

# BULLETIN

of the C B A Churches Committee



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The Bulletin of the CBA Churches Committee now appears TWICE a year. It is sent free of charge to Diocesan Archaeologists and is available to others for the sum of 40p per copy, or an annual subscription of 75p. All subscriptions should be sent to the CBA.

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## NOTES

### Conference on Nonconformist Places of Worship

The conference will take place at the Victoria and Albert Museum on Saturday 3 November 1979. Lord Asa Briggs has agreed to act as chairman and the speakers, covering a wide spectrum of topics, include Dr Clyde Binfield, Philip Hayden and Marcus Binney.

### Changes

Coventry: Mr Paul Gosling has succeeded Dr Raymond Lamb as a full member of the DAC.

### Graveyards

Steady sales have almost exhausted the first printing of How to record graveyards. A second edition is planned. This will be the same text with a few minor corrections and the addition of a second preface, drafted by the Secretary after discussions with Professor Rahtz and Dr Butler.

Concern was expressed at a recent meeting of the Churches Committee that the use of the CBA record cards was not being monitored, in particular their use for purposes of post-recording analysis. Consultants are, therefore, requested to send a list to the Secretary of graveyards recorded in their dioceses, stating whether the CBA record cards were used and where they were deposited or the information published.

## MORTAR ANALYSIS

John Evans

### Introduction and terminology

Mortar is a term loosely applied to material used for bedding, jointing and rendering masonry. It consists of a cementitious binding material usually mixed with a fine aggregate such as sand. If the system contains, in addition, a coarse aggregate, a concrete is produced. Concrete was used in historical times for foundations, floors and wall hearting. The word plaster tends to be associated with the use of plaster of Paris as a wall-rendering material. This material, however, was not in use to any known extent in Britain until the 13th century and, hence, in earlier periods it is applied to wall renderings that were in essence lime-base systems. Both lime and gypsum plasters were in use throughout the later centuries. The surfaces were sometimes pointed and very often re-whitened with lime washes. It is not unusual to find such wall-renderings put on in a multi-layered manner, the surface layers being merely a skin. Each of the backing layers can be several cms in thickness and are often found to contain fibrous materials, such as hair or chopped straw.

Floorings, as the name implies, are materials used in the construction of floors. It is not unusual to find flooring materials involving the use of lime (and occasionally gypsum) mixtures of various types. The composition of the mixtures varies greatly from unadulterated, crushed limestone or chalk mixtures involving calcined material, ash, sand, crushed rubble etc. It usually has a thickness of several cms and, hence, it is relatively easy to distinguish from collapsed wall renderings. It is not unusual, however, to find mortar and plaster mixed in situ and, consequently, some apparent lime/gypsum flooring material may be observed.

#### Historic development

It was not until the Roman occupation of Britain that building techniques employed mortar and concrete to any appreciable extent. Roman mortar and concrete are popularly supposed to be superior in quality to any that have been produced until modern times. This is, in part, due to the characteristic of well-made mortar that it tends to harden with the process of time and, partly, because Roman builders took care in the selection of their materials. The quality of Roman cements was sometimes further enhanced by the use of pozzolanic additives, especially where water resistant cements were required. Pozzolanas was defined as materials which, though not cementations in themselves, contain constituents which will combine with lime in the presence of water to form stable insoluble compounds possessing cementing properties. Natural pozzolanas are, for the most part, materials of volcanic origin, but include certain diatomaceous soils (ie soil containing silicious deposits of diatom shells). Artificial systems are mainly obtained by the heat treatment of clays. In the Roman period natural pozzolanas were available for use in Italy but not in Britain. The Roman builders ~~over-~~came this problem by using an artificial pozzolana, namely crushed tile or brick. The absence of pozzolanic materials coupled with the use of poor quality aggregate in post-Roman building mortars often gave rise to mortar mixtures that had relatively little strength and were slow setting. It is often necessary, therefore, to place spacers (such as oyster shells and wooden pegs) between the masonry blocks to prevent the mortar from being squeezed out of the bedding joints under load. It should be remembered, however, that not all mortars from this period are of poor quality.

In the 16th and 17th centuries, Dutch pozzolanas were imported and used in mortar and concrete preparations. John Smeaton experimented with various limes and he deduced that a good cement could be produced by deliberately mixing and burning together limestone and clay. Towards the end of the 18th century James Parker found that he could produce a satisfactory cement by calcining nodules of argillaceous limestone washed out of the London clay cliffs on the foreshore of the Thames estuary. This cement was called 'Roman' cement.

At the beginning of the 19th century James Frost patented a cement produced by calcining a mixture of limestone and clay, which he ground together in a wet mill. Improvements on this

method were made by Joseph Aspden. The first reliable Portland cement was produced by Ian Johnson at Swanscombe in 1845 and, thus, gave birth to the modern cement industry.

### Potential evidence

#### Mortars - Concretes

Scientific investigation of cementitious materials cannot give any absolute dating information; it can give, however, useful relative dating data within a given structure. In principle it is assumed that, when building operations were commenced, sufficient supplies of aggregate, lime, etc were available from a common source. Hence, when mortars and concretes are examined, if there is a high degree of similarity in their constitution it is reasonable to assume a common constructional period. One problem that occasionally arises is the use of sieved aggregates. In such situations very similar results may be obtained for samples that are not contemporary. However, if a relatively large time period elapses between constructional features there is usually a detectable change in the nature of the aggregate.

Thus, it is possible, provided that sufficiently representative samples are used, in conjunction with excavational evidence, to decide which modifications to the parent structure are contemporary and, hence, outline the principle periods of activity in the building.

