

Medieval masons' marks from Bradford Cathedral

Ian Roberts

It is widely accepted that masons on piece work marked their work in a discrete way so that the quality and quantity of their output could be monitored (eg Salzman 1952; Harvey 1975). Whatever the details of how they were actually used, there are undoubtedly patterns and trends in masons' marks giving them potential for interpretation and dating of buildings. However, ideal conditions for this rarely prevail and the traditional notion of the itinerant mason (eg Brooks 1952) is a difficult theory to sustain from the evidence of his marks alone.

As masons' marks may have an hereditary element and simple forms were often duplicated, their use for tracking individuals from site to site and demonstrating contemporaneity of structures can be disqualified. The most valuable masons' marks for interpretive purposes are those that are so elaborate and unusual that the chances of them being widely duplicated are remote. Distributions of these may allow site-to-site movements of individual masons to be reconstructed. Recognising the process known as 'differencing' is important. If two masons employed on the same job had the same or similar marks, one would have to be altered. This might involve the simple inversion of an asymmetrical mark, or a subtle addition or removal of a small line component so that work output could be attributed properly. This practice seems to be evident in the marks found on Bradford Cathedral tower where, during 1993–94, repairs to the external faces afforded a rare opportunity to make a detailed record of the masons' marks.

The free-standing tower, according to documentary evidence constructed between 1493 and 1508 (Ryder 1993), became attached to the 12th/13th century parish church which forms the core of the present cathedral when the nave was extended. The nave is thought to have been rebuilt when the aisles were added in the 15th century. The masons' marks have received little attention in the past although Simpson (1964) drew attention to the fundamental differences between some of the marks on the tower and those in the nave. Sixty different forms of masons' marks have now been identified, with 50 forms (involving more than 300 marks) known from the tower alone (see figure).

The masons' marks found on the tower are typical 14th- and 15th-century forms associated with Perpendicular architecture (Davis 1954). Thirty six different types have been recorded on the lowest section of the tower, though it

Various forms of masons' mark recorded at Bradford Cathedral (Drawn by A Swann)

is unlikely that these represent 36 different masons. Rather, these variations (types 4–13) might represent the inconsistent measures of one mason, or team, to difference their work from another. The distribution of these marks may also suggest a segregation of the work force, as the most common were all but absent from the tower's western face. Moreover, some of the most common forms seen in the lower section did not occur in the middle stage of construction (though this external observation has yet to be confirmed by inspection of the interior of the tower).

The middle stage of construction is dominated by a 'W' form of mark (type 32), and also contains one new distinctive 'arrow' form (types 40–42) which has a very localised distribution, perhaps denoting the input of a mason only briefly involved in the work.

The final stages of the tower construction have a higher concentration of a zigzag mark (type 43). A significant new *triskele* mark (type 47) is associated solely with the elaborately carved tracery in the east window of the belfry, perhaps indicating the employment of a specialist for this skilled work.

Only two marks (types 32 and 43) occur throughout the structure, though these have different concentrations at different levels (type 32 is most common on the middle section, whilst 43 becomes most common in the upper stages). The marks may indicate considerable change in the work force during construction, although, if the documentary evidence is correct and the tower took 15 years to build, the continued occurrence of certain masons' marks throughout the building programme might reflect continuity of key personnel.

Other than the ubiquitous simple forms, the marks observed in the tower are not generally found in other parts of the cathedral. Others are known mainly from the arches of the arcades between the aisle and nave (types 52–60) where they support the hypothesis that the capitals of the northern arcade are reused (Ryder 1988). The most diagnostic marks from the north arcade soffits are the curved forms (types 53, 54 and 57), though there are other more common forms (eg types 51 and 52). The intention seems to have been to mark every voussoir of each of the north arcade arches in the same way (each arch having a unique and discrete set of identity marks). However, in some cases it can be seen that the haunches of each arch have been given different identity marks. It is possible that these could have acted as assembly instructions. They could equally be seen as marks made during dismantling for systematic storage and later reassembly. Significantly, the voussoirs of the south arcade arches do not display any marks, supporting the idea that the south arcade was never dismantled and rebuilt, or certainly not at the same time as the north arcade.

Obviously closer inspection of the internal tower and medieval church walls needs to be made before anything more conclusive can be proposed. Nevertheless, the possible 'assembly marks' of the rebuilt north arcade, coupled with the distribution of 15th-century masons' marks on the tower, accord with documentary and structural interpretations of the cathedral available to date.

