V

A NEW APPROACH TO CHURCH ARCHAEOLOGY: DOWSING, EXCAVATION AND DOCUMENTARY WORK AT WOODHORN, PONTELAND AND THE PRE-NORMAN CATHEDRAL AT DURHAM

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1. *Introduction* (R.N.B.)

OVER THE last two decades the importance of the church for our understanding of the history of the community which built and used it has become an archaeological commonplace.[1] The church is, after all, usually the oldest surviving building in a village or town and often occupies the oldest identifiable site. It was the focus for the life of a medieval settlement and the alterations and re-buildings which it suffered are a vital index, not only to changes in liturgical practice, but also to the varying economic fortunes of the parish and its patrons. It is this awareness of the wider significance of the church which lies behind the increasingly sensitive analysis now lavished on these buildings.[2] The results have often been startling. Under this type of close scrutiny, for example, All Saints' Brixworth (Northants) is now yielding an enormous amount of new information, despite the fact that it has long been recognized as an ambitious Anglo-Saxon structure.[3] And even such an outwardly unpromising church as St. Mary, Rivenhall (Essex) proved to have a most complex medieval history concealed beneath its Victorian skin.[4]

Ideally this structural analysis of the standing building needs to be combined with the evidence now hidden below ground. It is here that problems arise. Where a church has been declared redundant (or was simply abandoned in an earlier generation), then total excavation is possible and the work at sites like St. Peter's Barton on Humber and Wharram Percy has afforded remarkable insights.[5] But most English churches still have congregations and incumbents. And they are naturally often unenthusiastic about proposals to remove their pews and flooring in a cause to which they do not give high priority. Extensive excavation in and around churches which are still in active use has therefore necessarily been limited to those buildings which are widely acknowledged as crucial to architectural history—hence the seminal work at Deerhurst (Glos.) and Repton (Derbys.).[6] For the great majority of English churches however, the archaeologist has to content himself with small-scale investigation in advance of floor repairs, drainage works or the installation of heating systems. Such "keyhole archaeology" can yield its dividends—witness the information obtained

* This paper is a report on a collaborative project; initials after section headings indicate specific authorship.

about the building of the seventh-century crypt at Hexham[7]—but the results of this kind of limited enquiry can often be misleadingly deceptive.

Where excavation is impractical it would seem logical to turn to other investigative techniques such as resistivity surveys or proton-magnetometers.[8] Yet such remote-sensing devices have their weaknesses and, in churches, they share a common defect with the excavator for their use frequently involves disturbance of floors and furniture. In addition the instruments are often expensive to purchase and can be time-consuming to operate.

It was against this background that I received a report in 1981 from a retired research engineer, Denis Briggs, enclosing plans of several Northumberland churches on which he had superimposed the lines of buried foundations located by dowsing. He had discovered his own ability in this field when investigating the phenomenon in a colleague and had decided to experiment with the technique to see what types of sub-surface interfaces were susceptible to tracing in this way. The plans which he produced were (at the very least) highly plausible and made sense, both in terms of features visible in the standing structures and in terms of parallels known in this country and on the continent. What is more, these results had been obtained by using an inexpensive method which involved no disturbance of floors, pews or congregations.

Together with Eric Cambridge we embarked on a programme of planning dowsed features in various churches in Northumberland. To date over twenty buildings have been surveyed.[9] The sites were selected on two grounds. We have, first, concentrated on churches where documentary or sculptural evidence points to an early foundation. In some cases (as at Ovingham, Corbridge and Bywell[10]), Anglo-Saxon fabric is still visible in the standing structure. More numerous are churches where later builders have removed all traces of the work of their Anglo-Saxon predecessors. At Norham, for example, the earliest recognizable work is of Norman date though the records of the Cuthbert Community and the remains of high quality carving show that there had been a pre-Conquest church on the site.[11] Similarly, whilst Bede tells us that there was a church at St. Oswald's near Wall in the seventh century, the present building dates only as far back as 1737.[12] In cases such as these, the destroyed phases, if recoverable by dowsing, would obviously be of great importance.

A second criterion in our selection of sites was a need to include as wide a variety of church types as possible. For this reason our work has ranged from St. John Lee, Acomb (the most likely candidate for the site of St. John of Beverley's seventh-century hermitage)[13] through to the great Anglo-Saxon cathedral erected by the Cuthbert Community after it moved to Durham in 995 A.D.

Some indication of the complexity of information which has become available through dowsing is supplied by the accompanying provisional plan of St. Mary's, Ponteland (fig. 1). Here the earliest parts of the above-ground structure are the lower courses of the tower and the W respond of the N aisle arcade; both are Norman.[14] The dowsed plan, however, seems to indicate the existence of more than one pre-Norman phase, which, if proven, would provide a context for the Anglo-Saxon grave-marker in the church. Among other intriguing features are the traces of a well in the chancel, drawing on an underground water-course running N–S across the