Additional evidence is sometimes found in the make-up of the aggregate itself. Although this is mostly gravel and sand, usually from a local source, it does occasionally contain oddities. Daub, bones, charcoal, pot, and metal fragments have all been found in mortar and, as a consequence, some useful additional information has been obtained.

#### Surfacings

The relative dating of plaster is not such a simple matter as that for mortars and concretes. This is due to the fact that quantities of usable plaster are usually small and consequently aggregate analysis is of limited value. It is occasionally possible to distinguish them by the make up of any fibrous materials found in them or by their surface treatment, ie paint pigments etc. Their relative dates are best obtained if the samples have remained attached to remnants of the wall itself, when a study of the mortar or concrete adhering is possible.

In the case of painted plasters it may be possible to gain insight into the painting technique employed. For instance, whether the paint was applied to the wet plaster surface or after it had dried. Again, it may be possible to detect the use of organic materials such as vegetable dyes or binders or whether the paint applied was purely inorganic (the most usual form).

#### Sampling

In general, the larger the sample obtained (up to about 250g) the better, but if it is to be useful it must be all taken from what appears to be a homogeneous area of development. If samples are removed from exposed surfaces only the first 20mm should be taken.

The removal of further material from underneath this surface sample should be treated as a separate sample. In this way one avoids the possibility of surface contamination and also minimizes the effect of any later re-pointing of the masonry. In the case of structures that are relatively wide, samples should be taken at intervals between the two faces as it is not unusual for the central part of such structures to contain poor quality material which is not so useful in characterizing the building operations. Wherever possible all samples should be taken in duplicate (not one sample divided into two).

In addition to the cementitious and plaster samples it is useful to have samples of the local soil and local masonry. Such samples are useful for comparative purposes and also enable one to investigate the possibility of any interaction between them and the test materials. This is especially important in the case of buried painted plaster where cross organic contamination is likely to occur.

In the case of lime-rich samples, very friable samples and samples having a high percentage of chalk aggregate, a larger sample size of up to 1000g yields more reliable results.

Once the samples have been bagged, no further treatment is required on the part of the excavator.

An example of mortar analysis is to be found in Graham Black's article on Dean's Yard, Westminster Abbey.

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#### Glossary:

- LIME                      (Quicklime) calcium oxide,  $\text{CaO}$ . White solid made by heating limestone in kilns. Slaked lime, calcium hydroxide,  $\text{Ca(OH)}_2$ , is a white solid formed by the action of water on quicklime (known as slaking).
- PLASTER OF PARIS      Powdered calcium sulphate,  $2 \text{CaSO}_4 \cdot \text{H}_2\text{O}$  obtained by heating gypsum to  $120-130^\circ\text{C}$ .

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## C A S E S

### St Peter, Barton-on-Humber

Kirsty Rodwell and  
Warwick Rodwell

St Peter's Church is redundant and has been vested in the Department of the Environment, for public guardianship and display. It is a building of outstanding architectural and archaeological interest, and is best known for its Anglo-Saxon tower and western annexe. These are both incorporated into the fabric of the large medieval church, below the floor of which are known to be the remains of further parts of the early building.

The DoE is in the process of undertaking a long-term programme of repairs and improvements, which provides both the opportunity and the need to carry out an archaeological investigation in parallel. This investigation, which will involve survey, excavation and architectural recording, was begun in 1978 and is expected to continue, at intervals, for several years.

Excavation was begun, but has not yet been completed, inside the western annexe, tower and west end of the nave (in the area formerly occupied by the Anglo-Saxon chancel).

#### Pre-church features

Although there is a Roman settlement just east of St Peter's, no features of Roman date have yet been encountered beneath the church. There is however a low earthen mound, or platform, on which the earliest stone church was built, and which has yielded a small quantity of Roman and Saxon pottery. There are also burials which appear to ante-date the erection of the first stone church. It may well be that the earthwork was a platform on which an earlier timber church, or other buildings, once stood. This is a feature of considerable interest which will be explored more fully in due course.

#### The Anglo-Saxon stone church

In the later Saxon period the church comprised an axial tower, with a square nave below, a chancel to the east and a small annexe of uncertain function to the west. But it is far from clear that this was the form of the first stone-built church, and there are various structural reasons for suspecting that the tower is not of the same date as the chancel and annexe. It is just possible that they are elements of an early two-celled church to which the tower was introduced as a third element, probably in the 10th century. The sequence should be resolved in 1979.

#### The tower

Excavation has shown that this was originally floored with lime mortar, and that in each of its ground-floor openings there were slightly raised cills of stone and mortar. These have been found intact under the east and west archways and in the north doorway. The floor, which was worn away by the passage of feet, particularly around the south doorway, was patched and raised many times over the centuries.

Three features of particular interest were found in the tower: a 16th century bell casting pit; a brick-built furnace, probably associated with bell founding (this was previously known, but thought to be a 'charnel box'); and a soakaway for an early (?Saxon) font. The modern plaster had been stripped from the lower parts of the walls and much of the infill has been removed from the blocked north doorway, enabling these features to be studied more closely.

Work on the upper parts of the tower has included the unblocking of the Saxon east belfry window, the discovery of an early stoup in the wall behind the clock-weight box, and the recognition in the roof of the base-frame of an early medieval spire. The architectural study of the tower has been continued by Dr H M Taylor.