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Notes

This article summarises a more comprehensive report provided to Bradford Cathedral which included a section on the bells and bell chamber (WYAS Report 176, 1994). The work was carried out according to the wishes of the Fabric Advisory Committee to a specification formulated by the Cathedral Archaeologist.

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Excavations at St Michael, Workington

P Flynn

In September 1994 the parish church of St Michael, Workington (Cumb) was extensively damaged by a fire which gutted the building, leaving the walls standing as an empty shell. The tower survived relatively unscathed, suffering only the effects of smoke and thermal shock. Following the decision to rebuild the church, Carlisle Archaeological Unit undertook an archaeological evaluation followed by full-scale excavation of the interior, excluding the tower (Flynn 1996; McCarthy & Flynn 1996). Excavations finished in February.

The port and town of Workington lies on the west coast of Cumbria, some 40 miles south-west of Carlisle, at the point where the River Derwent enters the Solway Firth. St Michael's church sits on a low but prominent gravel ridge on the south bank of the Derwent overlooking the harbour. The gentle slopes to the south and east are occupied by an extensive churchyard.

History

The first historical reference to the church of St Michael is in a charter, confirmed in the Register of St Bees, set out in the Register of Wetheral. The charter is probably of early 12th-century date, and refers to the grant, by Chetell, of St Michael's to St Mary's at York. Chetell is traditionally regarded as a member of the Curwen family, patrons of the living since the Reformation.

The probability of an earlier church is suggested by eight pieces of pre-Norman sculpture: four are now lost, but the rest are exhibited within the tower. The sculptures, most of which are parts of cross shafts, are dated on stylistic grounds to the 8th–9th centuries and the 10th–11th centuries (Bailey & Cramp 1988, 154–57). One of the missing pieces was an inscription in Anglo-Saxon capitals. Although no certain traces of pre-Norman buildings (or

*St Michael's Church, Workington: probable cross-shaft base incorporated in the robber fill of the chancel-arch wall, looking east (scales are 1m)
(Photo: Carlisle Archaeological Unit)*

structures) have been recognised, burials and other features on a different alignment have been located.

The Norman church survived until 1770, when it was demolished and replaced. Prior to the demolition, a plan (now in Cumbria County Record Office) was made of the medieval church, which shows a tower and nave with a narrower square-ended chancel and opposed doorways towards the west end. The south doorway had a porch, and the Curwen burial place is shown as a building attached to the south wall of the chancel. The whole church was some 31m long and 10m wide. The plan was intended to show seating arrangements and indicates that the chancel and nave had galleries, the nave also having an upper gallery, which were accessed from external stairs. These seating arrangements indicate that the roof of the Norman church must have been raised.

The new Georgian church retained the medieval tower, and was not much longer than the earlier building, but extra width was gained by the addition of aisles. The nave and chancel of this 'hall church', which could seat 1500 people, were reduced to a shell by a fire in January 1887. The church was rebuilt in late Victorian style, and reconsecrated on the 24 April 1890. It was this church that was gutted by fire in 1994.

Archaeological investigation

The Georgian destruction of the medieval church was almost total above ground level and the evaluation showed that the foundations had been extensively damaged by the pier bases for the later churches. Excavation has established the surviving plan of the medieval church, and confirmed the accuracy of the 1770 survey. The nave measures approximately 12m x 7m internally, and the chancel is 6m square. The east end of the chancel was almost destroyed when the Curwen burial vault was constructed in 1770.

Further damage occurred in 1926, when a new access to the vault was created.

The foundations are of coursed river cobbles and gravel some 2m wide. Differences in the treatment of the foundations suggest more than one phase of construction. A single course of faced sandstone survives in part along the south wall of the nave, and up to two courses remain in the south wall of the chancel. Parts of a clay floor associated with the medieval church have been found, and the position of the font, as indicated on the 1770 plan, located. The relationship of the cobble foundations to the tower has not been established due to later disturbance. Similarly, the relationship of the nave to the chancel remains uncertain.

Two copper alloy belt fittings of Hiberno-Norse type dated to the mid 9th to 10th centuries were found. One, a D-shaped buckle, was associated with a skeleton, and established for the first time pre-Norman use of the site for burial. Over 100 burials have been excavated to date, the majority lying to the south, with only the occasional burial to north. The whole of the interior contains burials and two fragments of medieval grave slabs have been located: one in the nave close to the south door and a more substantial slab, decorated with a cross, in the chancel. Most of the burials date to before 1770, although at least one later burial has been excavated.