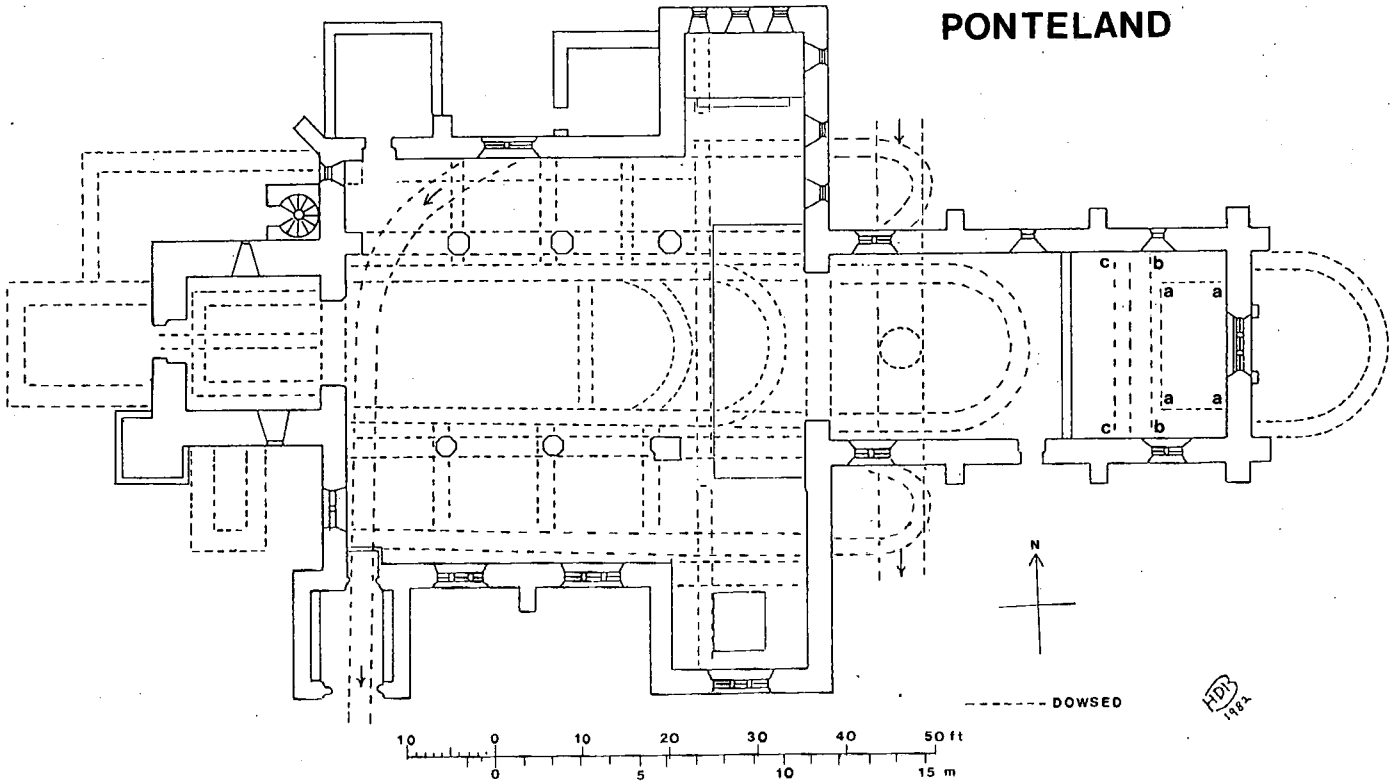


Fig. 1. Dowsed features at St. Mary's, Ponteland. The two water courses are marked by arrows.

building; this is a phenomenon which appears again in Northumberland at Simonburn and is also recorded at York, Beverley, Winchester and Marden (Heref.).[15] Clearly it is of considerable liturgical interest.

Elsewhere, even though the standing structures are of pre-Conquest date, dowsing suggests that many had a longer history than hitherto recognized. At Corbridge, for example, the tower was clearly altered and raised within the Anglo-Saxon period. Its visible pre-Conquest history is complicated enough, but dowsing seems to add yet another phase in the traces of a N–S foundation underlying the tower. A similar foundation appears to underlie the two-period Anglo-Saxon tower at St. Andrew's, Bywell.

However exciting these results may appear we have, from the first, been concerned to validate the findings. The need for such testing is clear. The accessible publications on archaeological dowsing frequently ignore modern excavation techniques and labour under out-dated chronological assumptions; as a result they have not inspired great confidence in professional circles. In addition much of the evidence both for and against the efficacy of the technique is based on hearsay. Consequently most archaeologists associate the method with a "lunatic fringe", or, more positively, would probably go no further than to endorse Aitken's opinion that "where success [in dowsing prediction] is not due to coincidence (on many archaeological sites it is difficult to dig and find *nothing*), it represents a high degree of archaeological intuition on the part of the dowser".[16] The majority of our immediate colleagues, indeed, would view even that statement as over-complimentary to the technique.

Validation can take various forms. Least convincing, in practice, is the use of readily accessible documents or illustrations to provide independent evidence of features located by the dowser. The suspicion inevitably lingers that such sub-surface remains (like those of the destroyed nineteenth-century baptistry at Heddon-on-the-Wall)[17] were only discovered because the dowser had previous knowledge of their existence. Equally the fact that dowsed features can be correlated with elements like blocked doors or roofing scars in the standing structure can be explained by the cynical observer as the product of sharp deduction rather than a genuine response to a buried foundation. To a certain extent such suspicions can be allayed by repeating the survey with other dowsers and the very fact that the same reaction can be obtained time and again under similar conditions ought to lend some credence to the results. Our experience, however, is that no sceptical archaeologist will be so convinced.

