various Cistercian practices. Like the Cistercians, Premonstratensian houses were founded in isolated places and organised a system of dependent granges. Whether these were run by outstationed monks or stewards supervising paid workers as at Benedictine houses or by *conversi*, or lay brothers, is not clear.

The initial buildings may only have been wooden constructions which were gradually replaced in stone as recorded by successive grants in the 13th century (Colvin 1951, 179–81). The Pipe Rolls record annual payments by the king to Peter des Roches of £17 6s 8d from 1218 towards the building of the abbey (VCH 1906, ii, 162). The king also made specific grants of materials to help with the building of the abbey; in 1223 the Bishop of Winchester received 60 tie-beams from the Forest of Kinver 'towards the work of his church at Hales'. The Bishop's pipe-rolls for 1231/2 record money paid 'towards the expenses of the abbot of Hales and brother Richard master of the works at Hales' (Colvin 1951, 181); while in 1233 the king gave the

abbot 15 oaks to make stalls for his choir (Colvin 1951, 180). Payments by the Crown were still being made to Peter des Roches's successor as Bishop of Winchester in 1241–2. The Hundred Rolls for 1274 report that although King John had given the manor to Peter des Roches to found the religious house at Halesowen, it was his son King Henry who 'first built the present abbey' (Colvin 1951, 180).

Further phases of building work in the abbey precinct are documented. In 1293 Edward I granted a licence to crenellate 'certain buildings which have recently been built' (CPR 1292–1301, 55), and in the same year the Court Rolls for the manor of Hales noted that Richard the Mason had not finished a hall he was building for the abbot before St. Nicholas's day (Amphlett 1930, i, xciv). An inventory taken in 1505 on the death of Abbot Bruges notes the Abbot's Chambre, the Napre, the New Chambre, the Calys and the Tresor-House, the Ostre, Medyll Chamber and botulphos chambyr (Gasquet 1904–6, ii, 264–5). The Court Rolls note the 'prison of the lord abbot' (Amphlett 1930, i, xxv).

By the 13th century, Premonstratensian houses had been divided into three areas or circaries (Fig. 4). Visitations by the abbots of Langdon, Dale and Shap are recorded acting as heads of the midlands circary to which Halesowen belonged (Colvin 1951). In 1478 the circators banished John Saunders from Halesowen to the abbey of Dale for eighty days for immorality, while a second visitation later that year ordered that a brother who had broken the rule of silence be put on bread and water for one day (VCH 1906, ii, 165). The right of visitation was also granted to the abbot of the mother house, Welbeck in the case of Halesowen.

Although Halesowen was a late foundation, being the last daughter house of Welbeck, it was one of the wealthier Premonstratensian houses. The manor of Halesowen remained the abbey's principal endowment till the Dissolution when it was contributing £133 18s 7d to a gross income of £377 15s 6d (VCH 1906, iii, 142). The borough of Halesowen, established by the abbey in the reign of Henry III, would also have brought the abbot income from rents and licences to trade, as well as Halesowen parish church from its rectory which was appropriated c 1270 and its dependent chapel of St Kenelm and various other advowsons (VCH 1906, ii, 163). The abbey's temporalities were also extensive (Colvin 1951, 183). They included after 1332 the lands of the Augustinian Priory of Dodford near Bromsgrove (VCH 1906, ii, 164). The prosperity of the abbey is indicated by the inventory taken on the death of Abbot Bruges in 1505 (VCH 1906, ii, 165). This included a list of the contents of the abbot's chamber which contained two feather beds. His new chamber contained a feather bed, a quilt covered with red silk and a red coverlet with dolphins, while the plate in the abbot's chamber included the silver and gilt shrine of St Kenelm, a silver and gilt crown, an ornamented silver sceptre and the silver and gilt shrine of St Barbara's head (VCH 1906, ii, 165).

Documentary references to the home estate serve to illuminate its appearance and economy. There are references to the abbey

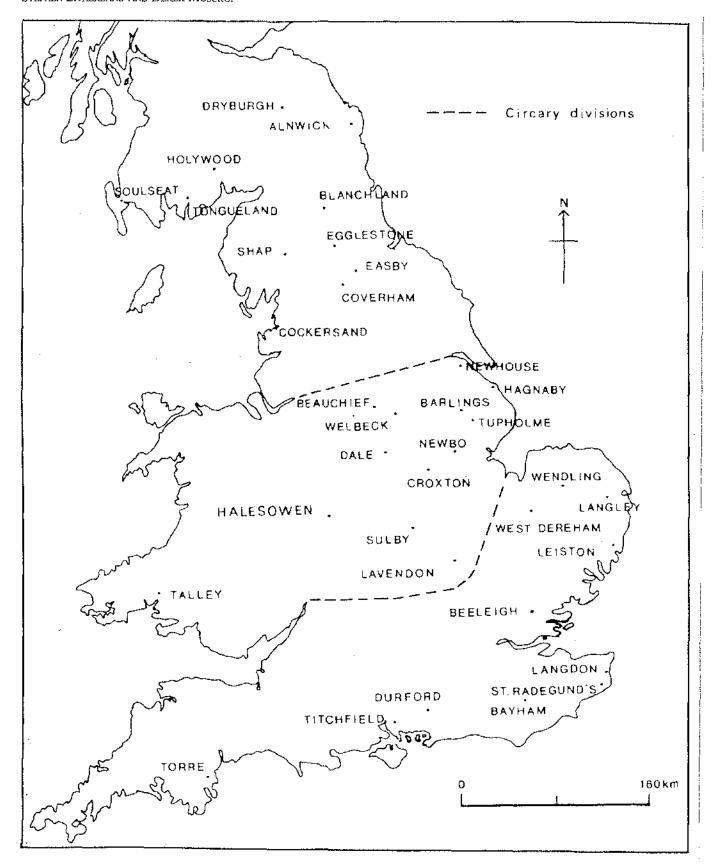


Fig. 4. Premonstratensian houses in Britain.

mill from 1270 (Amphlett 1930, i, lxxii), although there was no mill at the foundation. A sluice ditch, presumably associated with the fishponds, is also referenced (Amphlett 1930, i, 23). In 1276 a charge was brought for removing stakes which carried the nets of the abbot's fisherman (Wilson 1933, xxiv). A park was made c 1290 and was still in existence in 1601–2 (VCH 1906, iii, 143).

Other references to the manor as a whole record numerous mills (VCH 1906, iii, 143; Amphlett 1930, Ixxxiii). The widespread management of water is marked by court cases against the abbot in the later 13th century and before the Dissolution (Amphlett 1930, i, Ixxxv). Metalworking, leatherworking, woodworking, building, the manufacture of textiles, food production and alebrewing are all referenced in the borough (Razi 1980, 7).

Weavers and dyers are noted and a fulling mill existed in the reign of Edward I. Coal was found in Hill township in the time of Edward I and in 1307 a mining lease at La Combes was granted by the abbot (VCH 1906, iii, 136). There was a bloom smithy in the area which ceased to work in 1602 (Schubert 1957, App. V). Coal from the area was used for iron production (VCH 1906, iii) and there are references to travelling smiths and ironmongers (Amphlett 1930, i, xciv).

Judging by the records of burial in its church, the abbey enjoyed the patronage of local lords. These included John Botetourt, lord of Weoley in the reign of Richard II, Sir Hugh Burnell in the reign of Henry V, and Sir William Lyttleton in 1507 (Somers and Somers 1932). Joan Botetourt, lady of Weoley, gave the manor of Warley Wigon to the abbey in 1337 (Colvin 1951, 183). An abbey petition in 1343 cited the costs of hospitality and these may have been extensive (VCH 1906, ii, 163). Records for 1366 note the successive visits of the Lords of Dudley and Weoley, Sir Richard Fitton and the lord abbot of Welbeck (Colvin 1951). A visitation in 1489, when there were only 13 canons resident at the abbey, noted the consumption of 20 bushels of wheat weekly, and 1110 quarters of barley, 60 oxen,

40 sheep, 30 swine and 24 calves yearly (VCH 1906, ii, 164). The Halesowen *compoti* record the scale of hospitality offered to guests (Colvin 1951).

The house was surrendered in 1536, and by 1538 or 1539 the buildings were partly dismantled. There are details of the receipts from the sale of 'moveables, plate, lead, bells, and buildings of the late monastery of Hales Owen' in the Augmentation Accounts for 1539 under the certificate of John Freeman. Commissioner (Hunt 1979, 31). The site of the abbey was granted by Henry VIII to Sir John Dudley who granted the 'mansion of the manor', which may have been the Abbot's Lodging, to his steward George Tuckey (VCH 1906, iii, 142). It is probable that Tuckey was in charge of the complicated operations involved in dismantling and salvaging the abbey materials. In 1555 the estate passed to Sir Robert Dudley, later Earl of Leicester, and in 1558 it was conveyed to Thomas Blount and George Tuckey (VCH 1906, iii, 143). It is interesting to find that one Thomas Blount was an inmate of the abbey at the dissolution. The same year Blount and Tuckey sold the manor to John Lyttleton and it has remained in the Lyttleton family. It is now held by Lord Cobham.

BUILDING RECORDING

Structure 1

Description

South wall (Figs. 5 and 6)

The south wall is built principally of irregularly-coursed, squared sandstone blocks. At the west end of the south wall the west gable wall originally continued to the south; the scar of the demolished wall has been roughly finished (Plate 6). Above the later western buttress a small infilled scar may mark the return of another wall, most of which would lie behind the buttress. At ground floor level a blocked doorway is indicated by two springing stones from an arched head (AE 518) surviving on either side of a later lancet window (AE 517) and by door jambs clear both internally and externally. A second doorway at first floor level may be masked by window AE 516.

In the central section the horizontal courses fall into three distinct groups with breaks roughly at the level of the first floor and at the level of the first floor window sills. The wall is cut by a cart door (AE 522) which replaced an earlier smaller doorway marked by a four-centred brick arch (AE 531). Above, an area of stonework has been replaced on the exterior. There is also infilled stonework, visible on both sides, around window AE 523. On the interior the former position of a first floor is clear. Three similar windows, AE 519, AE 520 and AE 521, each have a chamfered stone mullion and transom, chamfered sides, and stone arched heads. Externally, window AE 519 has a simple arch above each upper light, the other two have cusped trefoil heads. Otherwise the windows are identical.

To the east a chamfered plinth includes the central and corner buttresses and ends west of the central buttress. Above, an irregular vertical break extends up to the level of the wall-plate where it corresponds with changes in the build of the roof. The sandstone blocks of the east section of wall are slightly larger and more evenly coursed. Windows AE 528 and 529 are rectangular, and divided into two lights by a chamfered mullion and jambs with two orders of chamfer. Window AE 525 has been inserted into a larger, earlier, opening.

A fireplace (AE 537) at first-floor level is corbelled out on the exterior (Plate 7). On the interior, the fireplace is inset, floored with stone slabs and backed with bricks. The brick backing is smoke-blackened and cracked by heat. It rises to a flat upper surface c. 0.75m (2' 6") below the wall plate. The fireplace has splayed sides, up against the eastern of which a decorated grave slab is a later addition (Fig. 7). On the opposite side a mortar scar of the same size and shape suggests the former position of a second slab. The brick infill above the stonework of the fireplace suggests a former smoke hood.

East wall (Figs. 8 and 9; Plate 8)

Sandstone courses extend to the apex of the roof. The chamfered plinth continues across the wall except at the former position of a collapsed north-east buttress. A straight joint between the brick

repair of the scar and the sandstone wall face suggests some rebuilding of the wall, presumably after the collapse of the buttress. The lower five courses of the wall are regular, but above these the coursing varies either side of a blocked window opening through which light AE 514 has been later inserted. The face of the blocking is inset slightly. The blocked area continues to just above the height of the wall-plates. A large sandstone block above this level is a later insertion. The existing window is similar to the rectangular windows in the east part of Structure 1, with two lights framed by three orders of chamfer at the jambs and head. Internally four stone corbels are arranged in two pairs.

North wall (Figs. 10 and 11)

A vertical building break marks the junction of the north wall and the western gable wall. There are straight joints between the lower stonework of the western gable wall and the north wall, and between the north wall and the perforated brickwork above. The coursing of the west end of the north wall has been repaired in several places, particularly around cart door AE 500. On the ground floor, the framing of an arch-headed two-lighted window, AE 503, survives externally although blocked with brick externally and stone internally. The transom bar across the western light is now missing, as is the sill stone, although the window was evidently damaged even before it was blocked with brick. The remains of a second window, AE 502, include a broken transom and a plain stone arched head, and suggest a similar double, four light, window to AE 503. Part of a chamfered stone reveal and a broken transom bar can be seen above AE 503 suggesting a first floor window, AE 504. This may also have been a double window. Another window, AE 501, has a double window design divided by a chamfered mullion and transom into four lights, the arches cusped to form a trefoil head to each upper light, although the eastern transom bar has been broken off. Externally, there is a simple carved human head or face on the spandrel between the two arches, while internally, the opening is splayed, with a timber lintel over.

There is evidence for structural failure around cart door AE 500. The broken-off jambs of the windows may indicate a wall collapse, as do the areas of brick repair, the repair to the roof and the height of the door frame.

Evidence of two former buttresses can be seen on the east section of the building in the form of brick-repaired scars in the centre and at the east end of the building. A jagged, vertical sheer line near the north-east corner of the wall has been infilled with tile. A blocked opening at first-floor level suggests a door, AE 505, and may be associated with a vertical line of eight blocked putlog holes. A rectangular window, AE 506, has also been inserted into the first-floor wall fabric at the east end of the building.

West wall (Figs. 8 and 9)

Eight courses of stonework are completed by a stringcourse above which the wall is of brick punctuated by header-sized

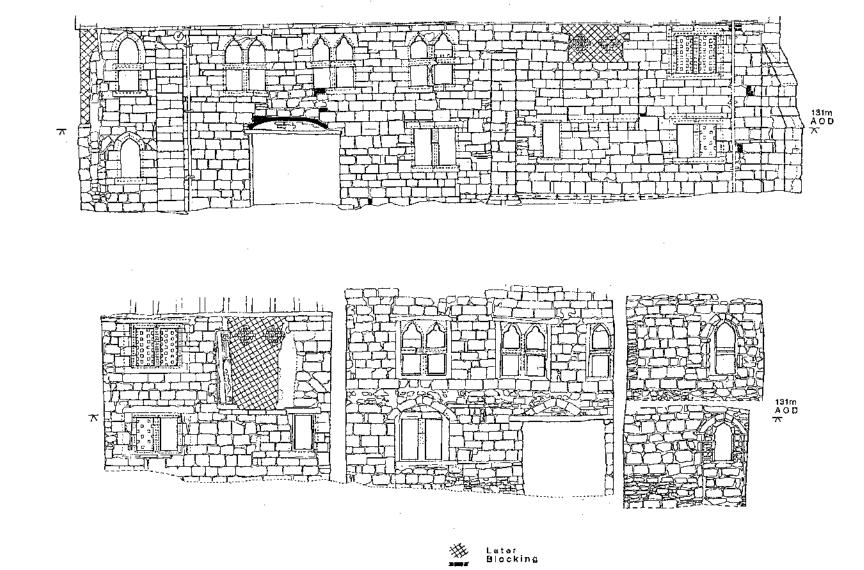
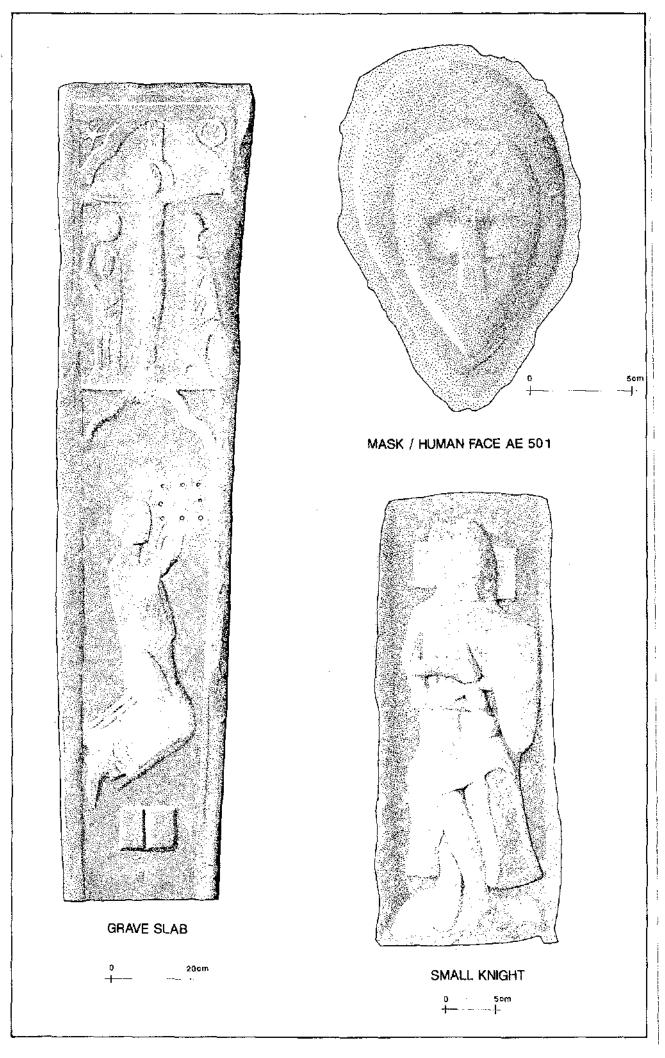


Fig. 5. Structure I, external and internal elevations of south wall.