Three pieces of pre-Norman sculpture were also recovered. A decorated shaft was incorporated into the tower footings. The interlace decoration survived on only one face, and suggests a 9th- or 10th-century date. The two other pieces, one that might be part of a high-quality grave marker decorated with interlace and a beast in the Jelling style, and a cross-shaft base (see figure), were recovered from robber trench backfill. The base is sub-rectangular with rounded corners, and has a rectangular socket in the upper surface. The sides and upper surface are decorated with interlace designs. Both these pieces may date to the 10th century.

The sculpture and metalwork, together with the site location, present a good case for this having been a high-status site in the Northumbrian and Norse cultural milieu.

Acknowledgements

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Aisle lighting in 13th-century Staffordshire

Bob Meeson

Many archaeological descriptions of churches include diagrams illustrating the main phases of plan development. Typically, the sequence begins with a two-cell Norman structure, followed by the addition of nave aisles, extension of the chancel, and the addition of a west tower, chantry chapels and other enlargements. Some plans show the construction of a narrow aisle on one or both sides of the nave in the 13th century, which is replaced by wider aisles in the 14th century or later. When only the foundations of the earlier narrow aisles survive, many questions about function and design are left unanswered. Some early aisles are so narrow that the inconvenience and expense of construction could hardly be justified by the limited gain in accommodation for the congregation, though they might have offered circulatory or processional opportunities. Whatever their function, the addition of side aisles to already relatively dark Norman interiors must have presented lighting problems, particularly where clerestories were absent. Often so much of the fabric belonging to this intermediate phase of development has been replaced that the fenestration of the 13th-century nave cannot be recovered. However, several Staffordshire churches retain evidence of one lighting solution.

At St Laurence, Gnosall, the 13th-century nave and aisles remain. The side walls of the aisles were rebuilt with new windows in the 14th or 15th century, but the west elevation shows that the 13th-century nave and aisles had a 'catslide' roof sweeping from the ridge down to very low eaves over the north and south walls. On the exterior face of the north aisle, three window sills remain trapped between the

uppermost surviving course of 13th-century work and the later masonry above. The asymmetrical spacing of the sills might suggest former internal subdivision of the aisle or, equally, that one of the sills is reset. Crucially, there is no evidence of blocked apertures at a lower level. Whether *in situ* or not, the sills almost certainly belong to individual lancet side windows that must have projected well above the eaves line; each window must have been set in its own side gable.

St Mary's at Stafford can be interpreted in a similar way. The south aisle now has windows in Decorated style and those to the north are Perpendicular. If the evidence of the west front can be relied upon after two major restorations, the pitch of the nave roof was not quite the same as the adjoining aisles but there was evidently no clerestory in the 13th century, and as at Gnosall, the eaves were very low.

When Street remodelled St Mary and St Chad, Brewood in 1878–80 he found archaeological evidence of cross-gables on the nave south aisle; accordingly, he replicated them on a new outer aisle, placing a stepped triple lancet beneath each cross-gable (Pevsner 1974, 78).

St Chad's church at Lichfield includes what has been described as a 12th-century nave with a 'steeply-pitched roof probably continued over the aisles, though pierced over the south aisle by five steeply pitched transeptal roofs' (Greenslade 1990, 145). This account follows the earlier description in a church guide of 'obvious indications of the outlines of several round-headed windows of Norman character' (Laithwaite nd, 7). The same booklet refers to 'easily discernible roof-lines of five gables which fill the whole south wall'. If there was once a 'catslide' roof at this church the building must have been substantially remodelled as the wide south aisle now has its own ridge. Nevertheless, the cross-gables remain visible externally, encapsulated beneath later masonry in the south wall of a wide aisle. The round window heads referred to above must have been replaced by the 14th century and cannot have been seen by Laithwaite; the gables are more likely to be 13th century.