What follows therefore in sections 3–6 is a report on a group of validation exercises of a type which may prove acceptable to archaeological opinion: the results of excavations at Woodhorn; a preliminary note on excavations in progress at Ponteland; documentary research at Durham. All of this work is linked to dowsing surveys but the results can, of course, be read in their own right as summaries of excavations and documentary analysis.

2. *Dowsing Technique* (H.D.B.)

Dowsing has many ramifications but for the purpose of this experimental project, now in its third year, it implies the use of an unusual means to recover the plans of

early church buildings. A dowser can detect any feature which is different from its surroundings and the interfaces or boundaries are usually signalled by the movement of some form of hand held rod. The writer prefers 'L' rods of steel wire 20 cm by 12 cm but the size and material are not important. Angle rods are held in each hand by the shorter limbs so that the longer limbs are free to rotate in a horizontal plane. When questing the rods are held pointing forwards; on crossing an interface the rods swing inwards through 90 degrees. The reaction is the same when holding a single rod in one hand, that is, it will turn through 90 degrees, but greater precision is obtained with two rods. To get satisfactory results the rods must be delicately poised. Once an interface has been discovered it should be explored by approaching it at right angles and putting down markers. When questing the dowser must concentrate on the object sought. This helps to eliminate extraneous influences and suggestions. So far coherent plans have been recovered from twenty-three different church sites and these have been drawn up and presented in three detailed reports.[9] If nothing else, the project has produced up to date basic plans of the churches investigated. In only one instance was a reasonable plan available and in two instances a whole church had to be surveyed before the dowsed results could be recorded.

Experience during the project has revealed the following defects:-

(1) tiredness and lack of concentration can result in inaccurate dowsing—it is only too easy to walk over an interface and miss the signal.

(2) interpretation of results can be difficult, especially when there are overlying remains, as dating depends mainly on characteristic patterns or historical records.

(3) some scientists suggest that dowsers respond directly or indirectly to Hertzian waves.[18] If this is so then we must expect some inaccuracies due to reflection, refraction, diffraction and atmospheric disturbances. The apparent sideways displacement which sometimes happens when traces pass beneath a wall may be attributable to refraction though it is possible that actual physical displacement may have taken place. Minor discrepancies between successive dowsing surveys are probably due to the causes described here.

(4) wherever a dowser starts questing becomes the "norm", so if he starts over a broad foundation or plinth, the first interface signal indicates the surrounding earth and this can lead to a false interpretation. It is essential, therefore, to have sufficient "elbow room" when exploring a site.

(5) dowsing on open sites has not been so successful for a variety of reasons which are still being investigated, but one difficulty is the multiplicity of undefined interfaces.

The principal advantages that dowsing could offer to archaeology are:-

(1) speed in recovering the pattern of underground remains or imprints.

(2) minimum effort.

(3) minimum expense (no labour, insurance or licence costs).

(4) minimum disturbance.

(5) no damage to fabric or furniture.

(6) ability to recover plans where excavation is impossible or not permissible.

(7) ability to obtain a clear cut boundary line where resistivity measurements are inhibited by debris and wall tumble.[19]

Woodhorn, trench A, showing mortared foundation from W. Chalk marks on the steps mark the lines of the foundation predicted by dowsing. (Photo: G. B. Wade)

(8) if the existence of "imprints" is accepted, then plans can sometimes be recovered where tangible remains are absent (see below, section 5).

As yet there has been no satisfactory explanation of the reaction experienced by dowsers. The actual deflection of the rods is not due to magnetism, as it occurs when the rods are of non magnetic material such as copper, plastic or wood. The movement is not caused by static or current electricity because the rods function normally when they are earthed or connected together electrically and the response is also the same when the dowser stands on an insulating mat. By fastening a small mirror to the back of one wrist and reflecting a beam of light on to a remote screen, the writer has established that a small movement of the wrist takes place, sufficient to cause an angle rod to swivel under gravity. The dowser is not conscious of this movement, though some dowsers experience an anticipatory sensation in the elbows before the rods move. This is as far as the writer has been able to analyse the experience. It seems evident, however, that a muscular stimulus is generated by an unknown influence and the writer would not dismiss altogether the suggestion that the influence is in some way connected with the radiation of Hertzian waves.[20]

3. *Excavations in the chancel of Woodhorn church* (R.N.B.)

The redundant church of St. Mary, Woodhorn was acquired by Ashington Urban District (now merged into Wansbeck District) Council for use as a museum and cultural centre in November 1973. After extensive repairs to the fabric (work which was accompanied by archaeological investigation by Miss Barbara Harbottle in the nave) the building was opened to the public in 1975.[21] The structural history of the church has recently been summarized by Miss Harbottle and Dr. Elizabeth Coatsworth and need not detain us here.[22] Suffice it to say that the earliest visible phase of building is represented by the round-headed windows above the nave arcades, and that these are of late Saxon or early Norman date. Arcades were inserted in the twelfth century, and thirteenth-century work survives in the chancel arch and in the wide E. bays of the nave. The present chancel, however, is largely the result of B. A. Green's restoration in 1842–3, though it probably preserves the lines of its thirteenth-century predecessor.