Fig. 6. Structure 1, phasing of south wall.



ventilation holes arranged in symmetrical patterns. The stonework around the central ground-floor doorway is much disturbed, which may indicate that this entrance was inserted through the existing wall fabric. Alternatively, the doorway represents a remodelling of an earlier feature.

Roof (Fig. 12)

The construction of the roof divides into two sections, a western crown-post roof of three bays measuring just under 11m in length, and a variant common-rafter roof to the east. There have

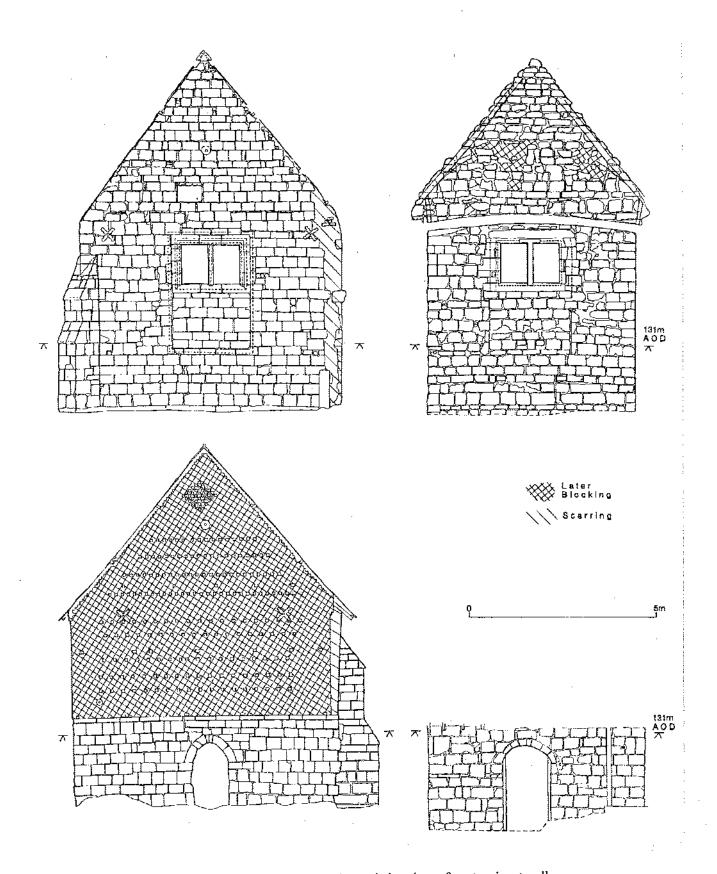


Fig. 8. Structure 1, external and internal elevations of west and east walls.

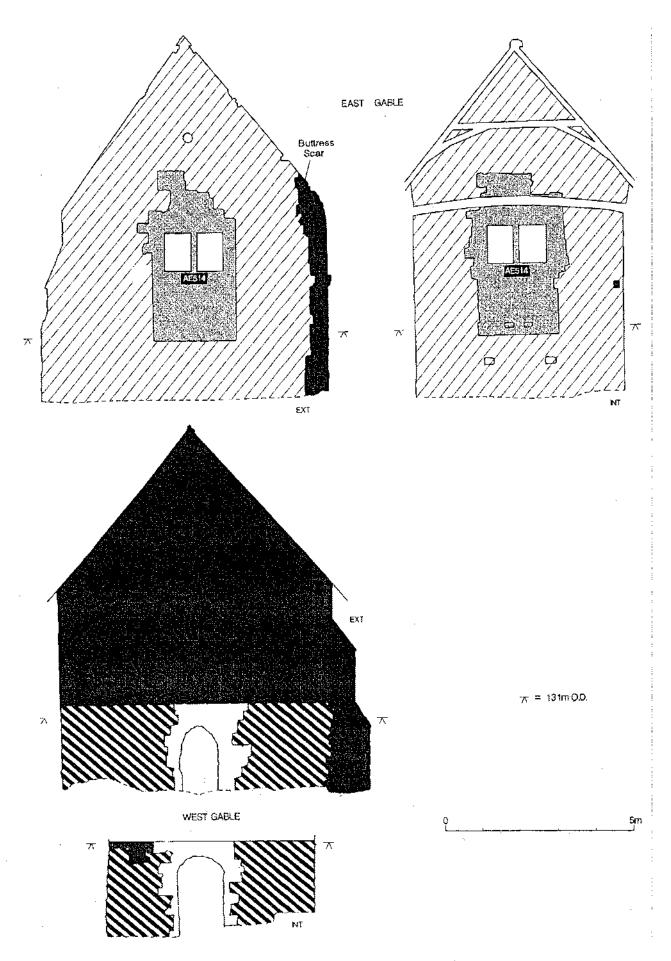


Fig. 9. Structure 1, phasing of west and east walls.

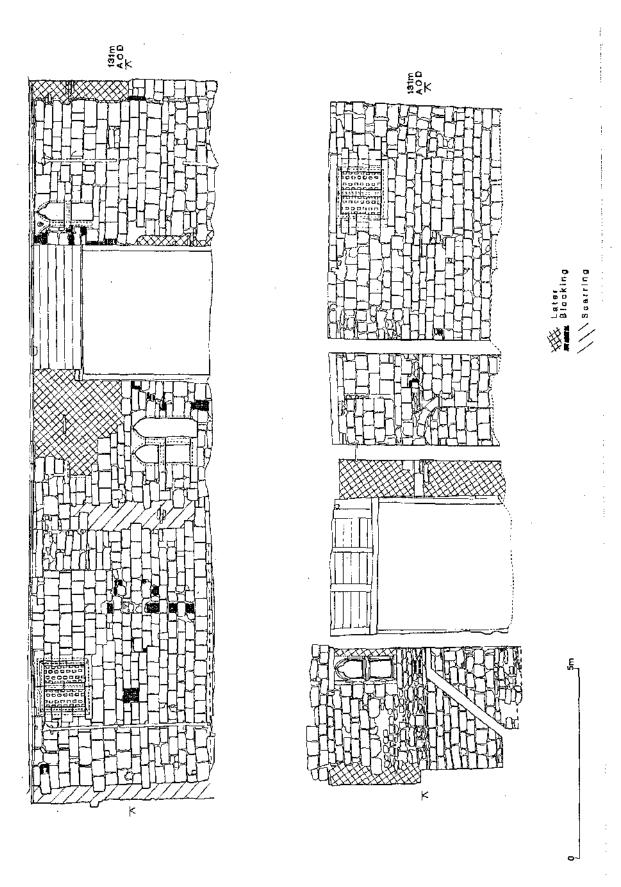
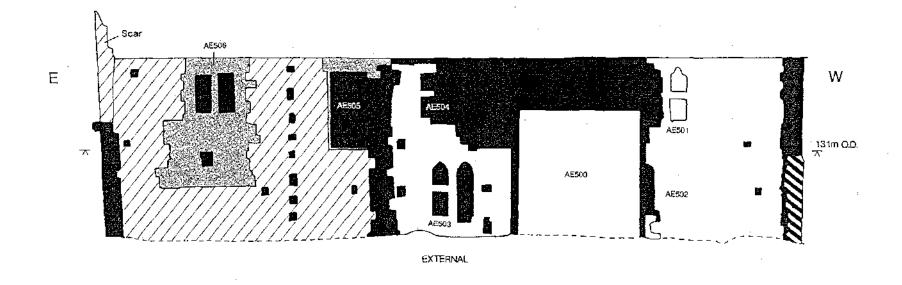


Fig. 10. Structure 1, external and internal elevations of north wall.





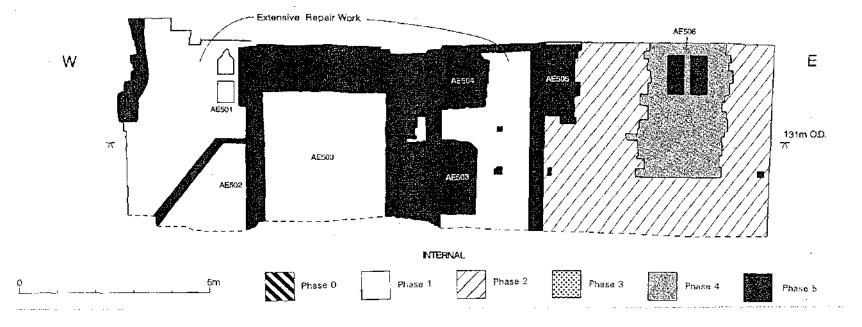


Fig. 11. Structure I, phasing of north wall.

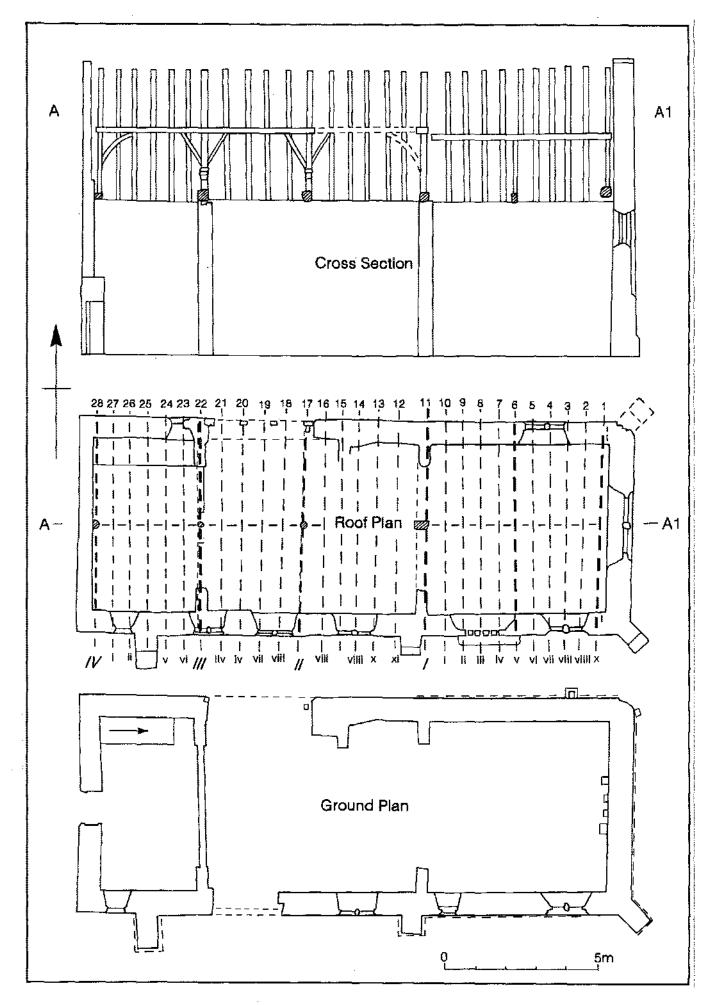


Fig. 12. Structure 1, ground plan, roof plan and cross-section.

been numerous later repairs and alterations to each roof, mainly concerned with strengthening the structure. Discussion of these later repairs is confined in the following sections to what light they shed on the post-medieval development of the building. Each rafter truss was numbered 1–28 from east to west. Please note that the perspective views of the roof are 'as existing' and reflect the extent of settlement and distortion of the roof assembly. The severity of this movement can be gauged by the fact that if the roof had been drawn together again during the conservation work it would no longer have sat on the wall heads.

Western Section (Fig. 13)

The western section of the roof consists of four crown-post trusses defining three bays of slightly unequal length (Plate 9). The crown posts of the two central open trusses are finely moulded with octagonal posts and dog-tooth decorated friezes (Plate 10; Molyneux 1984, 47; Jones and Smith 1958, 24–5; Wood 1965, fig. 95). The decorated open trusses are flanked east and west by plain closed trusses, these are braced down to the tie-beam, although only redundant mortices remain in the westernmost post because the tie-beam has been removed. The

easternmost closed truss has redundant mortices in the top and soffit of the collar and the soffit of the tie-beam, presumably for a partition wall or screen. There are no mortices on the east side of the assembly to suggest any continuation of the crown-post roof further eastwards. Carpenters' marks on the crown-post trusses are located on the west face of each truss and are numbered I–IV from east to west, which implies that the putative building to the west of Structure 1 was the more important (Harris 1989). While the upper face of each intermediate common-rafter truss also faces west the numbering sequence is reversed. There are also anomalies within the numbered sequence, for example rafter truss 15 has no number, however, these may be explicable in terms of later repairs and alterations caused by the extension of the building to the east.

Each crown post is jointed into the tie-beam and crown plate. The open trusses are upwards braced to the crown plate and the soulaces, not the rafters. Further longitudinal support to the crown plate is provided by curved braces from the crown posts of the closed trusses (Plate 11). Only the redundant mortice for the easternmost brace can be seen as the crown plate has been sawn off. The crown plate has a through-splayed scarf joint

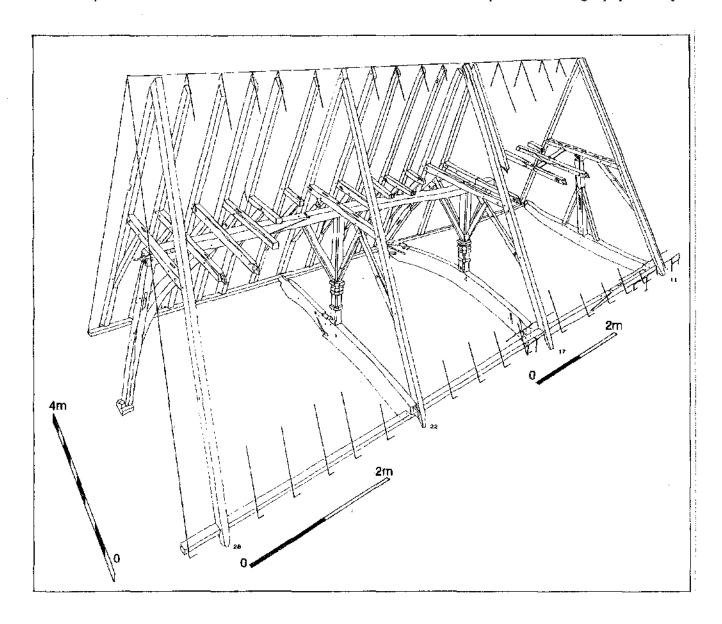


Fig. 13. Structure 1, perspective view of the crown-post roof.

with undersquinted abutments and two face pegs. The western crown-plate timber is much shorter compared with that to the east. The underside of the crown plate is simply decorated with chamfer and run-off stops. The soffit of the upward braces from the crown posts are more elaborately decorated with chamfers and run-off stops with fillet. The roof rests upon single outer wall plates which have turned outwards slightly from settlement. Internally, the stonework generally encases the tie-beams and continues to the level of the rafters.

The west roof has been altered and repaired. The disordered numbering suggests reassembly. In addition, a tangle of timber struts has been inserted around the north barn door, the crown posts of the open trusses have distorted, and one of the cambered tie-beams has split. Much of this stress may have been caused by the insertion of the north and south cart doors.

Eastern Section (Fig. 14)

The eastern section consists of ten identical common-rafter trusses with long curved soulaces giving an arched effect (Plate 12). Each common-rafter truss is tied by sole and ashlar pieces to a pair of wall plates, and the roof assembly is also tied into the crown-post roof (Plate 13). A number of empty mortices indicates that the southern outer wall plate was probably reused.