Fenestrae estantivae were sometimes specified for the royal halls of Henry III (1216–72). '*Estantivae* means 'upright', and from references to the roofs, crests and gutters of such windows it seems clear that they were tall windows with independent gable roofs set at right-angles to the main roof of the building which they lighted' (Colvin 1963, 123). The great hall at Winchester is cited as one such example (*op cit*, 860), but like the narrow aisles of 13th-century churches, most of the houses built for Henry III have been almost totally destroyed. Many 13th-century secular halls were lit by rows of pointed windows beneath cross-gables, as for example at Stokesay Castle (Salop), Salisbury Old Deanery (1258–74), Godmersham (Kent), and the Archbishops' Great Hall of c1200–1220 at

Canterbury (Wood 1983, 350–51; James 1990, 63). The evidence of cross-gables in several south Staffordshire churches is probably not particular to that county. These accidental survivals suggest that this was not an exclusively secular 13th-century fashion but one which was also widely employed on church buildings of that period. Unless they were furnished with a clerestory, and whether they were of timber or stone construction, secular or ecclesiastical, aisled buildings with low eaves could best be lit by tall windows projecting above the eaves, each beneath its own cross-gable.

The churches at Gnosall, Stafford, Brewood and Lichfield all had much lower eaves, and therefore taller cross-gables, than the secular parallels listed above. At Stokesay only the roundels between the twinned lancets project above the eaves line. Either this reflects an architectural distinction between ecclesiastical and secular design, or a chronological progression towards higher eaves and lower cross-gables on both halls and churches. In the latter category of buildings the later construction of wider aisles and higher walls with bigger windows has eliminated many of the earlier examples of this type of construction.

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New Historic Churches Trust for Ulster

Ann Hamlin

Somewhat later than elsewhere in the UK, changing patterns of religious observance in Ulster and the cost of maintaining ageing buildings are leading to a growing stock of redundant or deteriorating churches. In response to this, in 1995, the Ulster Historic Churches Trust was established with the support of the four main denominations (Church of Ireland, Roman Catholic, Presbyterian and Methodist).

The Trust has sponsored the one-year Liam McCormick research fellowship funded by the Cultural Traditions Group for the academic year 1996–97. This will result in a popular publication drawing attention to the historic and architectural importance of Ulster churches.

The Trust has already taken a close interest in St Patrick's School in Donegall Street, Belfast's earliest surviving Gothic Revival building and the earliest Roman Catholic building in the city (1828). This was badly damaged by fire in 1995 but a trust is raising funds for restoration and the Ulster Historic Churches Trust hopes to set up offices in the restored building.

The Chairman of the Trust is Archdeacon Alan Harper, former Chairman of the Northern Ireland Historic Monuments Council. Also involved is Mrs Primrose Wilson, Chairman of the Northern Ireland Historic Buildings Council. Enquiries should be addressed to the Ulster Historic Churches Trust, c/o Cleaver, Fulton & Rankin, 50 Bedford Street, Belfast BT2 7FW.

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Medieval window sketch found at Dartford, Holy Trinity

John Bailey

Holy Trinity is a large and important building on a site which may have been occupied by a church since the 8th century. During 1996 a major programme of conservation and repair, mainly in the interior, took place. One of the main tasks was removal of internal wall render which, due to its high cement content and overpainting with oil-based paints, had trapped moisture within the fabric of the building causing damage to stonework through crystallization of soluble salts. This provided the opportunity to study the exposed masonry and led to reassessment of the historical development of the building.

Perhaps the most interesting discovery was made by chance. High up in the south aisle, above the early 14th-century arcade, a single Reigate stone block was found covered with scratches. The stone, measuring approximately 400mm x 200mm had been reused in the rubble wall construction. Close examination revealed the

examination of newly exposed wall surfaces. It would have been all too easy to miss this important feature, and had mechanical methods of plaster removal been used, the incised design may well have been destroyed.

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New survey of Kent churches

Tim Tatton-Brown

Kent has one of the most interesting collections of parish churches in England. Though general patterns emerge, both chronologically and geographically, it is the sheer variety which makes a new Diocesan-sponsored survey of pre 19th-century churches in the county rewarding. Medieval Kent had at least 426 parish churches, probably the densest concentration in England, as well as many non-parochial chapels. At the Reformation a few of the churches and many of the chapels were knocked down. The majority of parish churches continued in use, though there have been some demolitions (and complete rebuildings) during the last three centuries. Since the mid 19th century new churches have also been built, in response to the growth of London and the Medway towns, particularly in Rochester Diocese.

Following the requirement to give due regard to the archaeology of churches, contained in the 1991 *Care of Churches and Ecclesiastical Jurisdiction Measure*, the Dioceses of Canterbury and Rochester commissioned a new survey of historic churches in Kent. About 354 pre 19th-century churches are still in use in Kent (238 in Canterbury Diocese and 116 in Rochester Diocese). Before the end of the decade all these will have been examined. Post 19th-century churches are not included; nor are the 11 redundant churches now looked after by the Churches Conservation Trust.