The dowsing survey suggested that various foundations, including those of an apse, underlay the chancel floor (fig. 2). Wansbeck Council generously gave permission for excavations designed to locate these foundations and it is a pleasure to record our appreciation of the help afforded by the Council's officers, Mr. George Stephenson, Mr. John Robinson and the curator of the museum, Mr. Charles Watson. The work was carried out by Eric Cambridge and Richard Bailey in February 1982.

Two trenches were excavated, their size constrained by the need to avoid too great a disruption of the normal use of the building. Trench A was placed at the S end of the apse predicted by Denis Briggs—an apse, it should be stressed, for which there was neither documentary nor structural evidence before our work began. As can be seen from fig. 3 and plate 1 a foundation of mortared stones *was* found 20 cm below the paved surface: the top of the S face was precisely where it had been predicted by the dowser, the N face was 2 cm north of its predicted line. Adjoining the foundation to

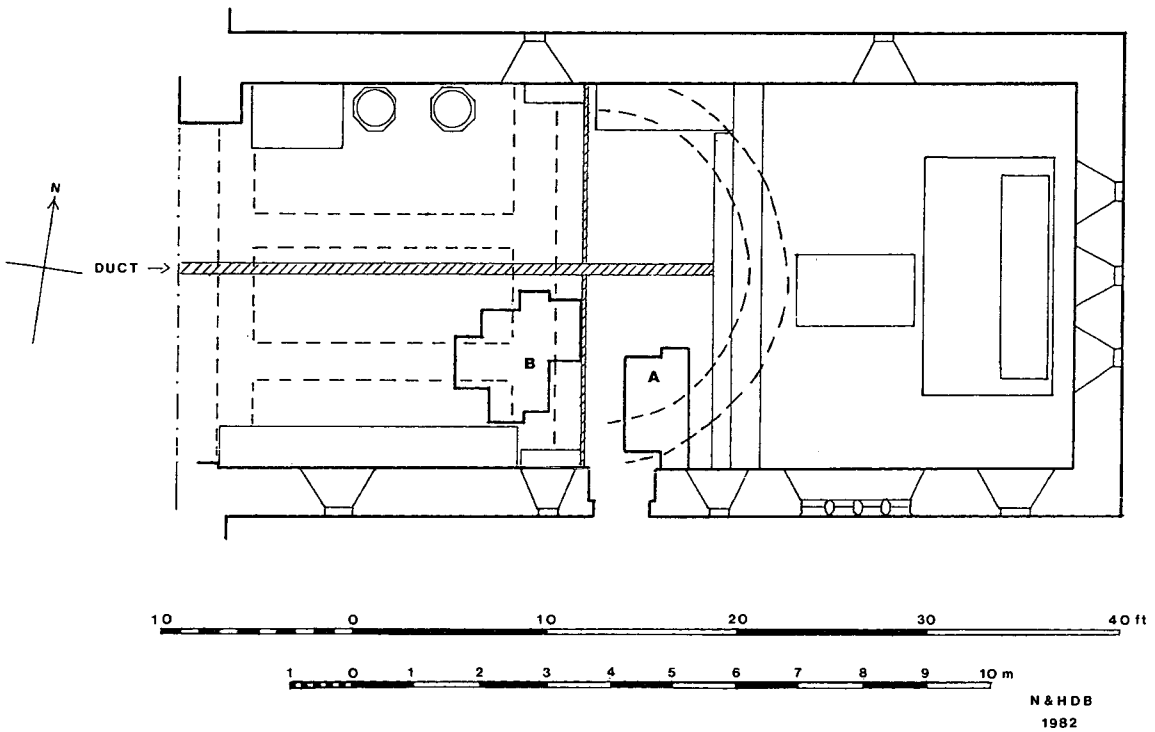


Fig. 2. Trench plan in relation to dowsed features (marked by broken lines) at St. Mary's Woodhorn.

the N was a flat mortared area (layer b), perhaps part of an associated floor. In the E section the foundations were standing some 54 cm high above the clay subsoil. In the W part of the trench, however, the foundation had been cut through by burials and later building activity: all that remained here were intermittent vestigial traces of its slot beneath a thick layer of dirty brown soil filled with disturbed burials, stones, masons' debris and medieval floor tiles. Burials had also cut away part of the S face of the foundation immediately W of the E section of the trench.