Alterations to the east roof have involved the insertion of additional ties to the crown-post roof, and a collar plate supported by a crude tie-beam assembly with diagonal bracing at the sixth collar-rafter truss from the eastern gable. At the junction with the crown-post roof further support for the collar plate is provided by a strut, with several redundant mortices in each face, which is connected to a beam angled over the easternmost tie-beam of the crown-post roof. This work appears to be a clumsy imitation of the carpentry of the crown-post roof to the west.

Stonework

The building stone used is New Red Sandstone and a siltstone. The sandstone colour varies from purple-red, to red, red-orange, green-orange, grey-green, and grey but it is likely to be all from the same geological bed. No patterning by Phase was apparent. Siltstone was used almost exclusively for blockings and infilling. Areas of tooling were examined (Rodwell 1981). Few stones exhibiting tool marks are found in the external faces. The recent buttress AE 511 has pockmarked tooling of a type repeated in the stonework of the Victorian farmhouse. Apart from the reused blocking material, stones on the interior were generally left unfaced to facilitate the keying of plaster or mortar bonding as on the upper surfaces of stones beneath the wall plate. There

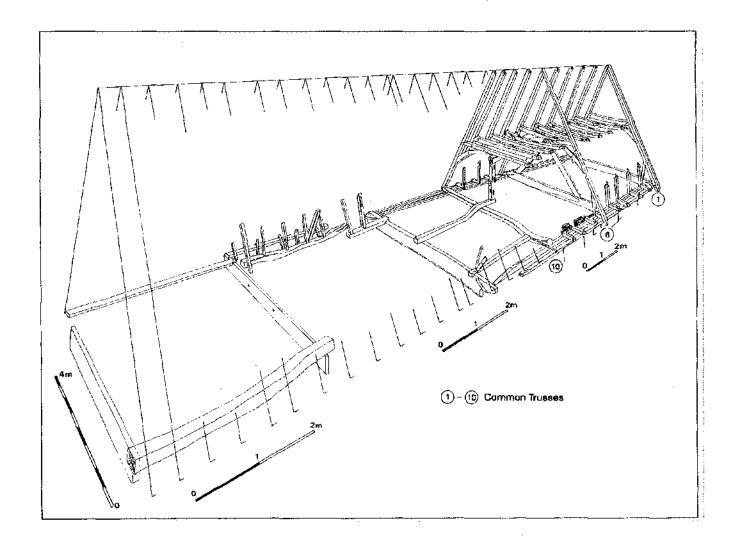


Fig. 14. Structure 1, perspective view of whole roof showing later additions.

were no areas of unique tooling observed, or any significant distinction between the builds of the east and west ends of the building. The angle of dressing suggested that it was accomplished before the stones were placed.

Interpretation and phasing

For analytical purposes the development of the building is divided into five main phases. Tentative reconstructions of each phase are shown as simplified perspective views (Fig. 15). A preliminary phase (Phase 0) is represented by a building to the west of Structure 1 which was subsequently demolished. Structure 1 was probably an addition to this building. The main phases, which are also illustrated for each wall (Figs. 6, 9 and 11), can be summarised as follows:

- Phase 0 13th century
 Building West of Structure 1; stonework of west gable wall.
- Phase I Later 13th century
 Primary build of west part of building; first floor chamber; windows AE 501, 519-521, insertion/ remodelling of doorway in west wall.
- Phase 2 Later medieval
 Primary build of eastern extension, ?chapel; large arched east window, buttresses and external chamfered plinth.
- Phase 3 Late medieval
 Conversion of cast end of building; heated first-floor chamber; insertion of first-floor and fireplace AE 537.
- Phase 4 Early post-Dissolution
 Conversion of east end of building into domestic accommodation; raising of first-floor, insertion of doorway AE 505, windows AE 506, 514, 528 and 529.
- Phase 5 Later post-medieval and modern
 Various sub-phases of repair, alteration and blocking, all associated with the conversion of Structure 1 into an agricultural building.

Phase 0

The stonework of the west wall is abutted by the north wall of Structure 1 which suggests that Structure 1 was an addition to a building or boundary wall to its west. Unfortunately, the insertion of windows AE 516 and 517 has destroyed the earliest relationship of the west wall and the south wall of Structure 1, although the lower part of the west wall is crudely finished and clearly once continued beyond the south-west corner of the present building. This building west of Structure 1 may not have been demolished until the Dissolution.

Phase I

This comprised the west end of Structure 1, a building with first-floor chamber and crown-post roof. A doorway provided

access from the building to the west on the ground floor, and may have been mirrored above. An added chamber or turret c, 1.5m (5') wide is suggested at the west end of the south wall of the west section. This would have risen the full height of the building and may have provided garderobes.

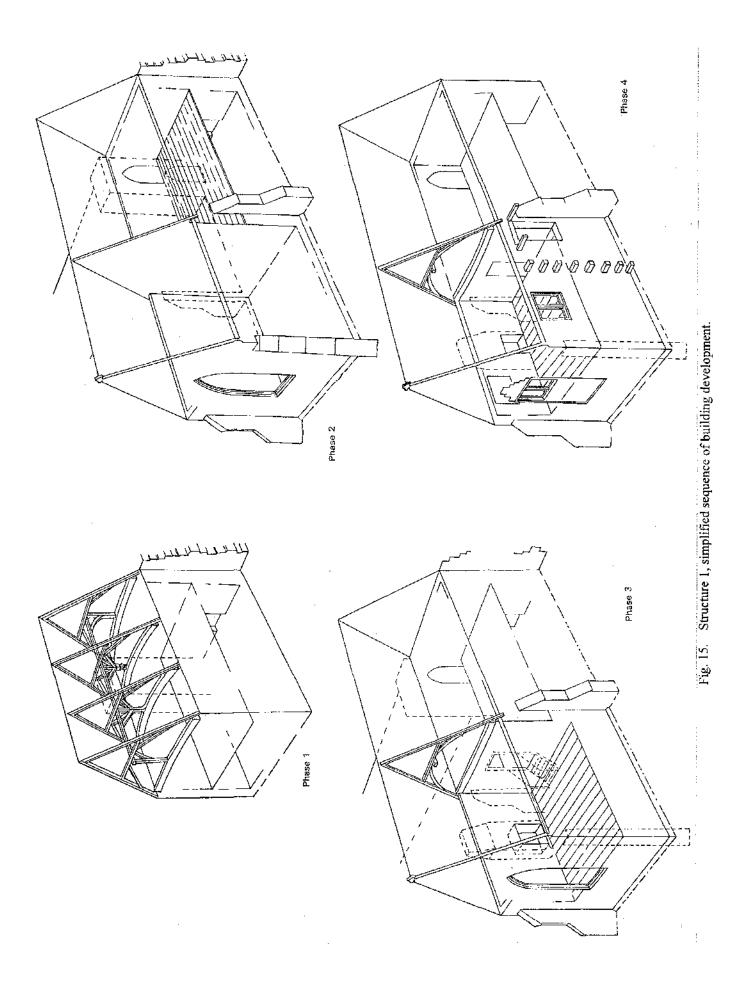
There may have been two ground floor windows towards the east end of the south wall of the building to parallel those in the north wall. The lower windows in the north wall each have internal plain arched heads, and similar stone arches can be seen in the south wall above the cart door, AE 530, and the other above window AE 523. There may, however, have been a door where AE 523 was inserted. Above, the relationship of the three first floor windows with the surrounding wall courses suggest that they are contemporary with the wall fabric and are not later insertions. They have parallels with the window in the northern face (AE 501) and there may originally have been three opposed lights. The fact that there are no redundant mortices in the east face of the easternmost truss of the crown-post roof suggests that the original Structure 1 building did not extend eastward. The comparatively short length of the western crownplate indicates it may have been connected into the roof assembly of the building to the west, only to be cut off when the latter was demolished.

Phase 2

The eastern extension of the Phase 1 building probably involved the demolition of only the east wall of the primary building. The evidence for the addition can be seen in the structural joint which coincides with an external plinth to the east, with the curtailment of the primary floor of the west part of the building. Apart from the difference in style, carpenters' marks on the roof of the added building indicate a newly numbered structure and thus a new building campaign. The eastern addition is marked by the external plinth which includes the buttresses at the corners and just east of the straight joint although the buttresses have been removed on the north side. An initial archheaded window may be indicated by the blocking above AE 514 in the east wall. This would suggest a full-length window and thus no internal floor. Whatever its shape the window was primary, as is shown by the coursing. The lower pair of corbels situated in the east wall may have belonged to this phase.

Phase 3

The presence of a fireplace, door and windows indicates that the eastern section of the building was subsequently divided into two storeys. It can be deduced with reasonable confidence that there were two phases, here Phases 3 and 4, with the floor at different heights. It is unfortunate that on neither occasion were floor joists cut into the walls to leave direct confirmation. The initial insertion of a first floor in the added building was at a level roughly that of the base of the east window and the hearth of the inserted fireplace on the south wall. The 'undercroft' produced by this work may have been used as a storeroom. The floor may have been jointed into a wooden partition between the east and west ends of the building indicated by redundant Phase 2 mortices in the soffit of the easternmost tie-beam of the crown-post roof. The external projection of the fireplace from the wall, which enabled the chimney to by-pass the roof, suggests a later insertion into the original Phase 2 wall. The east window



may have been replaced by a new rectangular window at this stage, or alternatively as part of the next phase of work.

Phase 4

A new first-floor level in the east end of the building is indicated by the base of a doorway, AE 505, cut into the north wall. This would have allowed normal use to be made of the ground-floor room. New rectangular windows were added with AE 529 lighting the ground floor and AE 506, AE 514 and AE 528 the first floor. The fireplace was probably relined with brick to accommodate the new floor level.

A series of external putlog holes suggests that a wooden staircase now provided access to the first-floor of Structure 1 via doorway AE 505. The provision of this entry might be an indication of altered accesses following the demolition of the building to the west (Phase 0).

It is most likely that the rectangular window AE 514 was inserted into the blocking of east window during the Phase 4 alterations. The outer chamfer of the east window incorporated a chamfer which enclosed the blocking and indicates the possible addition of the window during Phase 3. It is also possible that the outer chamfer was a purely decorative part of the blocking and that blocking and outer chamfer were built as one with window AE 514.

Although no evidence was found, the Phase 3 and 4 floor joists were presumably supported at their ends by vertical posts set on stone pads. The Phase 4 floor may have been additionally supported by two corbels built within the blocking of the east window.

Phase 5

Changes to convert the building to agricultural use saw the blocking of redundant windows and doorways, the insertion of cart doors and structural repairs. Three types of blocking can be discerned. Stone blocking was used in windows AE 503 and 504, doorway AE 505 and beneath window AE 514. The firstfloor windows in the west end of the building are blocked with small irregular-sized hand-made bricks, whereas the rectangular windows in the east end of the building are blocked in 2 1/2" thick brick. The upper part of the west wall was demolished and rebuilt in similar-sized brick. Later, the cart doors were enlarged with AE 500 on the north cut through the earlier fabric to eaves height. The north-east buttress and the buttress on the north wall may have collapsed around this time. The western buttress on the south face was probably added in the later 19th century, as may the two rectangular windows, AE 523 and 525, and the two lancet windows, AE 516 and 517, all of which are glazed. Internally a brick wall and a timber half floor were inserted in the west end of the building, and the north and south walls further braced by two sets of internal brick buttresses. The brick wall appears to have performed the function of a truss (Peters 1980, 17-21).

Dating

Dating of the features of the building depends on analysis of the roof and of architectural features such as the windows, and, for the later periods, on the size of bricks. To start with the roof, similar crown-post roofs in the south-east can be approximately dated 1280-1310 (Fletcher and Spokes 1964). Although the crown-post roof is relatively unusual in the west, a detail similar to the dog's tooth decoration on the crown posts has been dated to 1290-1310 at West Bromwich Hall (Wood 1965, 306) and to the late-13th/early-14th century at Manor Farm, Wasperton (Jones and Smith 1958, 26). The dating of the eastern roof is more problematic. Recent research has shown that the collar-rafter roof of the eastern addition is a long-lived design, common throughout the whole of the medieval period. The eastern roof is perhaps best seen as a variant of this class of roof, with soulaces bracing a coliar plate. The oddity is the attempt to form an arch using curved soulaces, this may broadly follow the standard West-Country arch-braced roof of the early-14th century (Beric Morley pers. comm.).

The windows offer good dating evidence. The trefoil and lancetheaded windows in the west section of the building are of a broadly 13th-century type (Fig. 16; Wood 1965, 347–52; 1.loyd 1931, 330). The rectangular windows with double chamfer, AE 528, AE 529, AE 506 (Fig. 17), and triple chamfer, AE 514 (Fig. 18), are of 16th or 17th century date. The lancet-headed windows, AE 516 and 517, are of later medieval design; however, these, along with the rectangular windows with single chamfer, AE 523 and AE 525, are likely to be deliberately archaic later additions (Fig. 19). Of the decorative stonework, only the face on the spandrel of AE 501 was original and *in situ* (Fig. 7).

The fireplace and chimney are of a medieval type (Wood 1965, 262), while the thin profile bricks used to back the fireplace were commonly produced in the 15th or early 16th century. Bricks used in window blocking, above the fireplace, in the west wall, and associated with the cart doors are all 2 ½" thick, a size commonly adopted after the late-17th century. The internal brick buttresses to support the tie-beams of the crownpost roof use 3" bricks and are probably late 18th century or early 19th century. Similarly the use of 4" and 5" brick in the buttress against the north wall probably date from this era of brick taxes (Brunskill and Clifton-Taylor 1977, 49 n. 1).

The remaining wall of the Phase 0 building to the west has no datable features. It must predate the initial Phase 1 building which can be dated to the later 13th century, and may be the uncompleted hall referred to in 1293 when there is a further documentary reference to a building campaign. The additional building of Phase 2 can also be dated to the medieval period on the basis of its roof and probable plan-form, together with the later insertion of the fireplace in Phase 3. The Phase 4 alterations in the east end of the building can be dated to the 16th or 17th century. Phase 5 is not easy to date except for the more modern work. The building of the gable end to the west, and the blocking of many windows probably dates from the 18th century and had certainly occurred by 1785 (Engraving 1). The cart doors also date from this period. The decorated grave slab (Fig. 7) alongside the chimney was recorded in 1825 and 1871 in the south wall of Structure 2 with two other slabs (Engraving 2; Holliday 1871a, pl. 5.6). The tooling of the south-west buttress and windows AE 516 and 517, and AE 523 and 525, is also recent.

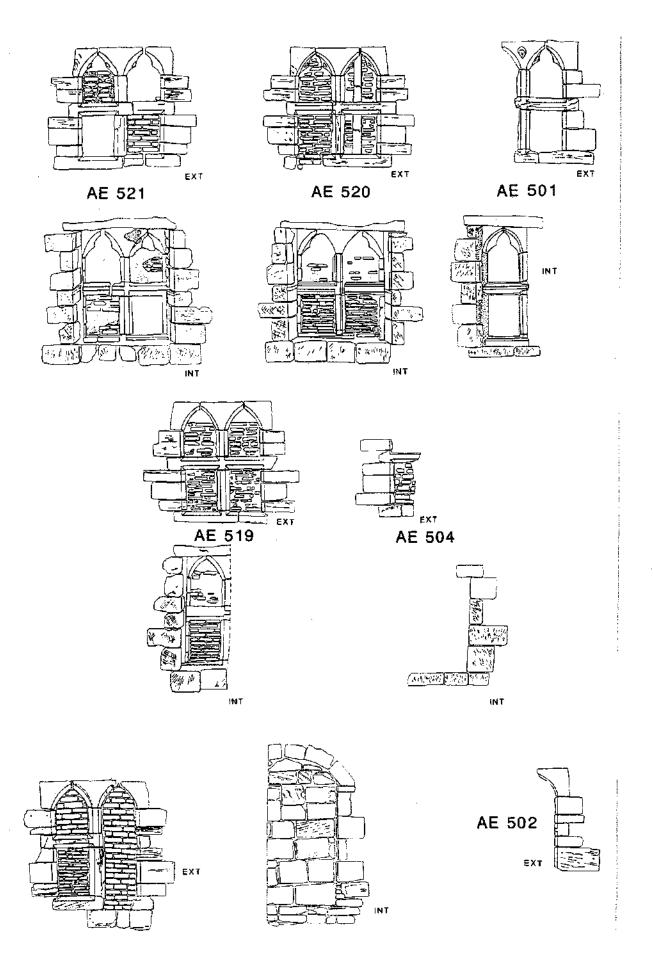


Fig. 16. Structure 1, details of trefoil and lancet-headed windows.