#### The western annexe

Excavation in here has revealed a complex mass of hearths, furnaces and floor levels, all associated with the working of lead. At present there is no evidence for this part of the church having served any liturgical use in the medieval period: it appears to have been the semi-permanent workshop for plumbers undertaking roof repairs.

#### The chancel

The Anglo-Saxon chancel, a small square structure, was found beneath the floor of the west end of the present nave, exactly where limited excavations many years ago indicated that it lay. The internal arrangements were somewhat disturbed by later activities, but it is nevertheless clear that the chancel was divided by a north-south screen or railing and had different types of flooring in the two parts. To the west of the division, and close to the chancel/tower arch was a rubble foundation which may plausibly be interpreted as the setting for the altar. Beneath this a pit, not as yet fully excavated, contained a collection of bones which might have been buried as relics.

#### The medieval church

The Saxon chancel was short-lived, and was probably demolished in the Norman period to make way for a much more extensive nave and chancel, of which nothing now survives above ground. The foundations of the new nave have been located but not investigated in detail. By the end of the 12th century the church possessed one or more aisles, of which there are some reused capitals and bases in the existing piers of the north arcade.

During the 14th and 15th centuries, however, the whole of the early medieval church was replaced, in stages, by the present nave, chancel and aisles. It is evident that there is still a great deal to learn about the early medieval church from further excavation in the interior.

Only a small part of the archaeology of the successive medieval churches has been glimpsed from the work so far undertaken at the west end of the nave. For example, three more, successive, font drains have been located, and a second bell foundry has been excavated, in which part of the bell mould was preserved in situ.



The survival of earth, mortar and glazed tile floors, and evidence for features (such as aisle benches and screens) associated with them, will enable reconstructions of the church's interior at various periods to be attempted.

#### Churchyard survey

Alongside the excavation, a very detailed ground survey of the church graveyard and all the memorials is being undertaken. The recording of tombstones is being undertaken by a team of volunteers from local WEA classes.

#### Barrow-on-Humber, South Humberside

J B Whitwell and J M Boden

Further excavations by the Humberside Joint Archaeological Committee have taken place at Barrow-on-Humber (TA 074217) since June 1977 in an attempt to give greater archaeological support to the identification of part of Barrow, traditionally known as St Chad, with the Ad Barvae of Bede, where in AD 669 land was reputedly granted to St Chad by Wulfere, King of Mercia, in order to establish a monastery.

An area of approximately 2 acres became available for excavation on the E side of St Chad, where Glanford Borough Council proposed housing development, originally to commence in early 1978. Human burials had been observed some twenty years previously during construction of a sewer main along the northern perimeter of this property, and accordingly trial trenching began immediately S of this and adjacent to the road. Further burials, along with chalk rubble foundations were discovered, prompting the opening of an area of some 250m. Gardening activity and 19th century house building had unfortunately disturbed much of the site down to natural clay leaving, however, the chalk rubble foundations cut into the natural clay of a building orientated E/W and 19.5m long by 8.5m wide with accompanying groups of burials.

This structure appears consistent in plan with a church of mid-late Saxon date, and comprises three cells, which have tentatively been labelled nave, square chancel, and apsidal sanctuary at the E end (fig 1). As regards building phases, the apse, cross-wall and square chancel are of one build, as the clay bonding courses within the chalk rubble in parts, and, along with the chancel, appear to have been completely uncovered last century and some of the chalk burnt for building lime within the apse.

The N wall of the nave and chancel has been completely robbed out, and unfortunately the junction of the nave and chancel on the S side had been disturbed to the base of the foundation trench, but the lack of any sign of removal of a former E nave wall suggests that all three cells of the structure were contemporary. There was no evidence of the position of entrances to the church at foundation level.

Although the site produced insufficient finds to indicate a close date for the building, the groups of burials have given a sequence of cemeteries prior to the building of the church. All burials found were aligned E/W with the head at the W in the characteristic