Archaeologically the foundation cannot be closely dated. It was both cut through and covered by bone-laden dirty brown soil containing mortar lenses, stones, medieval floor tiles and the bowl of a clay pipe (layers 3/4/5). These in turn were cut by a narrow trench reaching to the footings of the S wall, which were presumably investigated (if not completely re-built) in the nineteenth-century restoration. The tiles,

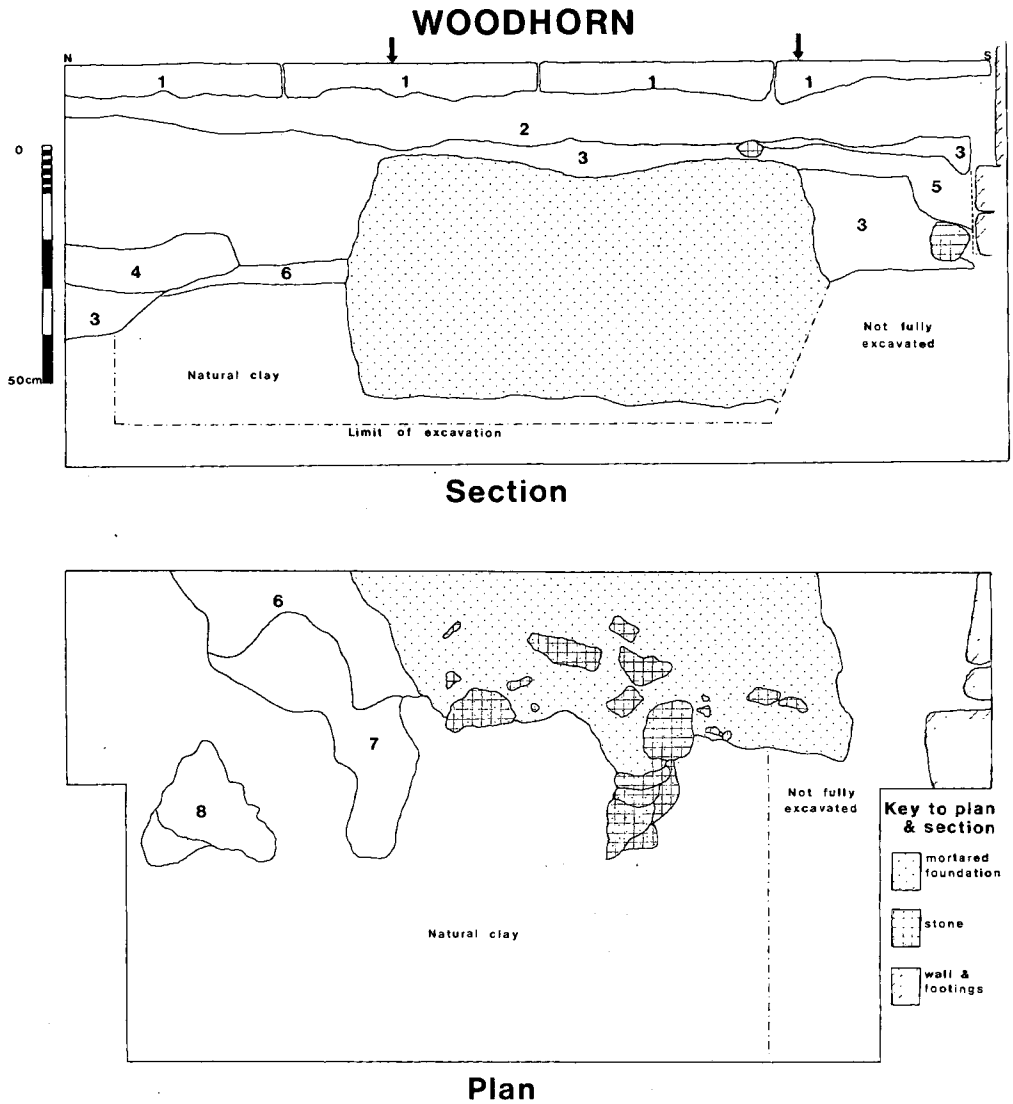


Fig. 3. Plan and E section of Trench A at Woodhorn. *Key*: *1*. paving stones; *2*. bedding for floor; *3*. brown soil with bones and medieval tiles;*4./5*. mortar lenses; *6*. mortared surface (for floor?); *7*. "spur" of natural clay cut by foundation and later burials; *8*. area of loose cobbles/stones on natural clay. Arrows mark the line of foundation as predicted by dowsing.