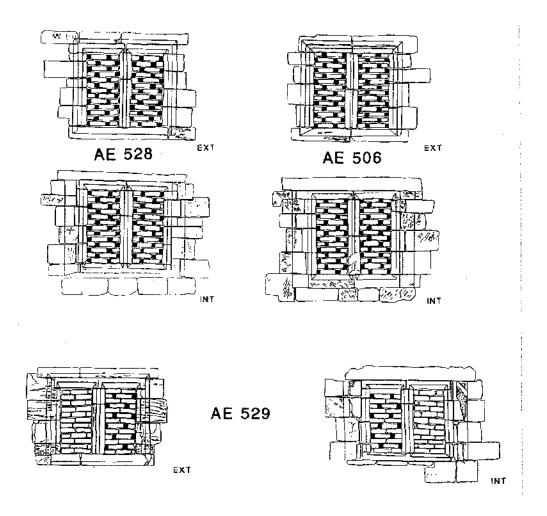


Fig. 17. Structure 1, details of rectangular windows.

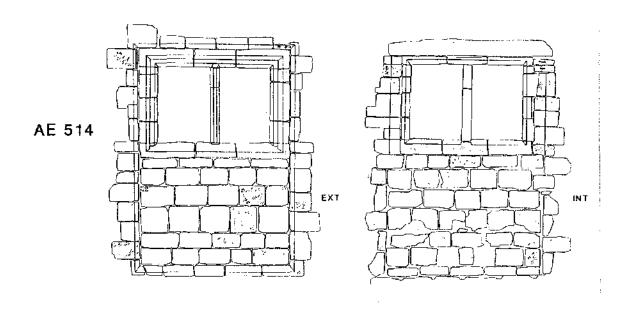


Fig. 18. Structure 1, detail of window AE 514 in east wall.

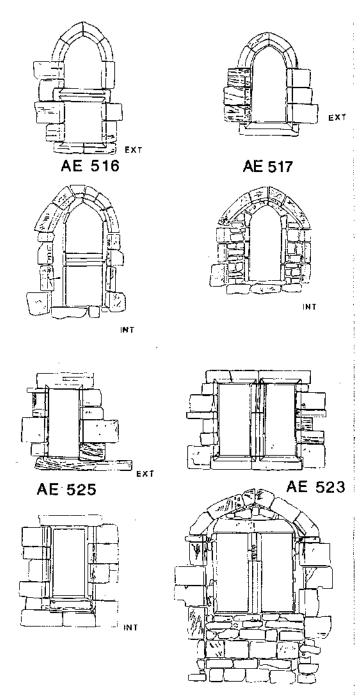


Fig. 19. Structure 1, details of later windows.

Discussion

Suggested functions for the medieval phases of Structure 1 have been as the infirmary, the abbot's lodging or part of the guest complex (VCH 1906, iii, 139; Molyneux 1984, 52 n. 14). Building recording has recognised that the west wall of Structure 1 most probably belonged to an earlier building. Any such building may have only been demolished at the Dissolution, and Structure 1 would thus represent an added range rather than a free-standing medieval building. Any reconstruction of the possible layout of the Phase 0 building must take account of the proximity of the large pond to the south. It would seem most likely that Structure 1 was added to the southern end of a north—south running range.

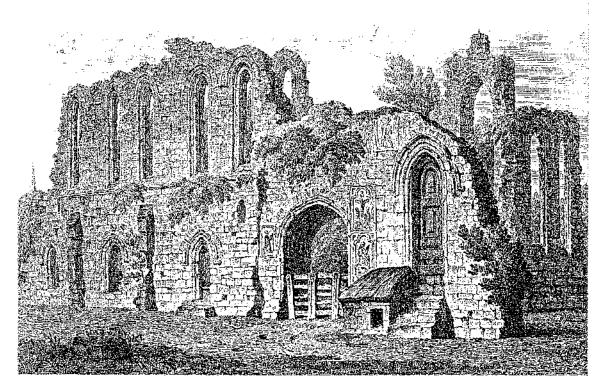
The Phase I building comprised an adequately-lit lower chamber with direct access to the main building and a well-lit first-floor chamber with an impressive roof. Presumably the upper chamber would also have had its principal access from the main building to the west. The absence of a fireplace is, perhaps, surprising, although some form of heating via braziers is possible. However, there was no smoke blackening of the roof, although the tangle of supplementary timbers above the northern cart entry might represent an attempt to fill in the gap where a chimney flue or smoke hood was taken out. Whether heated or not, the Phase 1 structure was intended to add a high quality space to an existing building. To this was added in Phase 2 a room that can be tentatively identified as a chapel with its large window to the east and its use of the full height of the building. The two projecting stones below the window suggest they may have been attachments for an altar.

The location of the putative building west of Structure 1 would suggest that this was the infirmary, which is generally sited in the 12th century east of the south end of the monk's dorter. In the 13th and 14th centuries the infirmary was frequently divided into smaller units and extended. Private additions may have been for obedientaries, senior canons, when ill, for corrodians, men who had paid to live out their last years in the monastery, or possibly as the retired quarters for an abbot. Structure 1 might well represent such an addition, especially since it was located in one of the most removed and private parts of the monastic complex whilst still remaining attached to it.

The addition of a Phase 2 chapel underlines the suggestion that the upper Phase 1 space was a private chamber, which could overlook the services in the private chapel below. The later conversion in Phase 3 of the chapel into a second private chamber might also suggest that the Phase 2 chapel was an addition paid for by a corrodian which was subsequently reorganised on his death.

The Phase 3 first-floor accommodation would then comprise two linked chambers of which at least one was heated. The alteration of the chapel could have been to provide the 'new Chambre' mentioned in the inventory of 1505. The room below the east chamber was probably an undercroft or storage space, although its floor may have lain at a lower level to allow extra headroom.

Phase 4 saw further changes to the east part intended principally to upgrade ground-floor rooms by the provision of a raised ceiling and further windows on each floor, suggesting a domestic function for both levels. Although it is possible to see this upgrading of ground floor rooms in a monastic context, it would seem much more likely, in view of the continued post-medieval domestic use of the building, to see the Phase 4 alterations as intended to create a private dwelling out of the abandoned monastic buildings. An immediately post-Dissolution date for the conversion of Structure 1 is enhanced by the suggestion that the building to the west may have been demolished at this stage. Window arrangements in the east wall are problematic. If there was a large rectangular window between the Phase 2 arch-headed window and the small rectangular window AE 514, then a post-Dissolution date for Phase 4 is certain since any such rectangular window would tend to suggest a 16th-century date at the earliest.



Engraving 2. J. Coney, 1825 (in Dugdale, Monasticon Anglicanum, 1830 edition).

The blocking of several windows in the west part of Structure I with thin bricks suggests the conversion of domestic space to agricultural use. It is possible that the conversion initially involved only the west part of Structure 1, but in the late-17th or early-18th century the whole of Structure 1 was converted into a barn. The rebuild of the upper part of the west wall in brick could be argued to suggest that only then was the building to the west demolished, although the number of repairs and alterations to the post-medieval building would suggest otherwise.

If Structure 1 continued as domestic accommodation after the dissolution into Phase 4, it is unlikely that the building can be equated with the 'mansion of the manor' granted to George

Tuckey, the steward of Sir John Dudley. A better candidate for this is the structure depicted on an engraving by David Parkes made in 1789 of 'The Abbey House' (Engraving 3). There are also other late-18th century views of this building by Benjamin Greene (1739–1798) and Thomas Hearne (1774–1817). In addition to the infirmary ranges the abbot's mansion was one of the buildings within the monastic complex most likely to survive the dissolution. The engravings show a substantial stone building of at least three bays displaying a mixture of arched doorways, rectangular multioned windows and buttresses. The building is situated near a pond at the bottom of a bank with a trackway beside it. There is a close correlation between these observations and the putative structure identified by geophysical survey in the south-west corner of the inner precinct, including the



Engraving 3. D. Parkes, 1789 (in Gentleman's Magazine vol. xix, 1799).

projecting bay (see Fig. 23, below). Holliday noted in 1871 that this building was pulled down some years before the existing farmhouse was built (1871a, 64). However, it should be stressed that while this interpretation is attractive and feasible there is no hard evidence that definitely places the abbot's mansion in this location. So, without excavation of the building to its west, an initial function for Structure 1 as part of the abbey infirmary, while highly likely, can only be suggested.

Structure 2 (Fig. 20)

Description

South of the remains of the church is a 19m-long section of east-west aligned medieval walling, standing in part to c. 7m, now incorporated into the garden wall around the Victorian farmhouse. Five bays of the ground floor wall survive together with a smaller portion of the floor above, lit by tall, coupled lancet windows. The inner jambs of the lancet windows have attached shafts with moulded capitals and bases and internal and external continuous strings and hood moulds. There is a distinct vertical break towards the eastern end of the internal elevation, which is also marked by a slight change in the alignment of the wall towards the north-east.

To the west of the break the walling consists of two tiers of windows each providing light to rooms in a two-storey building of which the bottom storey was a vaulted undercroft. The scars of the vaulting can be seen around the internal faces of the three small, single-light windows situated toward the western end of the wall. Each window is of a similar build with pointed, arched heads, and splayed jambs, although only the westernmost of the three windows still retains its sill. In addition to the scars left by the vaulting, there are scars for two piers or corbels from which the vaulting would have sprung. These are noticeable between each window, the scar to the east now infilled largely with brick, and that to the west now infilled with sandstone blocks. There is no evidence for the ground-floor windows having been glazed, and they may simply have been provided with shutters.

The floor level between the two storeys is marked by a band of green sandstone, the lower build being almost exclusively of red or purple-red sandstone. The upper storey was lit by coupled lancet windows, with angled and internally splayed jambs, of which five survive. The external face of the wall which has a low external plinth, has been strengthened by two, two-stepped, buttresses up to first-floor level only. The tooling of the buttresses suggests they have been refaced, possibly in the Victorian period. A scar in the building fabric to the east, may mark the position of a third buttress, or more probably of the former line of a wall running southwards.

To the east of the break the walling does not survive above a height of c. 2.4m. The east side of a doorway, is formed by a north—south aligned wall, now represented only by a scar, while the west side corresponds with the vertical building break. The form of the stonework arch above the doorway, and the scar left around this feature, suggest the former continuation of

vaulting. A second, smaller, doorway punched through the extreme eastern end of the wall is a later addition.

Interpretation and phasing

The wall formed part of the south wall of the south range of the cloister. This was the normal location of the refectory within Premonstratensian houses, and the decorative lancet windows of Structure 2 suggest that this was situated on the first-floor at Halesowen, in common with a number of other Premonstratensian houses (Clapham 1923, 128). The door to the east may have been part of a through passage with a timber partition to the west. The doorway was inserted in the position of a former window and this may have involved the destruction of some of the vaulting.

The earliest illustration (Engraving 4), dated 1731, was drawn by Samuel and Nathaniel Buck and shows five pairs of the first floor lancet windows surviving with a much greater amount of walling above. An engraving of 1799 shows only three pairs of lancet windows (Engraving 5), while another engraving of 1811 shows a number of carved grave slabs, one of which is now inside Structure 1, built into the wall fabric (Fig. 7). A later, more detailed engraving shows an arch-headed niche cut into the inner wall to the south of the doorway surrounded by the carved grave slabs (Engraving 2).

Structure 3 (Fig. 21)

Description

Structure 3 is a single-storey, open-fronted shelter or cart lodge, currently in a poor state of repair. The building is c. 13m long and 6.75m wide. The apex of the roof is at least 6m above the internal floor level. Open along its south front, it is internally divided into two unequal parts by a north—south aligned crosswall of stone, the eastern bay being the smaller. The western bay is partially sub-divided by a brick pier that supports a later extension to the front of the building. There are two distinct construction breaks within the north wall (Plate 4). The eastern break is vertical, while that to the west is more jagged, represented by the cracking and the opening of jointing along a point of weakness.

The build to the west has a low exterior plinth and is built of regularly coursed grey-green stone. A raked queen-strut roof truss is built directly over a blocked, partially truncated, rectangular window. Bricks of 2 3/4" thickness are used in the roof support trusses and in the southern brick construction in the east gable end, while bricks of 2 1/4-2 1/4" thickness are used for the northern, upper part of the same gable. The east gable wall incorporates several ashlar blocks within its central portion (Plate 14), while internally part of a stringcourse survives. On the north elevation there is a small, rectangular window with. chamfered jambs and a wooden head and a small blocked rectangular window with stone mullion. In the west elevation there is a small rectangular window with chamfered surround and three ventilation, or owl, holes. Details of the surviving elements of the queen-post roof are available in archive drawings.

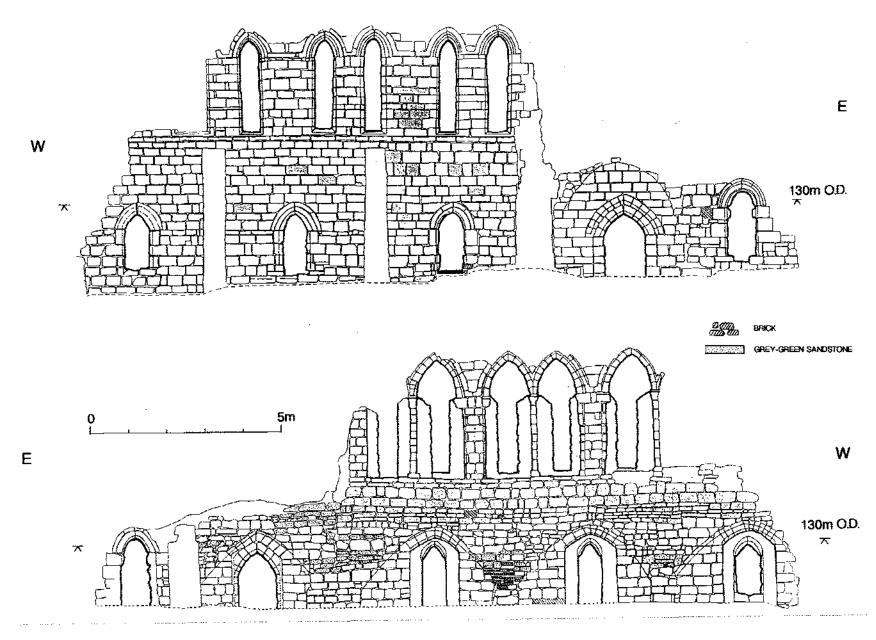
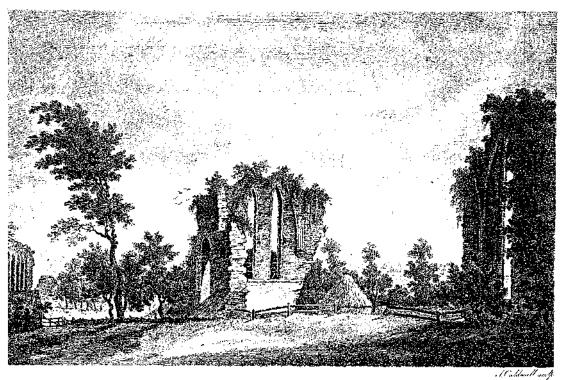


Fig. 20. Structure 2, elevations of south (outer) and north (inner) faces.



Engraving 4. S. and N. Buck, 1731 (in A collection of engravings of castles, abbeys...etc., 1721-1752).



REMAINS OF HALES OWEN ABBEY

Engraving 5. J. Caldwell, 1799 (in Nash, A history of Worcestershire, vol. i).