The survey involves a visit to each church and study of the fabric (excluding fittings and monuments). The resulting report covers the main stages of development, as well as giving a brief history of the building's restoration and drawing together existing documentary information on the site. Each of the inspections takes a minimum of one day to complete.

An alphabetical index of all the reports that have been

Late 13th- or early 14th-century tracery sketch from Holy Trinity, Dartford reproduced at half actual size (Copy of tracing by Howard Jones)

faint, but expertly inscribed design for the tracery of a late 13th- or early 14th-century window in the curvilinear style. The stone, reused upside down, showed in outline a four-light design with a large central quatrefoil at the apex. The sketch had been accurately set out using metal dividers, some features had been incised more deeply and the quatrefoils had accurate centre points for setting out.

Howard Jones of English Heritage, who examined the sketch in detail, drew parallels with the design of the east transept window at Merton College, Oxford (c1280) and the Lady Chapel window at Exeter Cathedral (c1290) which might suggest a date for the Holy Trinity design of 1280–1320. This fits well with documentary evidence for the church. Hamo de Hethe, Prior of Rochester Cathedral from 1314, and later Bishop (1319–52) is known to have spent considerable sums of money on rebuilding the church in the early 14th century. When he visited in 1333 the new east and still surviving west windows were already in place.

Since the surviving west window is of a different design to that illustrated on the stone, it is tempting to suggest that the mason's design for the east window is represented. The stone certainly illustrates a window of similar scale and date.

In the 1860s, A W Blomfield embarked upon drastic repairs to the chancel, including removal of the 15th-century rood screen, reworking of the chancel arch and removal of the 15th-century east window. During the work Blomfield discovered remains of a large earlier window, and, from the fragments, designed the present east window. This provides strong circumstantial evidence that the 14th-century design on the stone block is indeed that of Hamo de Hethe's window, as the present window closely resembles the newly uncovered design.

This discovery highlights the importance of careful

published in *Archaeologia Cantiana* (the journal of the Kent Archaeological Society), the greatest source of previous surveys, has been prepared. By far the best of these were done by the Rev G M Livett (1859–1951), precentor of Rochester Cathedral and for many years vicar of Wateringbury. He was an excellent draughtsman and surveyor and made good measured plans, as well as some sections and elevations. Published documentary material forms a basis for many of the reports. Most useful are Hasted's *History of Kent* (1797–1901) and Sir Stephen Glynne's *Notes on the Churches of Kent*, mostly made before 19th-century restorations but published posthumously in 1877. *Testamenta Cantiana* (extracts from Kentish pre-Reformation wills) (Duncan 1906–7) and many of the earlier church guides are also valuable. A useful body of early illustrative material on Kent churches survives, notably the early 19th-century Petrie drawings (kept in a scrapbook in the Kent Archaeological Society Library at Maidstone) and church plans in the archive of the Incorporated Church Building Society at Lambeth Palace and the Society of Antiquaries of London. Rochester Museum holds a series of anonymous plans apparently drawn by Herbert Bolton in the earlier part of this century.

The survey has confirmed a broad pattern of development in the county's churches. In the late 11th or early 12th century a new church/chapel was built next to the manor house and became a 'parish' church in the early 12th century. One and often two aisle(s) were added during the period of great population growth in the mid 12th to 13th centuries. These aisles often started as lean-to extensions to the nave, but in the later 13th or early 14th century they were given fine outer walls with traceried windows. A small Norman sanctuary was almost invariably replaced by a larger chancel in the 13th century, often flanked by one or two separated side chapels. Most of these were related to the neighbouring manor or court lodge, and many subsequently became chantry chapels which were converted to manorial pews and burial chapels after the Reformation. There are often signs of the later 14th-century depopulation of Kent and few churches were totally rebuilt during the later Middle Ages. (All Saints, Maidstone, with its associated archiepiscopal college and palace is perhaps the best example.) There were, however, some new building campaigns, particularly in the Weald, and fine 15th-century western towers are common. Small, earlier towers are typically on the sides of churches, though some large 12th-century crossing towers exist at larger churches and Reculver, uniquely, has a pair of late 12th-century western towers.