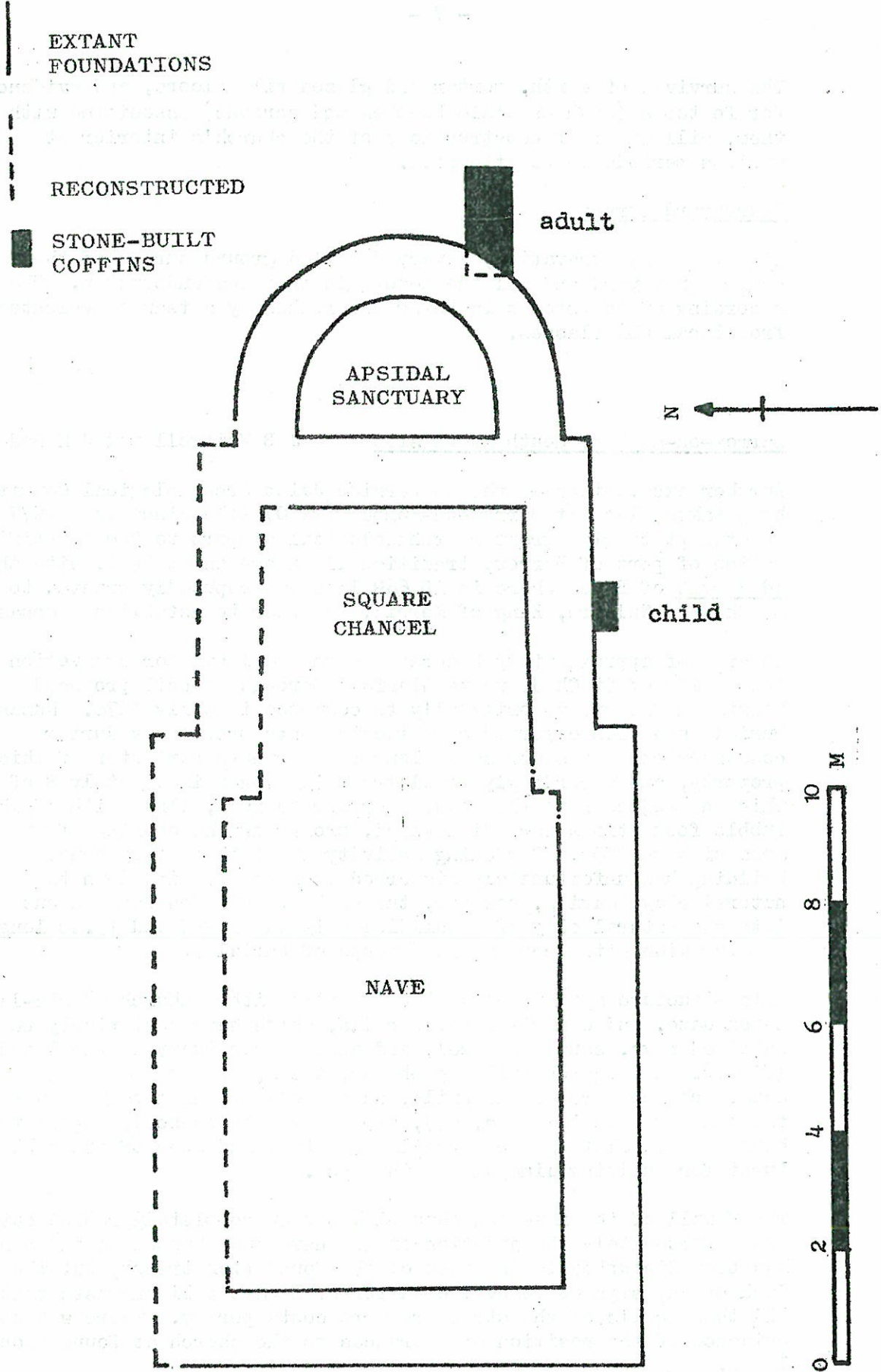


Fig. 1 Barrow-on-Humber, block plan of the excavations (Drawing: J. Boden)

Christian manner, and in all some 75 partial or complete skeletons were represented within the cutting. Two were found in slab-built stone coffins, an adult laid on charcoal, which may provide a C14 date, and a child aged 6-10. A significant group of burials, including the adult in the stone coffin were found to pre-date the construction of the apse and chancel. A further group of burials pre-date the nave at the W end of the site, including three cut by the W nave wall. The child stone coffin and a chalk slab ossuary were set against the S chancel wall and seem to have been built in with it.

Below the area of the apse, five pits have been discovered of which the three largest are post pits with stone packing, lying approximately S/N, with two shallower pits to their W. A further five pits are on an E/W alignment, but although approximately at right angles to the other three, the two sets do not appear to belong to the same structure.

Two ditches appear to define the area of the main cemetery to the E and S of the church, though a further half a dozen burials were noted to their E. The filling of the ditches contained late Saxon and medieval pottery. Disturbed soil above the burials produced two coins of c AD 870.

A series of intersecting ditches were located further E. These seem to have been in use over a considerable period of time, and at least two contained middle Saxon pottery, and fragments of crucibles, moulds and other finds. Though they are presumed from their filling to be close to domestic quarters, the ditches do not themselves make structural sense as such.

J B Whitwell is the Director of the Humberside Archaeological Unit, and J M Boden is the South Humberside Field Officer

#### St Mary, Stainburn

Richard Morris

Stainburn is a remote hamlet in North Yorkshire, about five miles NE of Otley. Its church occupies an exposed and isolated site (c 140m AOD) on a hillside overlooking the cluster of houses which comprises the modern settlement. In 1977 archaeological investigations were undertaken in and around the church in advance of repairs initiated by the Redundant Churches Fund.

#### Stainburn

The first known reference to Stainburn occurs in a memorandum of Archbishop Oswald dated c 972 (Birch 1978) which details losses sustained by the archbishop's estate of Otley. By 1086 many of these losses had been made good, but Stainburn was not among the vills which were restored. Instead, Stainburn seems to have become affiliated in some way to Kirkby Overblow, a settlement of considerable interest (Jones 1976) situated some six miles to the west. During the 12th century most of Stainburn was acquired by Fountains Abbey. This was largely due to the generosity of the Lethley (Lelay)

family, descendants of Evrard, a vassal of the Percys, who were compulsive benefactors to religious houses in Yorkshire (Baillon 1904). The relationship with Fountains produced a large number of documents. Many of these have survived. They contain valuable information about the topography of the medieval township, including a late 12th century list of bounds (traceable today), field names, details of roads, crofts and buildings. There are several 12th century references to the church and its cemetery. Unfortunately there is very little in the way of surviving written evidence for the history of Kirkby Overblow in the same period, so the nature of the relationship between Stainburn chapel and the mother church at Kirkby at its formative stage remains obscure. However, the chantry survey of 1548 recorded that:

In the sayd paryshe of Kyrkby Overblas is a person that serveth the cure hymself, with the assistaunce of a priest which he fyndeth in the chappell of Stayneburne . . . John Watson, incombent, xl yeres of age, hath none other lyving then the proffitts of the sayd chappell, used tyme out of nynde as paryshe church for th'ease of th'inhabitants of Stayneburne . . .