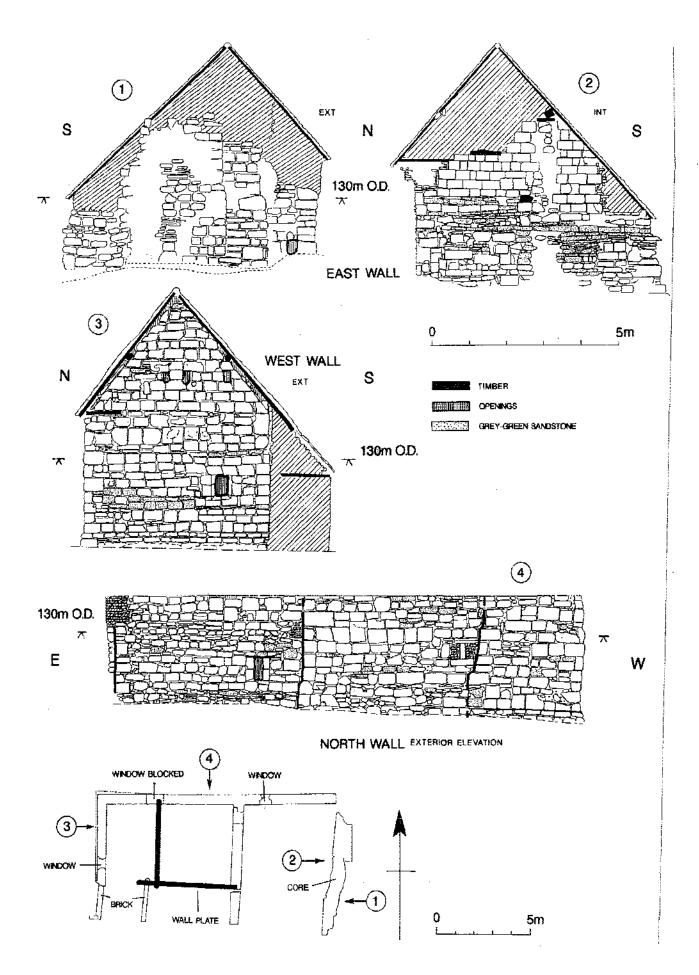


Fig. 21. Structure 3, wall elevations and plan.

Interpretation and phasing

The building is a composite structure representing several periods of build. Extensive reuse of materials complicates its interpretation and phasing. The ashlar blocks in the east gable may represent part of the western return of Structure 2, but this cannot be proved conclusively. The following development may be proposed. The earliest phase of Structure 3 may be represented by a small, free-standing building comprising the internal stone party wall that is bonded to the central portion of masonry that runs westwards from the vertical break in the north wall. This may, possibly, have been a monastic kitchen, as today there is no trace of the oven Holliday suggested was built into the putative west wall of the monastic refectory (1871a, 63). The building was subsequently lengthened using robbed stone from the monastery. The westernmost extension may be the older of the two. The eastern extension may have been intended to join Structure 3 and the west wall of the refectory. Further alterations are represented by the different grades of brickwork. Finally the building was extended c. 1.5m southward.

From the arrangement of the surviving openings it seems unlikely that this structure was ever used for accommodation purposes, and must always have been a farm building in any post-Dissolution use. The roof timbers are suitable for hanging animal feed and hay, and the queen-post type roof could be used for storage above tie-beam level. While the earliest phase may be medieval, the various later phases of construction can probably all be dated to the 17th to 19th centuries.

Structure 4 (Fig. 22)

Description

Structure 4 is divided into seven bays, with a floor over the two easternmost bays creating a loft space mirrored by a smaller loft over the single bay at the west end. Two pairs of opposed wooden cart doors are placed towards the western end of the building, the floor in this bay being stone. Butted up against the southern face of the barn are two brick-built agricultural buildings which form the east and west sides of the farmyard (Structures 4E and 4W). There is access from both of these buildings into each end bay of Structure 4.

Part of the monastic church has survived within Structure 4. The eastern gable end of the barn butts up against the south transept of the monastic church, while parts of the south aisle wall can be seen within the north wall. Within the interior face

of the north wall, two wide archways of medieval build, AE 17 and AE 18, remain in situ into which later features, AE 4 and AE 8, have been inserted. The western archway, AE 18, can be seen within the external face of the north wall. These would have been processional doorways giving access to the church from the cloister and west range (Plate 15).

The rubble build used in much of the wall to the east of the cart door may be the exposed core of the monastic church wall. The lower portions of the sandstone wall to the west of the cart door may also be medicval. The inner face of the west wall of the barn, at least at its lowest level (the unusual thickness of this wall is apparent in plan) may be medieval. The sandstone blocks used elsewhere in the building are probably reused. Timbers of an earlier building survive in the south wall of the central section of the present barn.

Interpretation and phasing

There are three main post-Dissolution phases. An initial building was a small cruck-framed barn. This was then enlarged and virtually rebuilt mainly in 3" thick bricks, pierced by numerous ventilation holes. The present roof arrangement, although obviously reusing timbers, is of a uniform queen-strut type, and was probably contemporary with the brick rebuild, with the exception of the westernmost and easternmost bays of the building, which were probably added later. The building would have been used for the storage and processing of grain crops and hay.

The somewhat idealised Buck drawing of 1731 shows no agricultural buildings at all. The Hooper engraving of 1774 shows, from a distance, a farm building roughly in the position of Structure 3, but detail is lacking. The engraving of 1799 by J. Caldwall, confirmed by engravings of 1801 (Engraving 6) and 1808 by D. Parkes, shows a large barn-like structure, partially hidden behind the wailing of the south transept. While an engraving by Parkes published in 1813 (though it is likely to be somewhat earlier as Parkes had been recorded as drawing at Halesowen as early as 1789) shows the east end of a barn butted up against the south transept wall (Engraving 7). The details of this walling are completely unlike anything visible today, suggesting that much of this face was destroyed when the brick building forming the east side of the farmyard was built up against the long barn. There is a noticeable building break on the later illustration by Parkes, which tends to support the theory of the barn having been extended eastwards at some stage and thus originally not having incorporated the fragments of medieval transept walling.

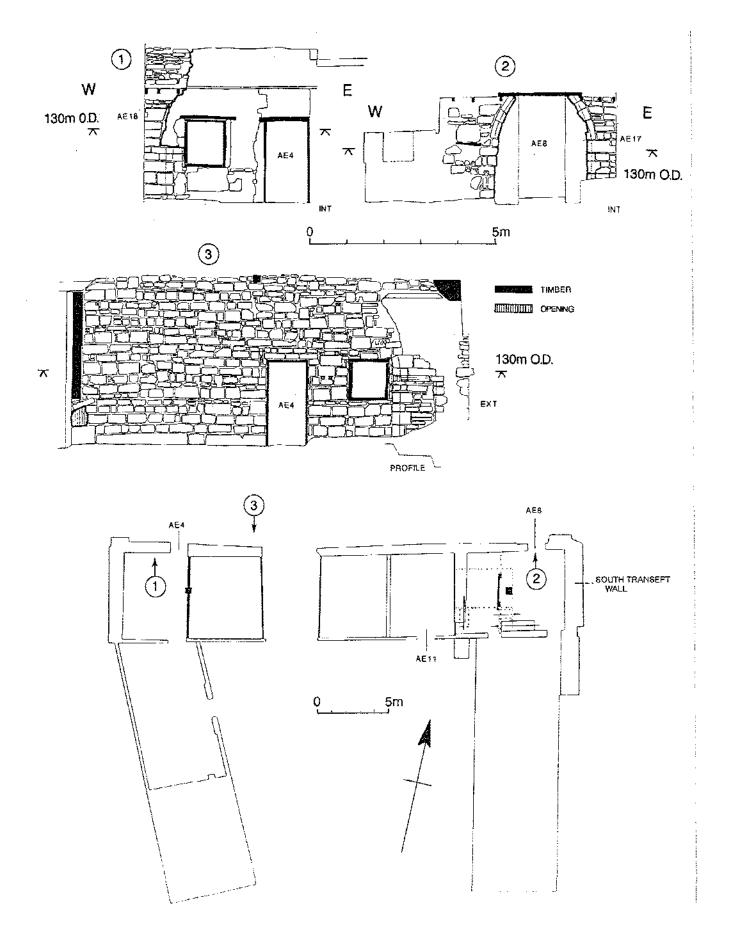
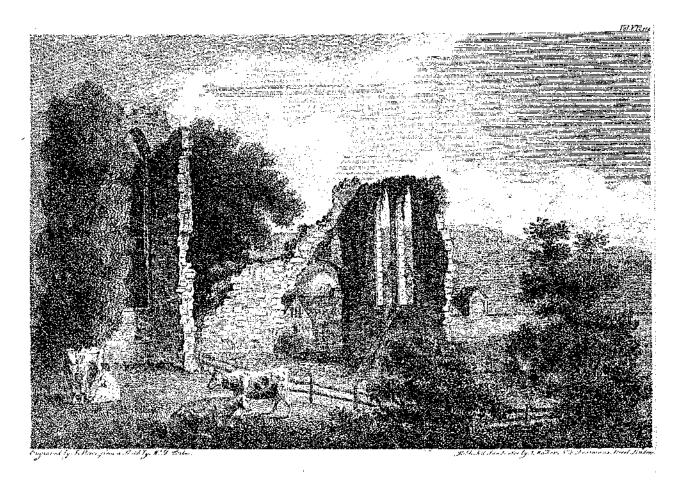


Fig. 22. Structure 4, wall elevations and plan.



HALESOOWEN-ABBEY, Shropshire.

Engraving 6. D. Parkes, 1801 (in The Itinerant, 1801).



Engraving 7. D. Parkes, 1811 (in Briton and Brayley, The Beauties of England and Wales, vol. xiii, 1813).

THE ABBEY PRECINCTS (Fig. 23)

The inner precinct of the abbey was marked by moats, except to the south where the ground falls steeply away. The east moat is still water-filled but only a bank and silted ditch mark the north boundary where the present causeway presumably marks the main medieval entrance. Although nothing is visible on the ground today, a moat on the west side of the precinct is clear on the OS 1st edition map and has been defined by geophysical survey. Both map and survey suggest a second entrance in the south-west corner which led to a group of buildings suggested by geophysical survey and slight earthworks in this area. One of these buildings is a good candidate for the abbot's mansion. Aston (1993) lists other monastic sites surrounded by moats.

Field names Lower Churchyard and Upper Churchyard indicate that the abbey cemeteries lay to the north and the west of the claustral buildings, as is the usual position elsewhere. Geophysical prospection has indicated the buried remains of several structures within the Lower Churchyard. To the east the field name The Garden may indicate the location of the abbey garden.

The outer precinct is less well defined. To the north it may have been marked by Manor Way where the gatehouse is suspected to lie, to the east the boundary may correspond with the east end of the fishponds and the east side of the probable parkland comprising the Abbey Oaks, and to the south by a prominent earthwork which is double-ditched in part. The west side probably lay west of the present sports ground but there are no ground or documentary indications of its position.

There are extensive earthworks associated with the management of local water resources within the valleys to the north and south of the abbey. Three streams feed into the complex system of dams, ponds and leats. A series of at least six ponds follows the east-west fall of the valley to the north of the abbey complex (Fig. 23, nos. 1–6), and a further pond may be indicated on the 1st edition OS map to the west of the causeway leading to the inner precinct (Fig. 23, no. 7). However, the original size of this pond cannot be determined, as the area is now covered by a modern cycle track. An overflow channel and by-pass leat follows the southern edge of the ponds. Near the south-west corner of Pond 4 the leat system consists of a main channel to the moat, an overflow back from the moat to Pond 6 and a bypass-leat from the moat supply to the moat overflow. The small pond (5) slightly to the east of this system may have acted as either a fish or sediment trap or as a breeding pool. South of Pond 6 geophysical prospection has indicated the presence of two structures possibly associated with smoking or storing fish, although one may also be a second gatehouse.

There are three ponds to the south of the claustral buildings. These are now dry but their retaining banks survive as substantial earthworks (Fig. 23, nos. 8–10). Both Pond 9 and Pond 10 would have been the largest ponds within the overall complex enclosing a substantial volume of water. The channel from Pond 10 to the stream in the valley to the west may be related to water-milling as discussed below, and shallow depressions and low platforms immediately west of Pond 9 may represent remains of other mills and tail-races. The small pool (Pond 8) situated nearest to the abbey complex may have had a domestic function associated with the drainage system of the abbey complex which would have flowed from north to south within the inner precinct.

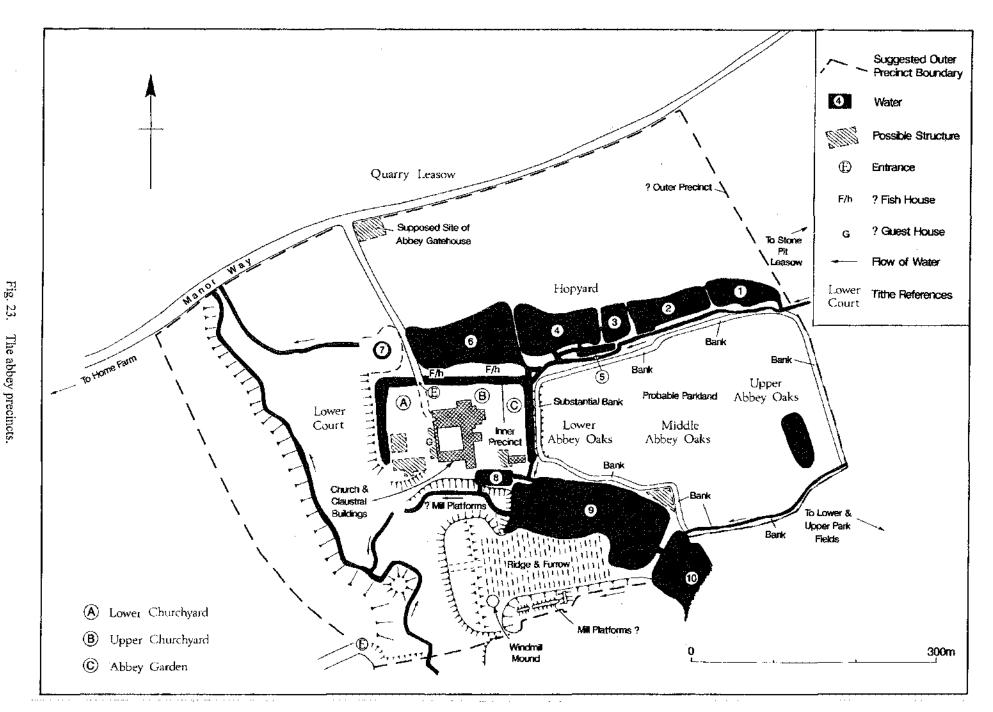
It is likely that the two pond-systems to the north and south of the inner precinct may have had distinct functions, those to the north being devoted to the cultivation of fish, and those to the south being harnessed for power and the disposal of waste from the abbey.

Apart from the fishponds, field survey has indicated the position of a windmill mound. Abbey water mills, known from documentary evidence, may have lain adjacent to the southern boundary of the inner precinct (Holliday 1871a, 64) and also have been associated with the double-ditched southern boundary, which may have acted both as a boundary and as a leat, as at Bordesley Abbey (Rahtz and Hirst 1976, 34). Ridge-and-furrow is clear in the field to its north bounded on the west by a further double-ditched bank. A break in the bank may suggest structural remains. Other field names include Hopyard, suggesting the site of a brewhouse, and First and Near Stockings suggesting woodland clearance.

A landscape survey of the fields surrounding Halesowen Abbey was carried out in 1993. The study area was on land presently held by Lord Cobham. This land was first acquired by the Lyttleton family in 1558. When the tithe map was compiled in the 1840s land around the abbey and Home Farm was leased by Thomas Green. This block of land may represent the home grange holding which had survived relatively intact after the Dissolution. Although the area examined would have been directly dependent on the abbey it was probably managed from the farm now known as the Grange but formerly the Home Farm.

Illey Lane and Lapai Lane and associated trackways leading off Manor Way define the Home Farm holding south of the Manor Way. Both roads follow curvilinear courses and are often accompanied by substantial banks. Manor Way was the main east-west route in the locality that also connected the abbey and the Home Grange. Illey Lane forms a characteristic reversed-S boundary, another similarly-shaped boundary being that of the northern line of fields called Upper and Lower Park situated in the south-east corner of the holding. Further park elements are suggested by curving bank and ditch boundaries still enclosing fields named on the tithe map as Lower, Middle, and Upper Abbey Oaks. Although farms lie immediately outside the estate, in the 19th century the study area was devoid of small farms, presumably reflecting their absence within the abbey estate. The evidence suggests emparkment of the later outer precinct area, perhaps with the fields named the Oaks representing enclosed woodland within the wider park.