Evidence for surviving Anglo-Saxon fabric has also been examined, but little material survives due to the complete rebuilding of most of the churches in the late 11th century (Tatton-Brown 1988). The 11th-century documentary

evidence, before and after the Norman Conquest, is exceptionally good (particularly from *Domesday Monachorum*¹ and *Textus Roffensis* (Ward 1932)) and where possible this has been related to early visible remains. This often consists of quoins of tufa (in West Kent) and Quarr stone (in East Kent). Evidence for the end of the Middle Ages, for example from wills, can be related to particular features like towers, altars, rood screens and new windows.

A priority for future work will be the creation of accurate measured plans for all churches where they appear not to exist and a wider programme of education in all aspects of the architectural history of our parish churches.

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Notes

1. For a list of churches in *Domesday Monachorum* see appendix in Tatton-Brown (1988).

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Welsh Churches Project

Edward Holland & Neil Ludlow

For some time the problems of maintaining historic churches with ever smaller congregations have been increasing. Coupled with this, the disestablished Church in Wales has only recently benefited from a formal advice system parallel to that of the Church of England. In 1993 the Welsh Affairs Select Committee Report on *The preservation of historic buildings and ancient monuments* emphasised the need to protect the archaeology of ecclesiastical buildings and at the same time changes in planning policy enabled Cadw to be more pro-active in the funding of archaeological work in Wales. Out of this developed the Welsh Churches Project which began in full

Loveston Church, Pembrokeshire, from the north-west. A small, cruciform church mainly datable to the late 14th century (Photo: Dyfed Archaeological Trust)

in 1995, building on the Gwynedd Archaeological Trust's (GAT's) rapid survey of churches in their area.

The principal aim of the project is to create a database of all pre 19th-century churches owned by the Church in Wales, ie those under greatest archaeological threat. This excludes 19th-century churches on greenfield sites, churches of other denominations, cemeteries and monastic sites, but includes 19th-century churches on earlier sites. The number of Nonconformist chapels in Wales and the problem of reuse demands a separate approach and a report on *Redundant historic chapels in Wales* has recently been published (Wools 1996).

The Project is programmed to continue until spring 1998 and the work is being carried out by the four Welsh Archaeological Trusts. GAT's rapid survey was followed by the Dyfed (DAT), Clwyd-Powys (CPAT) and Glamorgan-Gwent (GGAT) Trusts each choosing one district for a pilot study. The selected areas were South Pembrokeshire, Brecon and Radnor, and Monmouthshire. This year (1996/7) has seen the completion of the former counties of Gwent, Powys and Clwyd and the surveys of the Gower, Cardiganshire, Carmarthenshire and Llanelli. In total the estimated number of churches to be surveyed is 179 in Gwynedd, 260 in Clwyd-Powys, 300 in Dyfed and 250 in Glamorgan-Gwent. The findings of the project will be placed in the Sites and Monuments Records and will assist both the Diocesan Advisory Committees and the Historic Buildings Council for Wales when considering works that could affect the fabric or below-ground archaeology.

Cadw is now funding the Trusts to produce regional overviews based on the pilot study undertaken by DAT for South Pembrokeshire. These will enhance the databases by drawing together the results from each regional survey and identifying churches that are especially important in their region either for completeness or a specific feature. Regional characteristics such as the unusually early

foundations of the simple rural churches of Anglesey, survival of unrestored interiors in the Conwy Valley, 'double-nave' churches in the Vale of Clwyd, timber belfries in the borderlands and the stone vaults in Pembrokeshire have been quantified.

The Pembrokeshire experience

In 1995/6 the Dyfed component of the survey, carried out by DAT, concentrated on the churches of South Pembrokeshire. Using *pro forma* recording sheets, each representing a discrete, numbered component, the building was recorded. The physical relationship between church and churchyard appears as a further record. The database is structured accordingly, each component – building, cell, space – occupying a hierarchical tier. Pre 19th-century churches that had been completely rebuilt in the 19th century were subject to a less detailed record, but the relationships between church, churchyard and any earlier church were recorded.

The fieldwork was accompanied by a rapid documentary, cartographic and pictorial search. Quinquennial reports (for information upon structural condition), faculty applications and consents (for later constructional history and a record of heating installations etc which affect the survival of below-ground archaeology), archdeacons' certificates, churchwardens' accounts, vestry minute books, and building and restoration accounts were scanned as well as published material such as the 19th-century accounts in *Archaeologia Cambrensis* and *West Wales Historical Records*, which were often compiled prior to 19th-century restoration.