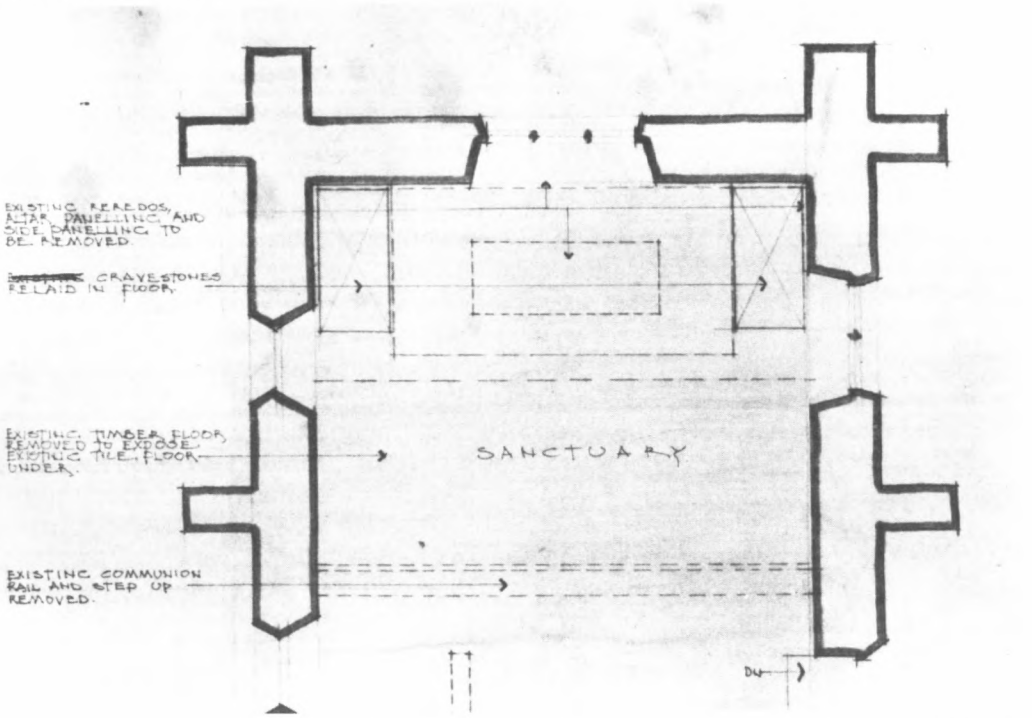
c. 125 mm square and 23/26 mm thick, retain traces of yellow and dark green glaze and are similar to those found by Barbara Harbottle in her 1974 excavation in the nave. Her report then described them as being of a type "very common in the north-east of England, and ... found on every medieval site excavated in Newcastle".[23] The pipe is of Parson's type 4 datable to *c.* 1650–1680.[24] The destruction of the apse foundation could therefore have taken place in successive grave-diggings at any date from the late medieval period to the nineteenth century though the standing wall above could, of course, have been destroyed long before this. On architectural grounds, indeed, the apse is unlikely to be later than *c.* 1200 A.D., and this would fit with an assumption that it was destroyed with the building of the thirteenth-century chancel.

No evidence for foundations or structures was found in trench B which was cleared down to the natural clay subsoil at a depth of 97 cm below the paved surface. The area was filled by the same dirty brown bone-laden soil as found in trench A. Identical floor tiles were also present in this fill. Denis Briggs kept a continuous monitoring watch on the excavation as it progressed and, at a depth of 85 cm below the paved surface, the dowsing "signal" was lost. The disturbing implication was that a feature had been removed unrecognized at that depth, but close anlaysis of the sections happily dispelled this notion: the fill was consistent from a point immediately below the bedding for the paved surface down to the natural clay subsoil and there was nothing in the section which in any way corresponded to the dowsed indications. Later, a limited resistivity survey was carried out by Dr. C. Titman (Department of Geophysics, University of Newcastle upon Tyne) across one of the dowsed "foundation" traces in this western part of the chancel. He found no anomaly which could be equated with the dowsed signal, though it should be stressed that his survey was necessarily restricted in its scope. The negative results from this trench are further discussed in section 5 below.

The foundation in Trench A was not removed in excavation since there were then plans for its preservation and display; this scheme was later abandoned in favour of marking the lines of the dowsed apse on the chancel floor. Plans and finds will be deposited in the Museum at Woodhorn.

4. *Excavations at Ponteland* (R.N.B.)

The Ponteland validation exercise is still in progress at the time of writing but the work is sufficiently advanced to allow a preliminary statement. Excavations have taken place in the angle between the chancel and N transept in an attempt to locate the apse predicted there by dowsing (fig. 1). The standing chancel wall at this point is of thirteenth-century date and the visible fabric below the inserted fourteenth-century window betrays no sign of any break in its consistent ashlar make-up or regular coursing. Excavations, however, show that the mortared foundations of the thirteenth-century wall incorporate and over-ride the foundations of an earlier wall whose stones are set in clay, and whose fabric is completely different in type to the later work. The break between the two sets of foundations lies 12 cm E of the point where the E wall of the predicted apse would junction with the line of the present chancel. 5 cm E of this predicted point there is a cobble spread reaching NE beyond the excavated area,



Plan of sanctuary of St. Mary's church Ponteland, prepared in 1971 before the re-ordering of 1972, showing the altar-plinth and step removed in 1972. (Reproduced, with permission, from Northumberland Record Office plan accompanying Faculty 3548)

which is exactly on line with the dowsed apse. Further work is still required but sufficient has been done to suggest that the dowser has correctly indicated the junction of different parts and periods of the building which was in no way predictable from the present appearance of the standing wall.

5. *The phenomenon of "imprint"* (R.N.B.)

The plan of Woodhorn chancel (fig. 2) shows the line of the predicted apse passing through trench A. There was no indication, in the dowsed plan, of the adjacent area of flooring which was discovered on excavation nor of a large stone which overlay the foundation and extended N from its line. The two dowsers who independently established the line of the foundation before the paving was removed both appear therefore to have "filtered out" signals other than those related to the line of the apse. Equally interesting is that neither dowser remarked on any difference in the signal between those parts of the foundation where the mortared stones were found to stand some 54 cm high and those sections where it only survived (if at all) as vestigial traces of a foundation slot. In this latter case they seem to have responded to an interface which was barely recoverable by archaeological excavation.