The wider study area of the abbey precincts covered the three townships of Lapal, Illey and Hunnington. Apart from the southeast boundary of the study area the estate ignores the township boundaries. It is known that township boundaries are of considerable antiquity, suggesting that the monastic holding comprised one or more earlier units. The evidence suggests that the initial monastic holding comprised the three townships. This was then radically reorganised to ensure communications from the abbey and water supplies to the abbey. Field names and the evidence of boundaries of medieval type therefore support the suggestion that the study area was in fact the home estate of the abbey.



THE ABBEY GRANGES

Thirteen granges were named at the Dissolution as belonging to the abbey, and the majority were retained within the Lyttleton estate, at least until the 19th century (Fig. 24). The following text is based on contemporary and secondary written sources and on 19th-century maps. Much of the data is held on the West Midlands SMR.

Of these named sites, Home Grange can be identified with a site to the west of the abbey at The Grange which may have been moated, and Owley Grange by a moated site at Howley Grange Farm. Owley Grange was first mentioned in 1278, and again in 1415, when it was leased out by the abbey. Offmoor Grange may have been located at Uffmoor Farm where reused stone is visible in an outbuilding (Amphlett 1930, i, lxix). Other nearby sites are also possibilities; at Tack Farm three fields contain the word pool and the land was exempt from tithe payments, while the remains of a moat at Breach Farm suggest a medieval site. Offmoor Grange was first mentioned in the Manor Rolls in 1291 and, like Owley, was leased out in 1415.

Farley Grange can be linked with Farley Farm where a pool on the Tithe map suggests a moat. Farley was first mentioned in 1271 and again in 1415. Warley Grange can be identified with Monks Chapel at Warley where earthworks and field names suggest a moated site (Millard 1994, 19). Warley Grange was first mentioned in 1490, but the Manor of Warley is recorded as having been given twice to Halesowen Abbey, once in 1283, and then again in 1337. Hill Grange was located at Hill where, at the time of the Tithe map, the land was tithe free and noted as 'anciently part of the possessions of the abbey'. There are field names of Lords Croft, Part of Pool, and Coneyberry. The Coombes nearby is also recorded as being exempt from the payment of tithes and was the site of the abbey's coalmines documented from 1307 when a mining lease was granted to the abbot for 'La Combes'.

Radewell Grange or Rudhall can be identified as Redhall Farm where there are map indications of a moat (VCH 1906, iii, 146). It was first mentioned in 1332 and was leased out in 1414 and 1490. Blakeley Grange was at Blakeley Hall Farm where there was a moat, chapel and water mill (VCH 1906, iii, 146). It was first referred to in 1291, and was subsequently leased out on several occasions including 1414. Field names include Mill, Moat Leasow, and Lime-Kiln Leasow. Whitley Grange was in Hawne where the abbey held a number of fields and where the field names suggest an industrial function. New Grange was at Newhouse Farm, now Daleswood Farm, where a medieval building is known. Field names include Mill, Castle and Great Castle Hill, Brandhall Grange can be identified as Brandhall

Farm. It was first documented in 1320–21 as a moated site, with a chapel. The ploughing up of foundations in a field called Chapel Croft was recorded in 1900. Chapel Croft was the site of St. Katherine's Chapel. Other field names include Townabrook and Ash Field. There may have been another farm dependent on Brandhall. A moated site with moat field names lies nearby on land held separately in 1845. The location of Pircote Grange is uncertain although Oldwindford has been suggested (Nash 1781). Pirsote was first mentioned in 1291. Hamstead Grange may have been on the abbey's land at Blakeley (Nash 1781).

Two other holdings may have been dependent granges. Friar Park still has the same name. There was reputedly a moated site and chapel there until the 19th century (Reeve 1836). It was first mentioned in 1242 and a park is documented in 1307, Illey Grange may have lain near Illey. A tithe barn is documented in 1505.

The abbey and its subordinate estates were passed to the Lyttletons in 1538, and it is of interest to see the extent to which the integrity of the estate was maintained until the 19th century at, for instance, the granges at Brandhall, Hill, Whitley, Home, Tack Farm and the Coombs. The exploitation of a mixed farming economy of arable, pasture, meadow and woodland at the Granges would have been organised to yield a surplus from lands which were often difficult to farm. This ability to be flexible, and to farm the marginal lands, may be reflected in the variety of crops grown on the abbey granges. Some may have had specialist functions. Mill sites are suggested by field names at New Grange and at Blakeley Grange. Fisheries are indicated by the abbey fishponds and possible sites at Warley, Hill, and Brandhall Granges. Rabbit warrens are suggested at Hill and the exploitation of game by the park field names near the abbey and by Friar Park. The presence of a mining establishment in the parish of Hill, as early as 1307, demonstrates that the economy of Halesowen was not solely dependent on agriculture.

The leasing of five of the granges in 1414–15 indicates a change to a more cash-centred economy in the later medieval period. Chapels at some of the more distant estates at Brandhall, Warley, and Blakeley Granges may suggest that these sites had become more independent and serviced permanent communities with slighter links with the religious life of the abbey itself, Brandhall may have had its own dependent grange nearby, represented by the field name Moat House Building. The surrounding fields Little Money Moreton and Great Stony Moreton suggest either a settlement deserted to make way for new buildings or a dependent peasant community.

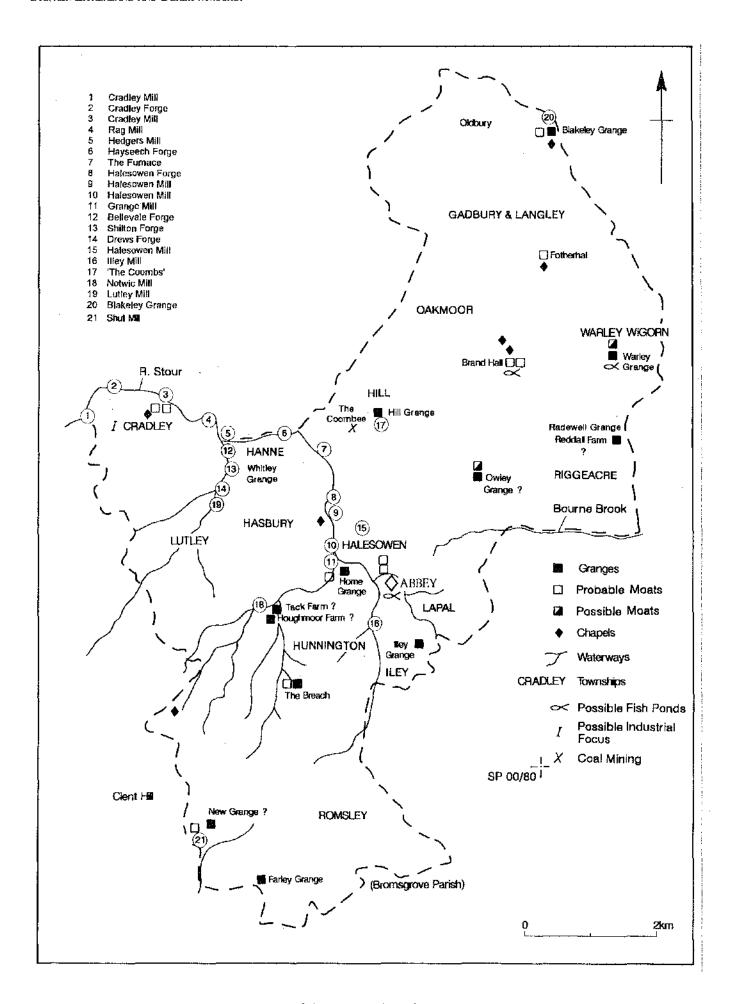


Fig. 24. Location of abbey and its dependent granges and estates.

CONCLUSIONS

To the interested observer the most striking feature of Halesowen Abbey is the fine series of fishponds and associated earthworks within the inner and outer courts. The abbey ruins themselves, while once the nucleus of the monastic community, seem now to be subsumed within the buildings which represent the last working phase of the site as a farm. However, despite its relatively late foundation, limited subsequent survival and with a little bit of imagination, it can be seen that Halesowen Abbey in many ways represents the ideal rural monastery. The abbey is situated at the confluence of two streams, providing shelter, defence, fresh water and power, while the surrounding estates provided timber, stone, and land for cultivation, in addition to mineral resources such as coal. A measure of the success of the venture was that although Halesowen was one of the last Premonstratensian foundations in this country, the abbey quickly grew to be one of the most prosperous.

A decade ago Professor L. A. S. Butler outlined the potential at Halesowen to combine architectural analysis and geophysical survey to combine the visible and invisible evidence (1989, 12). Both non-intrusive techniques, together with landscape survey and documentary research, have formed the backbone of this most recent chapter of archaeological work in and around the abbey. Some new evidence has been found for the archaeology of the Premonstratensian Order, particularly regarding questions concerning relationships between the nucleus of the community and the outlying granges and estates, and parallels and differences with the much more studied Cistercian Order. The surviving buildings can also be read for evidence of changing social meaning within the monastic community. For example, some tension seems to be discernible between the austere rule of the order and the grandiose plan of the nave of the church, possibly a reflection of a more relaxed attitude to architectural austerity in the mid-13th century and parallel with changes in Cistercian churches by this date. It is also tempting to place the various alterations made to Structure I within the context of the decline of the coenobitic ideal of communal life, and its replacement by notions of privacy and greater comfort.

Archaeology has shown that the infirmary ranges and abbot's lodgings are particularly good parts of a monastery to search for evidence of these changes and to begin to analyse the

agencies and forces shaping this change (e.g. Fountains Abbey, Yorkshire — Coppack 1993, 71-2, 109). A priority for further work should be to trace evidence of the putative main range of the building once to the west of Structure 1, and also, though perhaps to a lesser extent, the location of the putative abbot's mansion to the west. This may offer the opportunity to finally and conclusively answer the question concerning the function of what is the best-preserved building on the abbey site. Improvements in geophysical survey techniques in recent years also suggest that a comprehensive survey of the inner and outer courts of the abbey has enormous potential for further research, particularly into broader aspects of landscape analysis, possibly linked to environmental and plant species survey. Geophysical survey could also be targeted towards investigation of the industrial sites within the abbey complex, in particular the mills, which may then open vistas for exploring the interrelationship of the monastic communities and the growth of industry in the West Midlands, the potential of which was highlighted by the excavations at Bordesley Abbey (Rahtz and Hirst 1976).

Finally, recording and analysis of Structure 1 was the main component of work and forms the centrepiece of this report. Detailed recording was necessary in order to understand the building and inform the process of repair. It was believed (in 1987-88) that a stratigraphic approach offered a means of deducing the building's structure, in theory, with more confidence than by traditional intuitive methods. The process of recording soon highlighted the complexity of the building and it became clear that the existing palimpsest was hard enough to understand without confusing the issue by adding or subtracting anything new. Beric Morley, then the English Heritage Inspector in charge of Halesowen Abbey, decided that the building was to be conserved as it was found, without resorting to unpicking or rebuilding. No surveyor of historic buildings should expect to be able to answer every question thrown up by the examination of a building. There are several unanswered questions concerning the development of Structure 1, but because it has not been tampered with as a document, the evidence is there to be studied anew. For like John Ruskin in The Stones of Venice 'we must take some pains... to read all that is inscribed or we shall not penetrate into the feeling either of the builder or of his time'.

Appendix Medieval Tiles by Lynne Bevan

Two fragmentary tiles (Fig. 25a and b) were recovered, both of which have previous parallels at Halesowen Abbey where they were most likely to have been made during the early years of the 14th century (Eames 1980 [1], 165).

Fig. 25a is one of an exclusive series of tiles from Halesowen Abbey (Eames 1980 [1], 161). Comparison with a previous, but less-complete, example (Eames 1980 [2], design no. 1346), revealed that the scated figure depicted is probably St. Peter, based upon the large key he is holding and the subject matter of another three tiles in the series which feature Christ and possibly two other saints, each seated on thrones and enclosed by architectural canopies, probably designed to represent heaven. While most of the canopy has been lost on the new example, the throne, with its trefoil decoration and carved arm is much better-preserved, as is the central panel of the tile on which the saint's face is clearly visible, revealing that the saint's head was actually inclined, rather than facing towards Christ, as previously suggested by the published example which was based upon a tile with greater surface damage.

This series of tiles 'can be regarded as to some extent comparable to the king, queen and bishop panels at Chertsey' (Earnes 1980 [1], 161) which were believed to have been made as part of the elaborate works conducted by Edward I to commemorate his queen, Eleanor of Castille, who died in 1290 (*ibid.* 165). This series was being made at Chertsey at the same time as the 'Tristram' series discussed below (*ibid.* 165) and it is tempting to think that the design inspiration for the Christ, saints and angels series also came from Chertsey, together with the dies for the Tristram series of tiles. An early-14th century date has been suggested for the Halesowen series based upon an even closer parallel from the Archbishop panel at Winchester, which includes a series of designs featuring figures under architectural canopics (Eames 1980 [1], 165).

Fig. 25b is a very fragmentary version of a tile in a series illustrating the story of 'Tristram and Isolde', previously recorded at Halesowen Abbey but recovered in greater quantities from Westminster Chapter House, Winchester Cathedral and Chertsey (Earnes 1980 [2] design no. 498). Earnes has suggested that the 'Tristram' series might have originally been commissioned by Henry III for use in his private rooms of his principal residences and that the series was then subsequently used at ecclesiastical sites (Earnes 1980 [1], 164). The square Tristram tiles from Halesowen are believed to have been manufactured during the early years of the 14th century, using dies sent from the kiln at Chertsey where round versions of the Tristram series were made in the 1290s (Earnes 1980, 165). The dies are believed to have been sent to Halesowen for incorporation in the Abbey Nicholas pavement which was designed before 1298 (Earnes 1980 [1], 165).





- Substantial fragment from a square tile, the edges of which have all been lost. The tile shows a seated figure, almost certainly St. Peter, holding a large key, and enclosed by an architectural canopy. Dimensions: 170mm × 158mm × 40mm. Fig. 25a.
- Corner fragment of a square tile showing part of a human figure whose right leg emerges from the hem of a tunic. A scabbard is visible behind the standing figure. The tile has retained traces of yellow and olive glaze on its worn surface. Dimensions: 90mm × 70mm × 40mm. Fig. 25b.



Fig. 25. Floor tiles from Halesowen Abbey.

References

- Amphlett, J., 1930 Court rolls of the manor of Hales, 1272-1307, (Vols. i and ii).
- Aston, M. A., 1993 Monasteries, London.
- Bond, C. J., 1993 The Premonstratensian order: a preliminary survey of its growth and distribution in medieval Europe, in M Carver (ed.) In search of cult, archaeological investigations in honour of Philip Rahtz, Woodbridge, 153-82.
- Brakspear, H., 1906 Plan of Halesowen Abbey, Archaeol Journ, 63, 252.
- Brunskill, R., and Clifton-Taylor, A, 1977 English brickwork, London.
- Butler, L. A. S., 1989 Objectives of monastic archaeology, in Gilchrist and Mytum (eds.) *The archaeology of rural monasteries*, BAR 203, Oxford.
- Clapham, A. W., 1923 The architecture of the Premonstratensians with special reference to their buildings in England, Archaeologia, 73, 117-46.
- Colvin, H. M., 1951 The white canons of England, Oxford.
- Coppack, G., 1993 Fountains Abbey, London.
- Dugdale, W., 1825 Monasticon Anglicanum, 2, vol. 6 (London), 926.
- Eames, M., 1980 Catalogue of Medieval Lead-Glazed Earthenware Tiles in the Department of Medieval and Later Antiquities. Volumes 1 and 2. British Museum, London.
- Ferris, I., 1987 Halesowen Abbey building survey, unpub. BUFAU report 8.
- Ferris, I., 1990 Building recording at Halesowen Abbey, unpub. BUFAU report 105.
- Fletcher, J. M., and Spokes, P.S., 1964 The origin and development of crown post roofs, *Medieval Archaeol*, 8, 152-83.
- Gasquet, F. A., 1904-6 Collecteanea anglo-premonstratensia, Camden Society, 3rd series, 6, 10 & 12.
- Harris, R., 1989 The grammar of carpentry, Vernacular Architecture, 20, 1-8.
- Hilton, R. H., 1966 A medieval society, London.
- Holliday, J. R., 1871a Hales Owen Abbey, Trans Birmingham and Midland Institute, 2, 49-72.
- Holliday, J. R., 1871b Decorative pavement tiles on the site of Hales Owen Abbey, Archaeol Journ, 28, 244-6.
- Hunt, J., 1979 A history of Halesowen Abbey, Dudley.
- Jones, S. R., and Smith, J. T., 1958 Manor Farm, Wasperton, Transactions Birmingham Archaeol Soc, 76, 19-28.