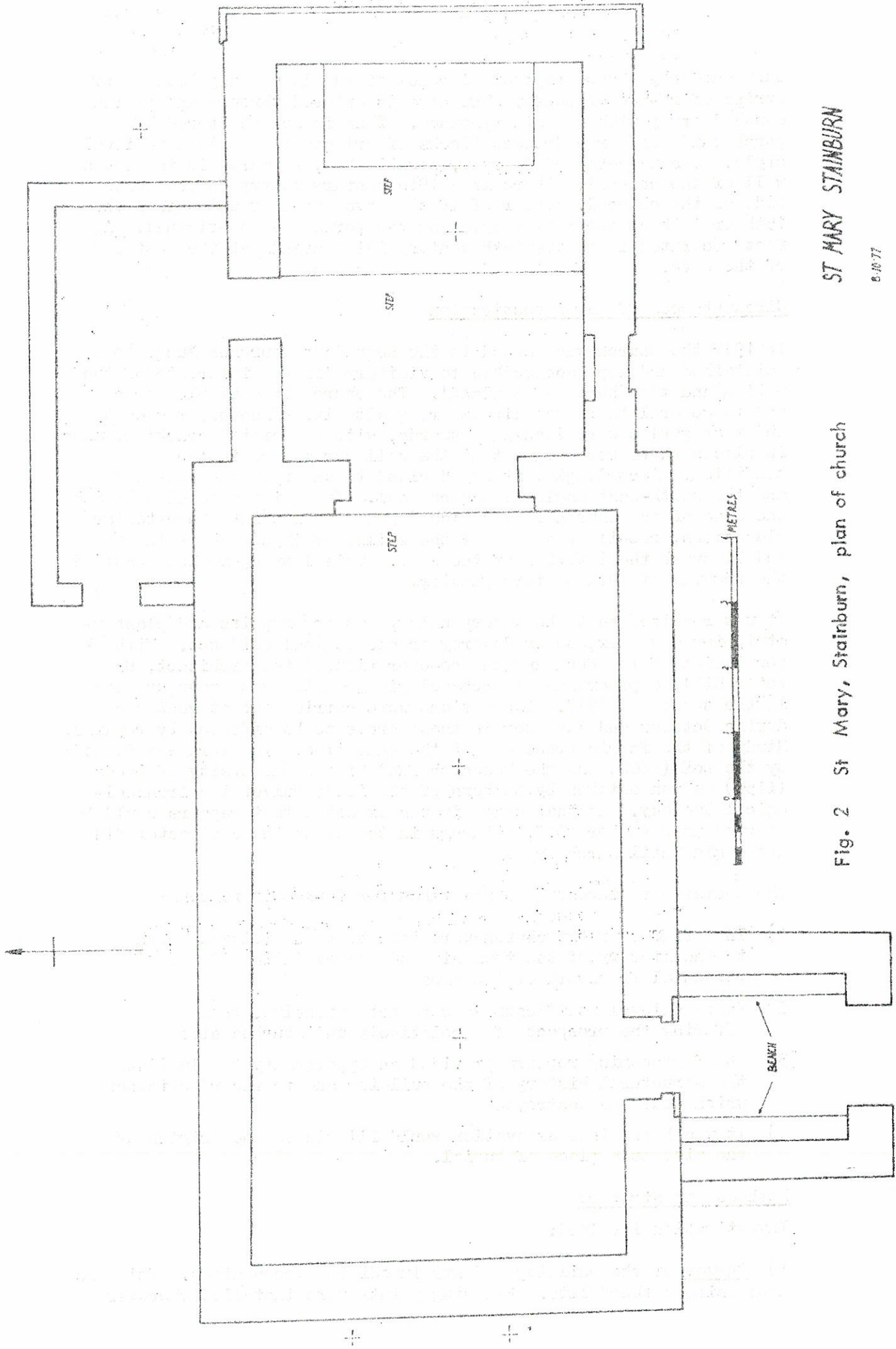
(Surtees Soc 92 (1893), II, 398)

A visitation record made in 1743 informs that there were 73 families in the chapelry, 'None of which are Dissenters of any Sort'. The return states that there 'is only a School-House in Stainburne without any Endowment, to which Parents, who are all small farmers, send their children at the most vacant times of the Year, where they are taught to read English and instructed in the Church-Catechism.' The curate read 'publick service' twice every Sunday, catechised a after the second lesson at Evening Prayer in the summer, and administered the Sacrament in the chapel 'three times Yearly'.

To judge from written records the population of Stainburn in the 19th century was probably not much higher than it was in the 14th century. This picture of a small, stable agricultural community is reflected in the church, which apart from comparatively minor ad hoc alterations remains substantially the same as it was when it was built in the 12th century. During the last century, however, the population of Stainburn has contracted while neighbouring villages (especially North Rigton) have grown. In 1975 Stainburn church was declared redundant.

#### Description of the church (fig 2)

The church consists of a substantial barn-like nave (c 11m x 6m) and a chancel (c 6m x 5m). The gable at the junction between the two has been carried up to form a tall bell-cote. Apart from the east wall of the chancel, which is a post-medieval rebuilding, the church is built of rubble throughout. The fabric includes five original single-splayed round-headed windows: two in the south wall of the nave, one (exceedingly narrow) in the west wall, and one apiece in the north walls of the nave and chancel. Additional windows were pierced through the south walls of the nave and chancel in the 17th and/or 18th centuries. Two of these are of domestic type, and may well incorporate components taken from a secular building or buildings. The third is a freakish triangular-headed affair,



ST MARY STAIRBURN

Fig. 2 St Mary, Stairburn, plan of church

surmounted by a sub-trapezoidal panel of rubble masonry bounded by strips of re-used masonry. The nave is entered through an original south doorway with a plain tympanum. This is now sheltered by a porch built of large dressed blocks of gritstone in late medieval style. A square-headed doorway, now blocked, features in the south wall of the chancel. There is a 19th century vestry on the north side of the chancel. The roof of the nave probably dates from the 15th or 16th century; that covering the porch may be original. A font decorated in a late 12th century idiom stands at the west end of the nave.