The awesome possibility that dowsers can in fact trace features which are *entirely* non-recoverable by excavation is suggested by another part of our further work in Ponteland church (fig. 1). At the E end of the building the raised sanctuary is paved with tiles and re-used grave slabs which were set in their present position in the restoration of 1885. On this surface, at least six dowsers independently located the three features marked on the plan as *a*, *b*, *c*. It is the two easternmost which are our immediate concern. One is a rectangular area against the E wall and the second is a line stretching across the chancel immediately to the W. There is no indication on the floor of either of these features. Some weeks after plotting these lines, work on the Faculty records in the Northumberland Local Record Office produced an architect's plan, prepared in 1971, showing the layout of the sanctuary before the reordering of that year (Plate II). An altar plinth and wooden step are shown in exactly the position given by the dowsers for features *a* and *b*. This plinth and step had been placed on the paved floor in the restoration of 1885 and had remained there for 87 years until they were taken out in 1972. This identity between the dimensions given on the plans and those supplied by the dowsers cannot reasonably be attributed to chance. The implication seems to be that the dowsers were responding to some "imprint" left by the wood platforms on the paved surface or the ground beneath.

If this is true then a solution to the negative results from trench B at Woodhorn may be available. In the Gibson slide collection in the Northumberland Record Office are two slides, taken in 1876, which show the chancel and its furniture as they existed in the pre-redundancy phase.[25] To their evidence can be added the plan produced by F. R. Wilson in 1870.[26] Using these sources it is possible to argue that most of the dowsed "foundations" W of the apse can be explained as "imprint" phenomena caused by the choir stalls, their supporting joists and changes in the type of flooring. If so, then this imprint was carried some 85 cm below floor level.

Clearly this apparent phenomenon demands further investigation because it raises

the possibility that a feature which has been removed (along with its archaeological context) may be recoverable, in imprint form, from levels below. This may well explain the unexpectedly continuous nature of the linear features which appear on dowsed plans for it is difficult to envisage that there would not be *some* interruption of foundations or their trenches by such intrusions as graves, tombs, heating systems or drains. The physically recognizable evidence may, in fact, have been removed but the dowser could be responding to the imprint left on the levels below. The implications of this line of reasoning are disturbing; for the moment we merely record the evidence.

6. *The Anglo-Saxon Cathedral at Durham* (E.C.)

The pre-Conquest cathedral at Durham is a well-documented building compared with most of its contemporaries. It is therefore a particularly suitable candidate for investigation by dowsing, since the results can be tested against what can be deduced about its plan and location from the documentary sources. The late twelfth century description of this cathedral by the monk Reginald of Durham is already well-known.[27] In contrast, the evidence for the building's location, though more complex and less familiar, is no less rewarding, as it enables the site of the most important late Saxon church in the north to be defined within precise limits. Its implications are still more far-reaching however, implying the need for a radical revision of the building-history of the cathedral-priory in the first formative years of its existence; and shedding new light on the circumstances of the famous translation of St. Cuthbert's relics into the new Norman cathedral in 1104.

The anonymous late sixteenth century work known as the *Rites of Durham* describes a stone tomb which stood in the cloister garth at Durham until it was destroyed by dean Horne (1551–3 and 1559–61).[28] There was a statue of St. Cuthbert on top of the tomb, which was surmounted by wooden screenwork, protecting the image and supporting a lead-covered roof.[29] The structure described in the *Rites* was the result of a comparatively recent renovation by prior Thomas Castell (1494–1519), as the early sixteenth century Durham monk William Todd recorded in his miscellany.[30] It was of considerably greater antiquity however, since it is surely to be identified with the "...tumbam, quae infra claustrum est..." mentioned by Reginald.[31] What then was the purpose of this *prima facie* rather anomalous structure?

The earliest version of the *Rites* is vague on this point;[32] but according to a later version, the tomb was built by bishop William of St. Calais (1081–96) as a temporary resting-place for St. Cuthbert's body after the Saxon cathedral had been demolished and before it was translated into the Norman church.[33] The latter explanation of the tomb has been generally accepted in recent times.[34] Yet it is inherently unlikely, and in any case is contradicted by another tradition, also represented in the *Rites*, according to which Cuthbert's relics were translated into the present cathedral in 1104 not from a tomb in the cloister, but "... out of thother church called ye White church ...".[35] Further, the first version of the translation is unknown in the Durham historiographical tradition before its appearance in the *Rites*; whereas the latter version is mediaeval in origin, and can probably be traced back at least as far as the early fifteenth century.

Apart from its occurrence in the *Rites*, the "white church" account also appears in the tract *Scripturae imaginum ad ostium chori*, a list of the inscriptions which stood beneath the images of kings and bishops which adorned the fifteenth century pulpitum (the screen which divided the choir from the crossing in the mediaeval cathedral). The earliest extant version of this tract is in William Todd's miscellany;[36] but there is strong presumptive evidence that the original text was composed by Durham's last monastic historian of note, prior John Wessington (1416–46).[37] Besides establishing the greater antiquity of the "white church" tradition, this text also defines the relationship between that church and the tomb in the cloister. In the inscription under the image of bishop Walcher (1071–80), the white church is described as being "... in the place where the tomb of St. Cuthbert in the cloister now is...".[38] Bishop Flambard's (1099–1128) inscription is even more specific:

> "Corpus sancti Cuthberti de loco in alba ecclesia ubi nunc est tumba in claustro ... in hanc ecclesiam ubi nunc est transtulit".[39]

Here the implication seems to be that the tomb actually marked the spot where the body had been enshrined in the white church.