- Learmonth, G. S., and Heath, W. R. I., 1995 Manor Farm, Halesowen: survey of farm buildings 1990/1994-5, Univ Birmingham, unpub paper.
- Lloyd, N., 1931 A history of the English house, London.
- Marsden, A. P., 1986a Halesowen Abbey an historical and archaeological assessment, unpub. BUFAU report 7.
- Marsden, A. P., 1986b St Mary's Abbey, Halesowen: proposals for presentation, management and exploration of the abbey site, unpub. MA thesis, Univ Birmingham.
- Millard, D. S., 1994 The granges of St. Mary's Abbey, Halesowen, West Midlands, Univ Birmingham, unpub. paper.
- Millard, D. S., and Smith, J. A., 1994 Halesowen survey project 1994, Univ Birmingham, unpub. paper.
- Molyneux, N. A. D., 1984 A late thirteenth century building at Halesowen Abbey, Trans Worcs Archaeol Soc, 9, 45-53.
- Moscrop, D., 1993a Landscape survey of the fields surrounding St Mary's Abbey, Halesowen, Univ Birmingham, unpub paper.
- Moscrop, D., 1993b Geophysical survey: a follow up to field survey at St Mary's Abbey, Halesowen, Univ Birmingham, unpub paper.
- Nash, T.R., 1781 Collections for the history of Worcestershire.
- Peters, J. E. C., 1980 The wall as a truss in farm buildings, Vernacular Architecture 11, 17-21.
- Rahtz, P., and Hirst, S., 1976 Bordesley Abbey, BAR 23, Oxford.
- Razi, Z., 1980 Life marriage and death in a medieval parish: economy and demography in Halesowen, 1270–1400, Cambridge.
- Reeve, J., 1836 The history and topography of West Bromwich and its vicinity.
- Rodwell, W. J., 1981 The archaeology of the English church, London,
- Ruskin, J., 1853 The stones of Venice, in Cook and Wedderburn (eds.) 1904, The works of John Ruskin Vol 10, London.
- Schubert, H. K., 1957 History of the British iron and steel industry c. 450 BC 1775 AD, London.
- Somers, F., and Somers, K. M., 1932 Halas, Hales Owen, Halesowen.
- Somers, F., 1938 Recent discoveries on the site of Hales Owen Abbey, *Trans Worcs Archaeol Soc*, 15, 82–3.
- VCH 1906 Victoria history of the county of Worcestershire, Vols ii and iii, London.
- Wilson, R. A., 1933 Court rolls of the manor of Hales, vol. iii.

Index

abbey	arch-braced roof 23
archaeological study 39	archaeological assessment 1
architectural	architectural
analysis 39	analysis 39
records 5	records 5
cemeteries 35	Augustinian rule 7
location of 35	-
documentary	
evidence 7	Benedictine houses 7
research 39	Bishop of Winchester 7
estate	Bishop Redman 7
control of 37	Blakeley Grange 37
functions 37	bloom smithy 9
function 21, 23, 26–8, 32, 39	Blount, Thomas 9
garden 35 location of 35	Botetourt,
geophysical survey 39	Joan 9
granges 37	John 9
Blakeley Grange 37	braces 19, 20
Brandhall Grange 37	Brakspear, H. 1
crops grown 37	Brandhall Grange 37
Farley Grange 37	braziers 26
functions of 37	brewhouse 35
Hamstead Grange 37	brick taxes 23
Hill Grange 37	bricks
Home Grange 37	dating 23
identification of 37	size 23, 28 building recording 1
Illey Grange 37	aims of 1
leasing of 37	building trade 8
New Grange 37	burial records 9
Offmoor Grange 37	Burnell, Sir Hugh 9
Owley Grange 37	Butler, Professor L. A. S. 39
Pircote Grange 37	buttress 10, 20, 21, 23, 27, 28
Radewell Grange 37	
Warley Grange 37	
Whitley Grange 37	canons for Halesowen 7
landscape	carpenters' marks 19, 21
analysis 39 survey 35, 39	cart door 1, 10, 20, 21, 23, 32
location 39	cartulary 7
mill 7	cellarer 6
precincts 35	cemeteries
boundaries 35	location of 35
physical 35	chamfer 10, 20, 21, 23, 28
township 35	chapel 6, 7, 21, 26, 37
definition of 35	Chertsey 40
features 35	chimney 21, 23, 26
landscape survey 35	dating 23
water resource management 35	flue 26
relationship with granges 39	Cistercian Order 7, 39
resources 39	cloister 5, 6, 28, 32
ruins 1, 39	closed trusses 19
recorded descriptions 1	coal mining 9
social change 39	Cobham, Lord 9, 35
Abbey Oaks 35	collar plate 20, 23
Abbot	collar-rafter roof 23
abbot's lodging 9, 26, 39	truss 20
abbot's mansion 27, 35 Bruges 7	common-rafter
of Dale 7	roof 14
of Langdon 7	truss 20
of Shap 7	conservation 39
of Welbeck 9	consumption of food 9
aisles	
	conversi 6, 7, 21, 26, 27
explanation of 6	conversi 6, 7, 21, 26, 27 corbels 10, 21, 23, 28
explanation of 6 ale-brewing 8, 35	

crown	Farley Grange 37
plate 19, 20	functions of 37
posts 19, 20	Hamstead Grange 37
crown-post	Hill Grange 37
roof 14–19, 20, 21, 23	Hotne Grange 37
trusses 19	identification of 37
cultivation of fish 8, 35, 39	Illey Grange 37
	leasing of 37
dams 35	New Grange 37 Offmoor Grange 37
dating	Owley Grange 37
Structure 1 23, 26, 27	Pircote Grange 37
chimney 23	Radewell Grange 37
fireplace 23	Warley Grange 37
roof 23	Whitley Grange 37
walls 23	grants 7
windows 23	grave slab 10, 23, 28
dies 40	Green, Thomas 35
documentary evidence 7	guest house 6, 26
cartulary 7	
Court Rolls 7	
research 39	Hagley Muniments 7
dog's tooth decoration 19, 23	Hales manor 7
doorway 20, 21, 23, 27, 28, 32 dormitory 6	Harnstead Grange 37
drainage system 35	Henry H 7
Dudley,	V 9
Lord of 9	Hill Grange 37
Sir John 27	historical
Sir Robert 9	assessment [
Duke of Rutland	background 7
excavations 1	Holliday, J. R. 1, 7
dyers 9	Home Grange 37
	Hundred Rolls 7
4 . II Str. 4	
east wall, Structure 1	TII (7 AP
construction 10	Illey Grange 37
construction 10 rebuilding 10	income 7
construction 10 rebuilding 10 Edward I 7, 9	income 7 infirmary 6, 26, 27, 28, 39
construction 10 rebuilding 10	income 7 infirmary 6, 26, 27, 28, 39 iron
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39	income 7 infirmary 6, 26, 27, 28, 39 iron production 9
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39	income 7 infirmary 6, 26, 27, 28, 39 iron
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39	income 7 infirmary 6, 26, 27, 28, 39 iron production 9
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39 excavations 1	income 7 infirmary 6, 26, 27, 28, 39 iron production 9 ironmongers 9
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39 excavations 1 Farley Grange 37 field names 35, 37 fireplace 10, 21, 23, 26	income 7 infirmary 6, 26, 27, 28, 39 iron production 9
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39 excavations 1 Farley Grange 37 field names 35, 37 fireplace 10, 21, 23, 26 dating 23	income 7 infirmary 6, 26, 27, 28, 39 iron production 9 ironmongers 9 King John 7
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39 excavations 1 Farley Grange 37 field names 35, 37 fireplace 10, 21, 23, 26 dating 23 fishponds 8, 35, 39	income 7 infirmary 6, 26, 27, 28, 39 iron production 9 ironmongers 9 King John 7
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39 excavations 1 Farley Grange 37 field names 35, 37 fireplace 10, 21, 23, 26 dating 23 fishponds 8, 35, 39 fisheries 37	income 7 infirmary 6, 26, 27, 28, 39 iron production 9 ironmongers 9 King John 7 kitchen 32
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39 excavations 1 Farley Grange 37 field names 35, 37 fireplace 10, 21, 23, 26 dating 23 fishponds 8, 35, 39 fisheries 37 Fitton, Sir Richard 9	income 7 infirmary 6, 26, 27, 28, 39 iron production 9 ironmongers 9 King John 7 kitchen 32 landscape analysis 39
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39 excavations 1 Farley Grange 37 field names 35, 37 fireplace 10, 21, 23, 26 dating 23 fishponds 8, 35, 39 fisheries 37 Fitton, Sir Richard 9 food production 8	income 7 infirmary 6, 26, 27, 28, 39 iron production 9 ironmongers 9 King John 7 kitchen 32 landscape analysis 39 survey 39
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39 excavations 1 Farley Grange 37 field names 35, 37 fireplace 10, 21, 23, 26 dating 23 fishponds 8, 35, 39 fisheries 37 Fitton, Sir Richard 9 food production 8 Forest of Kinver 7	income 7 infirmary 6, 26, 27, 28, 39 iron production 9 ironmongers 9 King John 7 kitchen 32 landscape analysis 39 survey 39 lay brethren 6, 7
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39 excavations 1 Farley Grange 37 field names 35, 37 fireplace 10, 21, 23, 26 dating 23 fishponds 8, 35, 39 fisheries 37 Fitton, Sir Richard 9 food production 8 Forest of Kinver 7 friezes	income 7 infirmary 6, 26, 27, 28, 39 iron production 9 ironmongers 9 King John 7 kitchen 32 landscape analysis 39 survey 39 lay brethren 6, 7 leatherworking 8
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39 excavations 1 Farley Grange 37 field names 35, 37 fireplace 10, 21, 23, 26 dating 23 fishponds 8, 35, 39 fisheries 37 Fitton, Sir Richard 9 food production 8 Forest of Kinver 7 friezes dog-tooth decoration 19	income 7 infirmary 6, 26, 27, 28, 39 iron production 9 ironmongers 9 King John 7 kitchen 32 landscape analysis 39 survey 39 lay brethren 6, 7 leatherworking 8 leats 35
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39 excavations 1 Farley Grange 37 field names 35, 37 fireplace 10, 21, 23, 26 dating 23 fishponds 8, 35, 39 fisheries 37 Fitton, Sir Richard 9 food production 8 Forest of Kinver 7 friezes	income 7 infirmary 6, 26, 27, 28, 39 iron production 9 ironmongers 9 King John 7 kitchen 32 landscape analysis 39 survey 39 lay brethren 6, 7 leatherworking 8 leats 35 lintel, timber 10
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39 excavations 1 Farley Grange 37 field names 35, 37 fireplace 10, 21, 23, 26 dating 23 fishponds 8, 35, 39 fisheries 37 Fitton, Sir Richard 9 food production 8 Forest of Kinver 7 friezes dog-tooth decoration 19	income 7 infirmary 6, 26, 27, 28, 39 iron production 9 ironmongers 9 King John 7 kitchen 32 landscape analysis 39 survey 39 lay brethren 6, 7 leatherworking 8 leats 35 lintel, timber 10 Lord
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39 excavations 1 Farley Grange 37 field names 35, 37 fireplace 10, 21, 23, 26 dating 23 fishponds 8, 35, 39 fisheries 37 Fitton, Sir Richard 9 food production 8 Forest of Kinver 7 friezes dog-tooth decoration 19 fulling mill 9	income 7 infirmary 6, 26, 27, 28, 39 iron production 9 ironmongers 9 King John 7 kitchen 32 landscape analysis 39 survey 39 lay brethren 6, 7 leatherworking 8 leats 35 lintel, timber 10 Lord Cobham 9, 35
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39 excavations 1 Farley Grange 37 field names 35, 37 fireplace 10, 21, 23, 26 dating 23 fishponds 8, 35, 39 fisheries 37 Fitton, Sir Richard 9 food production 8 Forest of Kinver 7 friezes dog-tooth decoration 19 fulling mill 9	income 7 infirmary 6, 26, 27, 28, 39 iron production 9 ironmongers 9 King John 7 kitchen 32 landscape analysis 39 survey 39 lay brethren 6, 7 leatherworking 8 leats 35 lintel, timber 10 Lord
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39 excavations 1 Farley Grange 37 field names 35, 37 fireplace 10, 21, 23, 26 dating 23 fishponds 8, 35, 39 fisheries 37 Fitton, Sir Richard 9 food production 8 Forest of Kinver 7 friezes dog-tooth decoration 19 fulling mill 9	income 7 infirmary 6, 26, 27, 28, 39 iron production 9 ironmongers 9 King John 7 kitchen 32 landscape analysis 39 survey 39 lay brethren 6, 7 leatherworking 8 leats 35 lintel, timber 10 Lord Cobham 9, 35 of Dudley 9
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39 excavations 1 Farley Grange 37 field names 35, 37 fireplace 10, 21, 23, 26 dating 23 fishponds 8, 35, 39 fisheries 37 Fitton, Sir Richard 9 food production 8 Forest of Kinver 7 friezes dog-tooth decoration 19 fulling mil! 9 game exploitation 37 garden 35	income 7 infirmary 6, 26, 27, 28, 39 iron production 9 ironmongers 9 King John 7 kitchen 32 landscape analysis 39 survey 39 lay brethren 6, 7 leatherworking 8 leats 35 lintel, timber 10 Lord Cobham 9, 35 of Dudley 9 of Wcoley 9
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39 excavations 1 Farley Grange 37 field names 35, 37 fireplace 10, 21, 23, 26 dating 23 fishponds 8, 35, 39 fisheries 37 Fitton, Sir Richard 9 food production 8 Forest of Kinver 7 friezes dog-tooth decoration 19 fulling mill 9 game exploitation 37 garden 35 garderobes 21 gatehouse 35 geology 1	income 7 infirmary 6, 26, 27, 28, 39 iron production 9 ironmongers 9 King John 7 kitchen 32 landscape analysis 39 survey 39 lay brethren 6, 7 leatherworking 8 leats 35 lintel, timber 10 Lord Cobham 9, 35 of Dudley 9 of Wcoley 9 Lower Churchyard 35
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39 excavations 1 Farley Grange 37 field names 35, 37 fireplace 10, 21, 23, 26 dating 23 fishponds 8, 35, 39 fisheries 37 Fitton, Sir Richard 9 food production 8 Forest of Kinver 7 friezes dog-tooth decoration 19 fulling mill 9 game exploitation 37 garden 35 garderobes 21 gatehouse 35	income 7 infirmary 6, 26, 27, 28, 39 iron production 9 ironmongers 9 King John 7 kitchen 32 landscape analysis 39 survey 39 lay brethren 6, 7 leatherworking 8 leats 35 lintel, timber 10 Lord Cobham 9, 35 of Dudley 9 of Weoley 9 Lower Churchyard 35 Lyttleton
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39 excavations 1 Farley Grange 37 field names 35, 37 fireplace 10, 21, 23, 26 dating 23 fishponds 8, 35, 39 fisheries 37 Fitton, Sir Richard 9 food production 8 Forest of Kinver 7 friezes dog-tooth decoration 19 fulling mill 9 game exploitation 37 garden 35 garderobes 21 gatehouse 35 geology 1 geophysical survey 39 granges 37	income 7 infirmary 6, 26, 27, 28, 39 iron production 9 ironmongers 9 King John 7 kitchen 32 landscape analysis 39 survey 39 lay brethren 6, 7 leatherworking 8 leats 35 lintel, timber 10 Lord Cobham 9, 35 of Dudley 9 of Weoley 9 Lower Churchyard 35 Lyttleton family 9, 35, 37
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39 excavations 1 Farley Grange 37 field names 35, 37 fireplace 10, 21, 23, 26 dating 23 fishponds 8, 35, 39 fisheries 37 Fitton, Sir Richard 9 food production 8 Forest of Kinver 7 friezes dog-tooth decoration 19 fulling mill 9 game exploitation 37 garden 35 garderobes 21 gatehouse 35 geology 1 geophysical survey 39 granges 37 belonging to the Abbey 37	income 7 infirmary 6, 26, 27, 28, 39 iron production 9 ironmongers 9 King John 7 kitchen 32 landscape analysis 39 survey 39 lay brethren 6, 7 leatherworking 8 leats 35 lintel, timber 10 Lord Cobham 9, 35 of Dudley 9 of Wcoley 9 Lower Churchyard 35 Lyttleton family 9, 35, 37 Sir William 9
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39 excavations 1 Farley Grange 37 field names 35, 37 fireplace 10, 21, 23, 26 dating 23 fishponds 8, 35, 39 fisheries 37 Fitton, Sir Richard 9 food production 8 Forest of Kinver 7 friezes dog-tooth decoration 19 fulling mill 9 game exploitation 37 garden 35 garderobes 21 gatehouse 35 geology 1 geophysical survey 39 granges 37 belonging to the Abbey 37 Blakeley Grange 37	income 7 infirmary 6, 26, 27, 28, 39 iron production 9 ironmongers 9 King John 7 kitchen 32 landscape analysis 39 survey 39 lay brethren 6, 7 leatherworking 8 leats 35 lintel, timber 10 Lord Cobham 9, 35 of Dudley 9 of Wcoley 9 Lower Churchyard 35 Lyttleton family 9, 35, 37 Sir William 9
construction 10 rebuilding 10 Edward I 7, 9 environmental survey 39 excavations 1 Farley Grange 37 field names 35, 37 fireplace 10, 21, 23, 26 dating 23 fishponds 8, 35, 39 fisheries 37 Fitton, Sir Richard 9 food production 8 Forest of Kinver 7 friezes dog-tooth decoration 19 fulling mill 9 game exploitation 37 garden 35 garderobes 21 gatehouse 35 geology 1 geophysical survey 39 granges 37 belonging to the Abbey 37	income 7 infirmary 6, 26, 27, 28, 39 iron production 9 ironmongers 9 King John 7 kitchen 32 landscape analysis 39 survey 39 lay brethren 6, 7 leatherworking 8 leats 35 lintel, timber 10 Lord Cobham 9, 35 of Dudley 9 of Wcoley 9 Lower Churchyard 35 Lyttleton family 9, 35, 37 Sir William 9