Work in South Pembrokeshire shows that the majority of churches conform to a more-or-less discrete building type. A typical example would have an unvaulted chancel, a slightly wider nave, unaisled and unvaulted, vaulted transept(s) with skew passage(s) to the chancel, a vaulted west tower usually open to the nave, and a vaulted south porch with benching. Only just over half of those within the area have any further components, such as side chapels or aisles, though most had a vestry added in the 19th century, and it was only possible in one instance to demonstrate that the plan components represented a single *de novo* phase.

Many of the churches display external evidence of former elements, either in the form of blocked arcades or, in a few instances, earthwork evidence in the adjacent churchyard. However, the majority are divided from the surrounding archaeology by external drains. In many, internal levels have been altered and underfloor voids will have truncated archaeological remains.

The predominant building material is the local Carboniferous Limestone, with some use of the local Old Red Sandstone. Other patterns emerge: vaults are almost all barrel vaults; buttressing is rare in pre 19th-century work

(though it does occur in the 14th-century chancel at Carew Church); towers are generally narrow, tapering and devoid of architectural decoration bar the corbelled parapets; and spires are rare. A small number of churches display low, square crenellated bellcotes in place of a tower. Opposing north and south doorways appear to have been almost universal, in the majority of cases the north door was subsequently blocked. Few openings survive in their original condition, window and door surrounds having generally been rebuilt in the 19th century. Likewise, no timber roofs survive from the medieval period. Exposure of (late) medieval wall paintings by the removal of fittings in a few churches indicates that many will possess paintings beneath the internal finishes.

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Reinterment of human remains: the Kellington solution

Harold Mytum

The reinterment of human remains raises ethical and practical concerns both for archaeologists and church communities. These need to be considered case by case, but we have yet to identify the archaeologically optimum treatment for such remains. Although a wider debate is lacking, methods of tailoring archaeological issues to community sensibilities can be explored through particular case studies. The experience at Kellington (Yorks) may help to stimulate future discussion. It provides a precedent for other cases and raises issues of general relevance.

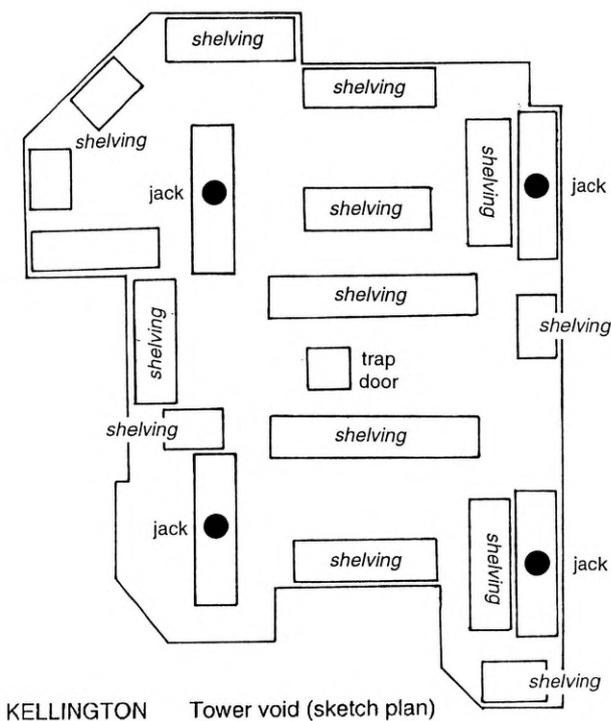
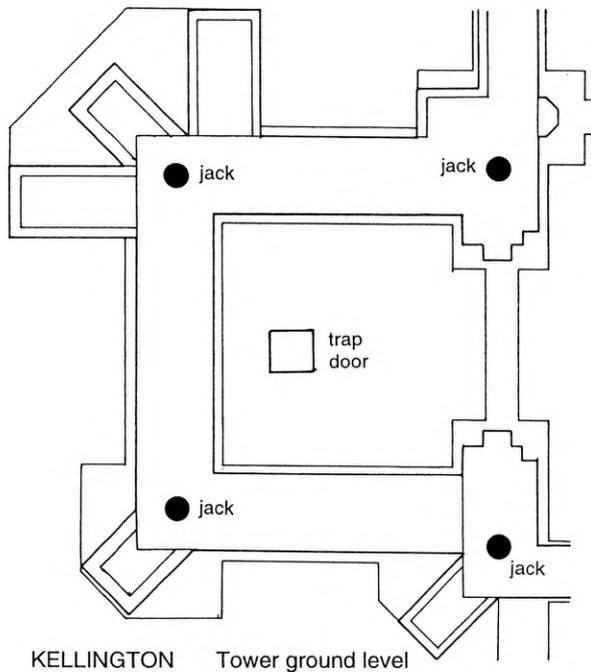
Archaeological issues which need to be considered centre on provision for initial study and subsequent retention of human remains for future research. The cost of in-depth scientific analysis of human remains limits the amount of work which can be undertaken when a population is excavated. Moreover, developments in techniques and the need to ask new questions of old data sets means that repeated access to the same population is highly desirable.