#### Circumstances of the investigation

In 1977 the church was vested in the Redundant Churches Fund, to be maintained and kept accessible to visitors 'in the interests of the nation and the Church of England'. The church is a simple structure and in general there was little wrong with it. However, the east and west gables were leaning outwards, with associated cracking, and in places there were signs that the wall cores were in tender condition. Accordingly, it was decided to underpin the west wall and the south-east angle of the chancel. In addition to stabilizing the ends of the church it was also decided to repoint the exterior elevations, rebuild portions of the walls, overhaul the drainage and linewash the interior of the nave. This last operation required the removal of 19th century plaster.

It was realized that the underpinning, masonry repairs and plaster-stripping could expose or destroy archaeological evidence. With the permission of the Fund and the co-operation of the architect, Mr Peter Hill, a programme of archaeological action was drawn up late in the summer of 1977. Excavations were carried out at weekends during October and November in those areas to be affected by repairs. Study of the fabric proceeded at the same time. The work was funded by the DoE (£300) and the Research Fund of the University of Leeds (£150) and undertaken by members of the Leeds University Archaeological Society. At that stage it was expected that repairs would be started in November 1977, although in the event the contractor did not begin until March 1978.

The decision to investigate was taken for four main reasons:

- 1) The origins of the church were thought to be relevant both to the history of the township and the evolution of the parochial framework of the area
- 2) Post-medieval modifications were not extensive, thus offering the prospect of a relatively undisturbed site
- 3) The forthcoming repairs provided an opportunity to elucidate the structural history of the building and to record evidence which would be destroyed
- 4) It was hoped that excavation would illuminate the origins of the site as a place of burial.

#### Methods and strategy

Investigation involved:

- 1) Survey of the building and its immediate surroundings. This was done using a theodolite. Planning points were installed wherever

convenient, according to the system outlined by Mr Derek Phillips (1976, 57-9) and subsequently related to an abstract grid by calculation. (NB: the quoin bearing a bench mark at the west end of the nave was subsequently removed from the wall and repositioned by the contractor).

2) Excavation outside the east and west walls, inside the chancel, plus clearance of undergrowth and superficial deposits along the base of the south wall. Restrictions on depth and area were imposed by the architect, and temporary timber shores set further limitations. Recording was carried out using:

- (a) folding record cards (200mm x 125mm folded; 400mm x 125mm open), one-quarter pre-printed with boxes for basic information, one-quarter plain (for sketch drawings) and lined on the reverse for further notes;
- (b) permatrace for plans and sections;
- (c) 5 x 4 and 35mm cameras;
- (d) a day-book.

3) Study of the fabric. The external elevations were photographed before investigation began, using a 5 x 4 camera. A series of overlapping photographs was taken of the south elevation from a base line measured parallel to the church. The prints were enlarged to a consistent scale of c 1:20, cut and feathered together to form a continuous view. This was done

- (a) as a minimum record, before masonry repairs and repointing; and
- (b) as a basis for a drawn record of the fabric, in case subsequent investigation should yield facts which would render the making of such a record desirable.

This technique of rectified photography is crude, but for this particular site was perfectly adequate.

Indoors, plaster was stripped by members of the archaeological team, using a broad-bladed bolster and wearing goggles. Holes were made at intervals to test for earlier surfaces and colour. Where earlier layers of plaster or linewash were encountered they were left in situ. The roofs were recorded by photograph and measured drawing.

### Results

Excavation and examination of the fabric confirmed that the main fabric of the church as it now stands was built in a single operation. The survey showed that the walls of the nave and chancel had been set out with great accuracy. The interior elevations retained their original mortar (or that of a comprehensive medieval repointing). The following portions of the fabric were to all intents and purposes rebuilt in the 19th century:

- 1) the western angles of the nave
- 2) the upper part of the western gable end
- 3) the quoins at the junction between the nave and chancel

The east end was rebuilt in the 17th or 18th century, in the same position as its predecessor, and incorporating parts of a late medieval window.

No foundations were provided by the medieval builders. The walls were found to stand upon a shallow offset footing which had been laid directly upon the medieval ground surface. Since much of this surface consisted of concentrations of gritstone rubble this overlay technique was perfectly satisfactory.

Burials were encountered inside and outside the church, and it is likely that the chapel possessed rights of burial from the moment of its establishment. A dense concentration of medieval and later burials was investigated at the west end. These fell into two groups:

- 1) medieval burials (probably 13th/14th century) occupying shallow scoops, with shrouds but without coffins, possibly with timber markers;
- 2) 18th/early 19th century burials, all in coffins (wood surviving, some with fittings) placed in deeply dug graves.