Manor Way 35	common-rafter 14, 20
medieval tiles 40	crown-post 14-19, 20, 21, 23
metalworking 8	queen-post 28, 32
mills 7, 8, 9	queen-strut type 28, 32
sites 37	structure 1 14-19
water 35, 37	dating 23
mining 9	
establishment 37	
lease 9	sandstone 28, 32
moats 35, 37	scarfjoint 19
Molyneux, N. A. D. 1	screen 19
monastic buildings 6	sift 10, 28
church	siltstone 20
building materials 6	sluice ditch 8
cloister 6	smoke hood 10, 26
conversi 6	smoking, fish 35
plan 6	social change
tower 6	archaeological evidence for 39
mortices 19, 20, 21	soffit 19, 20, 21
mullion 10, 27, 28	Somers, F. 1
•	excavations 1
	soulaces 19, 20, 23
New Grange 37	south wall, Structure 1 10
north wall, Structure 1 10	St. Kenelm Chapel 7
construction of 10	St. Katherine's Chapel 37
	St. Peter 40
	staircase 1, 23
Offmoor Grange 37	stonework
open trusses 19, 20	Structure 1 20-1
decorated 19	Structure 2 28
oven 32	tooling 20
Owley Grange 37	storeroom 21
	Structure 1 10
	analysis of the roof 1
partition wall 19	architectural features 10
Peter des Roches 7	construction of 10
Phasing	conversion to agricultural building 21, 23, 27
Structure 1 21–3	dating of 23, 26, 27
Structure 2 28	chimney 23
Structure 3 32	fireplace 23
Structure 4 32	roof 23
piers 28	walls 23
Pipe Rolls 7	windows 23
Pircote Grange 37	development of the building 21-3, 27
plans, abbey 1	east wall
plinth 10, 21, 28	construction of 10
ponds 35, 37	rebuilding 10
systems 35	function of 26–8
cultivation of tish 35	Phase 1 26
power supply 35	Phase 2 26
waste disposal 35	Phase 3 26
precincts, abbey 35	Phase 4 26–7
Premonstratensian Order 7, 39	north wall
prosperity 7	construction of 10
putlog holes 10, 23	phasing 21–3
Pariog dotes 10, 20	Phase 0 21
	Phase 1 21
queen-post roof 28, 32	Phase 2 21
queen-strut roof 28, 32	Phase 3 21
quodi 3aut 1001 20, 52	Phase 4 23
	Phase 5 23
rabbit warrens 37	summary of 21
Radewell Grange 37	recording and analysis 39
rafters 19, 20. See also collar-rafter; common-rafter.	repairs and additions 26, 27
refectory 6, 28, 32	roof 14–19
Richard If 9	construction of 14-19, 19-20
roof	dating 23
arch-braced 23	eastern section 20

repairs and additions 19, 20 south wall 10 construction 10 stonework 20-1 west wall construction of 10-14 windows 10	transom 10 travelling smiths 9 Tristram and Isolde medieval tile 40 trusses 19, 20, 21, 23, 28 Tuckey, George 27 turret 21
Structure 2 5, 28	
architectural features 28	
construction of 28	undercroft 6, 21, 26, 28
phasing 28	Upper Churchyard 35
stonework 28	,
Structure 3 5, 28	
architectural features 28	ventilation holes 14, 32
construction of 28	
development of the building 32	
function of 32	Warley Grange 37
phasing 32	Warley Wigon manor 9
repairs and additions 32	water mills 35, 37
Structure 4 5, 32	water resources
architectural features 32	management of 35
architectural record 5	weavers 9
development of the building 32	Welbeck 7
function of 32	Weoley, Lord of 9
phasing 32	west wall, Structure 1
repairs and additions 32	construction of 10–14
strut 20. See also Queen-strut.	Whitley Grange 37
	windmill mound 35
	windows 10, 21, 23, 24, 25, 26, 27, 28
textile manufacture 8	blocking 10, 23, 27
tie-beams 7, 19, 20, 21, 23, 32	dating 23
tiles	wooden
medieval 40	constructions 7
tooling 20, 21	lintel 10
tower 6	wooden staircase 23
township boundaries 35	woodworking 8



Plate 1 Structure 1, west gable and north wall, looking south-east (Sterenberg).



Plate 2 Structure 1, east gable and south wall, looking north-west (English Heritage).



Plate 3 Structure 2, the inner face of the refectory, looking south with the Victorian farmhouse behind (English Heritage).

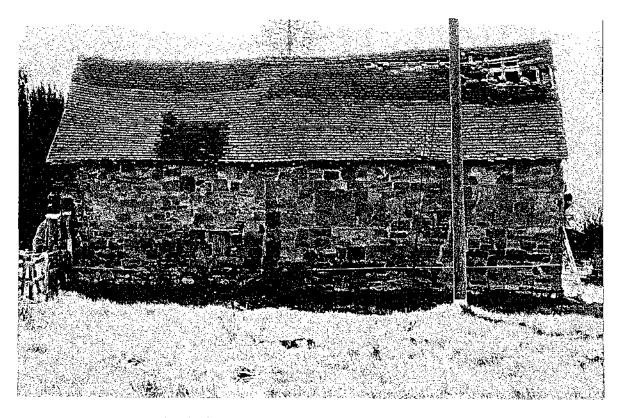


Plate 4 Structure 3, north wall looking south (Sterenberg).



Plate 5 South transept wall and farm buildings on site of former cloister, looking north (Sterenberg).

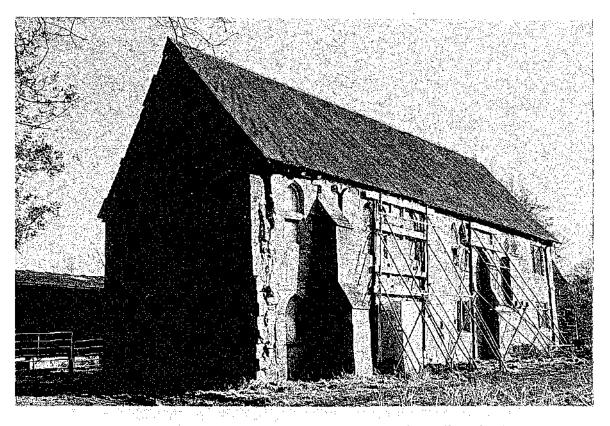


Plate 6 Structure 1, view of the south wall looking north-east (Sterenberg).

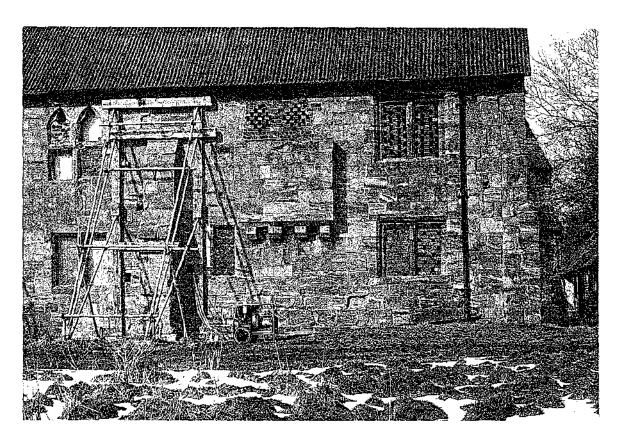


Plate 7 Structure 1, south wall, detail of the fireplace (Sterenberg).



Plate 8 Structure 1, view of the east gable wall (Sterenberg).

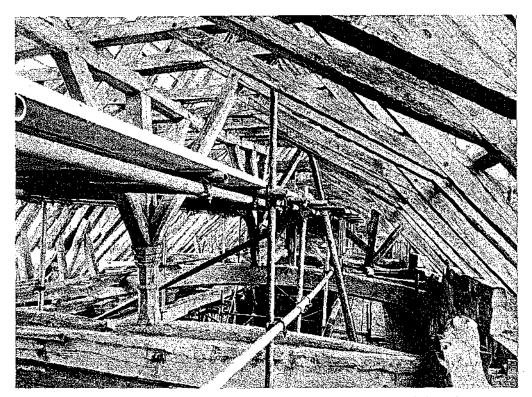


Plate 9 Structure 1, detail of crown-post roof, looking east (English Heritage).

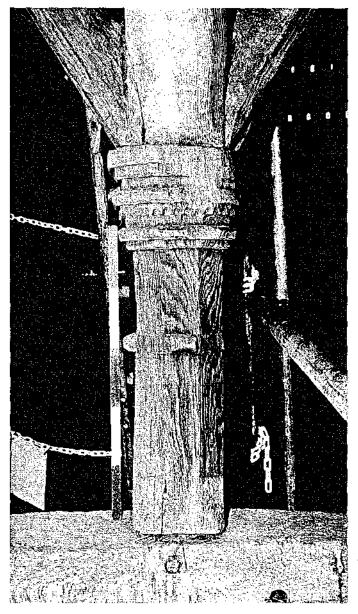


Plate 10 Structure 1, detail of the decoration of the crown post of an open truss (Sterenberg).

Plate 11 Structure 1, detail of western closed truss and crown-plate assembly (English Heritage).

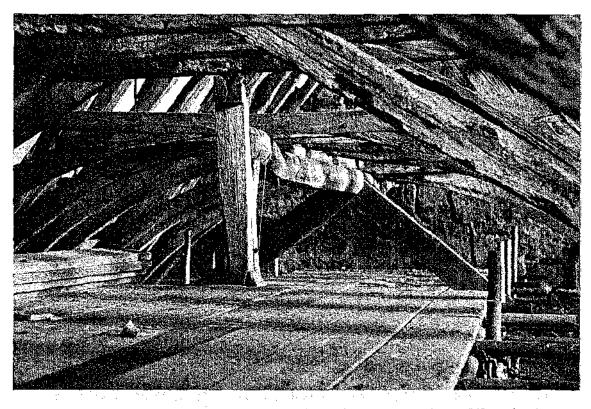


Plate 12 Structure 1, detail of the curved soulaces of the common-rafter roof (Sterenberg).

Plate 13 Structure 1, detail of the junction of the common-rafter roof and the crown-post roof (English Heritage).



Plate 14 Structure 3, east wall, possible remains of a kitchen (Sterenberg).



Plate 15 Structure 4, south wall of the church showing remains of processional doorways (Sterenberg).

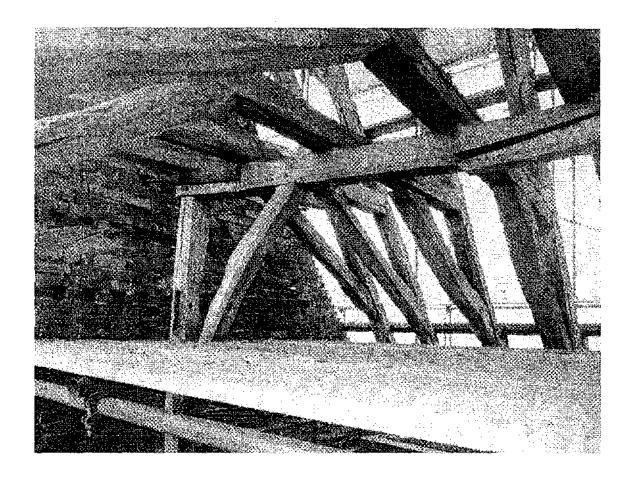


Plate 11 Structure 1, detail of western closed truss and crown-plate assembly (English Heritage).



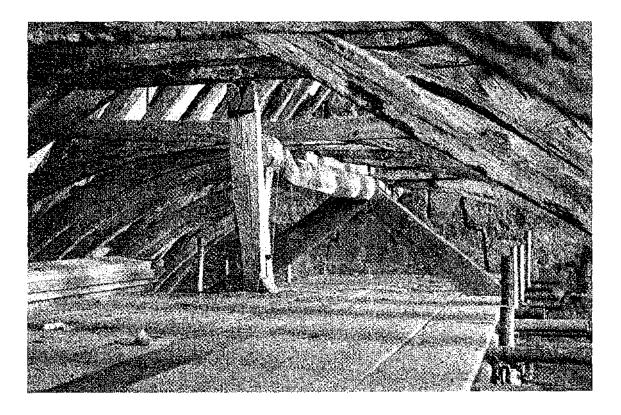


Plate 12 Structure 1, detail of the curved soulaces of the common-rafter roof (Sterenberg).

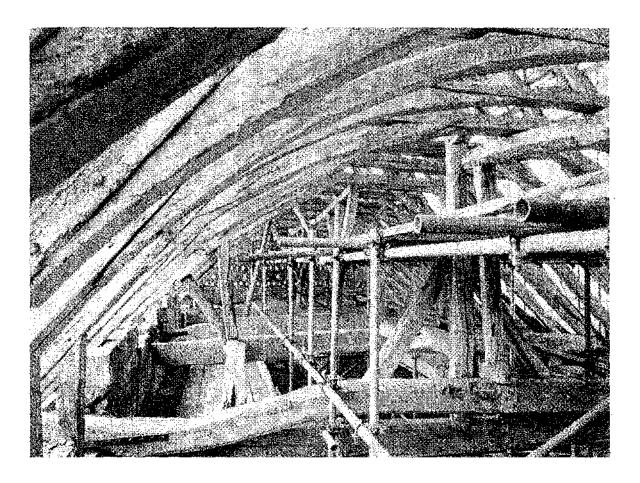


Plate 13 Structure 1, detail of the junction of the common-rafter roof and the crown-post roof (English Heritage).



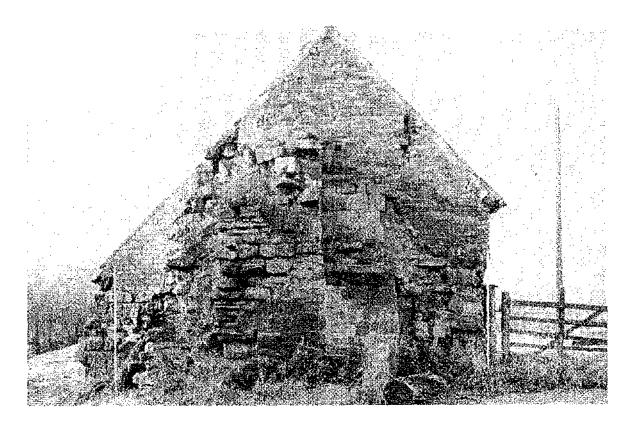


Plate 14 Structure 3, east wall, possible remains of a kitchen (Sterenberg).