Ironically, the larger and better preserved the collection of material, the more valuable it may be for analysis, but the more costly it is to store and manage. Museums are understandably cautious about the cost implications of taking large collections, and from church excavations the necessary 'dowry' payment may not be available.

Community issues which need to be considered relate primarily to the desire for human remains to be treated with respect and reburied as speedily as possible. This may emanate from the communities whose ancestors have been excavated, from ecclesiastical authorities, or both. Beliefs will vary, but at Kellington both community and church authorities expected that the human remains would be reinterred at the church. Initially it was assumed that this would be in a large grave to be excavated to the west of the church. No specific time limit was set for reburial, but clearly an archaeologically acceptable solution had to be found as quickly as possible.

The Kellington excavations were extensive, involving complete removal of deposits within the church and a strip around the southern, eastern and northern sides of the nave and chancel to allow access for inserting the hydraulic jacks needed to hold up the building (Mytum 1993). Seven hundred articulated skeletons were recovered, though most were incomplete, along with an equal volume of disarticulated material. Analysis and basic recording of the articulated material has been undertaken by Tony Waldren, but it was decided that the disarticulated material would not be studied as part of the excavation. A few small-scale studies involving articulated and disarticulated material have been undertaken by students at the University of York under the supervision of Don Brothwell. The potential for the collection is large and the material provides an important addition to other populations from this part of England, including Wharram Percy, St Helen-on-the-Walls, York, and Barton-upon-Humber. Ensuring future access to the collection was therefore highly desirable.

Once all the construction work was over, it was apparent that a void beneath the tower offered an opportunity for reinterment in a charnel house which could be accessed in the future. The void had been constructed to provide access for the hydraulic jacks which keep the tower and nave walls vertical as the ground beneath subsides as a result of the coal mining under the site. Had the implications of the void been appreciated at the planning stage of the work, the area could have been constructed with its present purpose in mind, for example allowing for effective ventilation and easy access. Potential problems with condensation are being monitored, and, if necessary, alterations will be suggested, though these would be limited by the engineering requirements of the structure. Although the possibility of using such a space had been tentatively discussed amongst some of the archaeologists, no requirement for suitable storage for human remains had been included in the project



Plans of ossuary beneath tower, Kellington (Plan: H Mytum)

design. This is a lesson worth learning for future large-scale church excavations.

The void beneath the tower has now been fitted out with shelves, which contain the colour-coded double-bagged skeletal remains and architectural fragments and stone samples. A total of c70 sq m of shelving is in use. Access is via a trapdoor in the tower floor and at present there are no facilities for examining the remains. There is no electricity supply in the store and skeletons have to be brought up into the tower for examination.

The parishioners of Kellington are proud of the archaeological and historical significance of their church and the human remains recovered. They are happy for access to the remains be maintained for future researchers and visits are being organised via the Archaeology Department at the University of York which is acting as curator.

Other parishes may feel differently and there may be problems over security and unregulated access. For archaeologists to have the privilege of accessible stores of excavated skeletal material we need to communicate, consult and act sensitively and responsibly. Solutions for individual cases will differ. In some instances storage within a museum may be appropriate; in others a regional store, perhaps in consecrated space, may be available. In many cases reburial in or around the church is required. Kellington has provided one solution for a large collection. A smaller collection from All Saints, Pavement, York is to be placed in two existing brick-lined burial shafts within the church and so will be available for future study.

Experience at Kellington shows that a lateral approach to the issue of reburial can produce a happy compromise. Even if collections stored within a church are not always as easily available as those in a museum or laboratory, they can be restudied intermittently, and they also find a home that is socially acceptable to the parish community which has inherited the obligations of maintaining the church.

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