The medieval graves lay close to the surface from which they were excavated, and it may be that extra coverage was achieved by heaping mounds of earth above them. One burial which had been neatly sliced by the construction trench for the south porch lay within 200mm of the modern ground surface. The later burials were all in deeper graves, some cut to a template, and probably date from the period c 1780-1830. These included the grave of a young child in which the coffin had been encased in a jacket of white plaster. The time interval between the first 'tier' of graves and the second may indicate that burial proceeded on a cyclic basis, moving from one part of the churchyard to another. There are few signs of burial on the north side of the church. This is often explained by superstition, but in this case the explanation may have to do with a dense spread of fractured gritstone which was encountered during excavation on the north side of the chancel. Piercing this would have been an arduous task, and it may be that gravediggers sought out 'soft spots' in the churchyard (as at the west end) and that areas which resisted the pick were avoided.

The nature of the ground in the churchyard could indeed explain the site of the church, which is set apart from the hamlet. The farmer of the surrounding fields pointed out that the churchyard occupies the worst agricultural land in the neighbourhood, and observed that the site is particularly susceptible to gales. The choice of this otherwise inhospitable site could reflect the pressure on rural resources in the area when the decision to build a chapel was taken.

Inside the church work concentrated on the removal of plaster and excavation in the eastern part of the chancel. As the plaster was stripped and the walls were examined at close quarters it became clear that the church had originally been linewashed, but not plastered. Fragmentary remains of black painted letters, late 16th century in style, were revealed on the south wall. These may have represented the names of the holders of adjacent pews. They have now been obliterated by the contractor, along with the Ten Commandments and Lord's Prayer which were painted up at either side of the chancel arch.



At the west end of the church removal of plaster disclosed evidence for the former presence of a timber gallery. This seems to have been installed in the 18th century, and was removed in the 19th.

Five quern-stones were incorporated in the external fabric; plaster stripping exposed two (possibly three) more.

### Finds

The excavations produced some 45 sherds of medieval pottery. This total is surprisingly high in view of the small area which was investigated and the variety of wares (at least eight) which were represented. Most of the sherds appear to date from the 13th and 14th centuries, and the majority were found in the excavation outside the west end of the nave. One possibility suggested by the pottery is the presence of a curate's house somewhere on the western side of the churchyard; another would be that material was being brought into the churchyard to dump over graves. No pottery earlier than the 12th century was recovered, although one or two finds of prehistoric character were noted (eg flint flakes). The area is, in fact, quite rich in prehistoric material, and a Bronze Age socketed axehead was found by a labourer in a ditch near the church.

Most of the medieval graves yielded shroud pins, one produced an iron arrowhead, and another contained a brass belt buckle. Several of the pins possessed heads formed of twisted wire, although the head of one pin (a large, fine specimen) had been soldered to the shank. Most of the shanks had been tinned.

The areas investigated to the south and east of the church produced quantities of glass (probably from 18th century glazing) and lead canes.

### Discussion

The investigation was too limited in scope to provide confident answers to central questions about the site: when was the first church established, and what were the origins of the site as a place of burial? All the evidence so far recovered points to the likelihood that the chapel was established on a virgin site in the 12th century and that the graveyard was created at the same time. Only a fraction of the site has been examined, however, and it may well be that an earlier nucleus awaits recognition.

The investigation threw broader issues into focus concerning the history of the township as a whole. It is in this context that the report on the investigation will be published. Future work is planned which will coordinate the ample supply of written records with a field by field study of the parish. It is intended to make a systematic record of the gravestones in the churchyard and at the same time to carry out a botanical study of its flora. Geophysical survey of the field to the east of the churchyard suggests the possibility of earlier features running beneath the boundary. This relationship will be tested. The need to study a church in relation to its setting, not merely as an isolated artefact, is paramount.

### References

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- Jones, G R J, 1976 Historical Geography and our Landed Heritage, Leeds University Rev, 19, 53-78 esp. 66-74
- Phillips, A D, 1976 Excavation techniques in church archaeology, in The Archaeological Study of Churches (eds Peter Addyman and Richard Morris), 54-59

### Wells Cathedral

Warwick Rodwell

In architectural history Wells has a special place: it led Europe in the development of Gothic. Furthermore, the west front of the Cathedral is no less important to art history of the 13th century, and the Vicars' Close is a unique survival of a complete 14th century college for Vicars Choral. Yet despite, and probably because of, all this architectural grandeur, the archaeological study of Wells has been almost entirely overlooked. Apart from trenching in the Close in 1850 and 1894, to search for the foundations of the demolished Stillington Chapel, there has been no excavation in the city or systematic recording. Historical study has, however, been intense and exceptionally rewarding. (1)

It is therefore most welcome in 1978, with the enthusiastic cooperation of the Dean and Chapter and the cathedral architect, that several programmes of archaeological work have been put into effect by CRAAGS. First, a complete new survey has been prepared of the cathedral, Cloisters, Vicars' Close and adjoining buildings. Producing the first accurate, large-scale plans has revealed an amazing number of architectural details which have previously escaped notice. Secondly, a small excavation in the Vicars' Close, and a much larger one to the east of the Cloister have begun to add the below-ground dimension to the archaeological study of Wells.

An extension of the Masons' Yard into 'The Canery' provided the opportunity for an excavation partly overlapping the Stillington Chapel. In this critical area it had been shown (1894) that the Chapel overlay an earlier structure, interpreted as the 'Lady Chapel by the Cloister' (demolished 1477), which in turn incorporated part of the east end of the Anglo-Saxon cathedral. St John Hope's argument (2) that the present cathedral (begun c 1180) lay to the north of, and on a different alignment from, its predecessor needed to be examined archaeologically.

A more complex series of structures and features was found than was anticipated and the depth of stratification exceeded 3m. The following is a summary of the development of the site:

- 1) The area was attractive for prehistoric settlement on account of the copious supply of water from the springs (or 'wells') which lie just to the east of the excavation. A scatter of mesolithic to Bronze Age flint implements and flakes provides the earliest evidence for occupation.

- 2) Finds of Roman building materials and pottery from the Flavian period onwards, constitute the first recorded evidence for a Roman settlement in the city.
- 3) The earliest excavated features, however, were two graves, potentially of middle Saxon date. Over the graves were found walls and floors relating to three periods of building of late Saxon and Norman date. Only small fragments of these buildings could be uncovered, but from the associated debris they would appear to have been domestic rather than religious structures, although obviously still part of the cathedral complex. One of these structural phases might perhaps be equated with Bishop Giso's provision of a cloister, dormitory and refectory for the canons in the mid 11th century.
- 4) Just north of the domestic buildings, was the medieval 'Lady Chapel by the Cloister', which had at least three structural phases antedating the 13th century. Although only a very small part of this building has been examined, the evidence accords well with St John Hope's suggestion that this is the eastern termination of the Saxon and Norman cathedral. This may well be the Lady Chapel which was already in existence in Giso's episcopate.
- 5) The structures so far listed followed the alignment of the High Street and Market Place, but in c 1180 the present cathedral was erected on a different alignment and on a new site to the north of the old buildings.
- 6) In the 1220s Bishop Jocelyn added the present cloister, for which he must have demolished the old cathedral - all except the Lady Chapel, which became an annexe to the east side of the cloister. Excavation has shown that this chapel was originally destined for demolition too, but a change of plan allowed for its incorporation in the new structure. A possible reason for the retention of the chapel was that it served as a mausoleum for the Saxon bishops, until their relics were moved into the presbytery of the new cathedral.
- 7) Jocelyn also provided a water supply, from St Andrew's Holy Well, to the new cloister, and part of his early 13th century vaulted conduit was found. This was not merely a canalization of an existing stream, as previously supposed, but was an aqueduct built to carry water at a higher level than that at which it would naturally have flowed.
- 8) A masons' chipping floor, possibly associated with the building of the cloister, was found, and through this had been cut a series of graves in the 13th and 14th centuries. These are likely to be burials of Vicars Choral, who, after the reorganization of the Wells cemeteries in 1243, were interred in the Canery.
- 9) The 'Lady Chapel by the Cloister' was expanded in size by the addition of aisles, probably in c 1276. Part of the south aisle and arcade fell within the excavated area. Two patches of 13th century tile paving survived in situ, and to the south of the chapel hundreds of fragments of tiles, including wasters, were found amongst masons' debris.
- 10) In 1453 Bishop Beckington laid a 4" lead water main through the Canery and cloister, to supply his twelve new houses in the Market Place, and part of the stone-built duct for this pipe was found alongside the chapel.

11) In 1477 the Lady Chapel was described as 'ruinous' and was demolished by Bishop Stillington, to make way for his new chantry chapel. This was a large cruciform building attached to the cloister at its west end. The south transept of this massively constructed building lay within the excavation. But in order to build the chapel Stillington had first to divert Jocelyn's conduit and Beckington's watermain. Both were found to run across the excavated area. The new conduit was built largely from dressed stones robbed out of the earlier Lady Chapel. Alongside the culvert ran the diverted watermain, in a stone-built, clay-packed duct. Some 26m of the original pipe, complete with junction collars, repairs and patches, were found. Two medieval manholes which gave access to the pipe were also located: inside one was a 'wash-out' valve which enabled sediment to be flushed out of the pipe.

12) To the south of Stillington's chapel lay a 15th century masons' yard, in which two long narrow buildings had been erected as workshops. Each measured c 12m by 3m, and one contained the foundation for a chimney stack.

13) One of these workshops had survived into the 18th century, following the conversion of half of it into a stable for four horses. The 'conversion' is described in a lease of 1541-2.

14) The other workshop was demolished in the 16th century, probably at the same time as Stillington's chapel (1552).

15) Stone robbing on the site continued in the 16th and 17th centuries, while in the 18th century the area was laid out as a formal garden. Many features associated with these post-Dissolution activities were found.

#### Footnotes

- 1 Colchester, L S, & Harvey, J H, 1974 Wells Cathedral, Archaeol J, 131
- 2 Proc Somerset Archaeol Soc, 55 (1909)

#### BOOK REVIEW

David Parsons, ed, A bibliography of Leicestershire Churches  
Part 1: the periodical sources  
207mm x 150mm, 60pp. University of Leicester Department of Adult Education in association with Leicestershire County Library, 1978.  
Price £1.50 post free.

This booklet is the work of members of a course arranged by the University of Leicester Department of Adult Education. Two other parts are in progress: Part II covering references in printed sources and Part III, which is expected to take several years to complete, covering unpublished documents. The area covered is that of the post 1974 reorganization of Leicestershire and Rutland into one county which approximates to the Diocese of Leicester and part of the Diocese of Peterborough.

The main part of the booklet is a gazetteer which lists in alphabetical order of parishes references in published articles and notes to the architectural history and archaeology of 404 Anglican churches. Vanished churches and chapels have not been included. The references are particularly valuable for details of 19th century restoration and new church building. Readers may, however, experience some difficulty in using the gazetteer entries. Only the name of the journal, its volume number, year of publication and page references are given. It is not possible, without checking each reference, to ascertain which entry refers to a particular aspect of the church's history. For instance, under Leicester St Martin, there are 134 separate references!

RT