Conclusive proof that the relics were inside *a* church immediately before their translation in 1104 is provided by the detailed account of that event contained in the tract *Capitula de miraculis et translationibus sancti Cuthberti.*[40] This is incorrectly attributed to Symeon, but was probably composed shortly after 1128, so its testimony is valuable nonetheless.[41] Here, Cuthbert's body is described as having been thrice examined to verify its incorruption before the translation. It was placed on cloths and carpets laid on the pavement "... in medium chori ...";[42] the coffin afterwards being replaced "... post altare, ubi prius requieverat".[43] Some of the monks were absent from the final examination because they were assisting the bishop, "... who was then dedicating an altar in the church".[44] This can only have taken place in the new cathedral, which makes it absolutely clear that the examinations of the relics took place elsewhere. Finally, on the day of the translation itself, eager crowds rushed to meet the body "... as it was being carried through the doorway ...".[45] All these circumstantial details must refer to the white church mentioned in the *Rites* and the *Scripturae imaginum* text.[46]

The meaning of the term "white church" (*alba ecclesia*) is ambiguous however.[47] Symeon, in whose work the term first appears, uses it to denote the church in which Cuthbert's relics rested from 995 to 998, while the cathedral (which he calls *"major ecclesia"*) was under construction;[48] whereas in Reginald it must refer to the cathedral itself.[49] Confusion over its use had thus arisen at Durham by the time the latter was writing in the late twelfth century, long before the first recorded appearance of the tradition relating the cloister tomb to the white church; so it is impossible to decide what is meant by the term in that tradition on the documentary evidence alone. But other considerations place the identity of the church marked by the tomb beyond doubt.

The decisive evidence is provided by references to two other tombs of St. Cuthbert in

the north, which enable the one at Durham to be seen in its proper perspective. First, when Ralph Blakeston, the outgoing master of Durham's dependency on Farne Island, drew up a statement of the moveables belonging to that cell in 1520, his list included six pounds of wax, which were to be found "... on top of the tomb of St. Cuthbert in Holy Island".[50] The context implies that this stood indoors, which strengthens the probability that it is either identical to, or a successor of, the "... tomb of the blessed Cuthbert which is inside the church ..." at Holy Island in the twelfth century, mentioned by Reginald.[51]

Secondly, when John Leland, the Tudor antiquary, visited the church at Chester-le-Street, he noted the following:

> "...and yn the Body of the Church is a Tumbe with the Image of a Bishop yn token that *S Cuthberth* ons was buried or remained in his Feretre there."[52]

This tomb seems to have resembled the Durham one closely in appearance as well as in function.

The location of these three tombs makes their purpose clear: they must have been cenotaphs marking the principal resting-places of Cuthbert's body in the years before 1104—on Holy Island,[53] from his death in 687[54] until 875 at the latest;[55] at Chester-le-Street, from 883 until 995;[56] and finally at Durham, where the tomb surely marked not the saint's first temporary resting-place,[57] but the site of his shrine in the Saxon cathedral,[58] between 998 and 1104.[59]

This hypothesis would accord better with the evidence of the *De miraculis*, where the reference to the monks' removal of the relics to the choir "... where they could avail themselves of a more spacious place ...",[60] suggests a large and complex building, rather than the small chapel implied by Symeon's account of the white church.[61] It also accords well with the comparative evidence: the original burial-places of St. William of York and St. John of Beverley were marked by cenotaphs after their relics had been translated elsewhere in their respective churches.[62] But by far the most striking parallel to the Durham tomb has been revealed by Professor Biddle's excavations at Winchester, where a cenotaph was erected outside the Norman cathedral shortly after the Saxon Old Minster had been demolished, to mark the place where St. Swithun's tomb and shrine had once stood in the old church.[63] Finally, it makes much better sense of the sequence of events preceding the translation: if the Saxon cathedral survived, at least in part, it would surely have been there that the monks continued to hold their services, in the presence of the relics of their patron saint, until in 1104 the new cathedral was ready to receive them both.

How then did the erroneous explanation of the cloister tomb as a temporary shrine arise? Its source can almost certainly be traced to a phrase in Symeon's description of St. Calais' decision to build the new cathedral. In 1092, the year before it was begun, the bishop "... ordered the church (i.e. the Saxon cathedral) to be destroyed".[64] The latin phrase used here is *destrui praecepit*. As Mr. Snape has recently pointed out, this need by no means imply—as has generally been assumed—that the whole of the old church was demolished before the new one was started.[65] The anonymous author

of the final section of the tract *De injusta vexatione Willelmi episcopi primi* clearly did interpret the phrase in this way however, since his text, which paraphrases Symeon's account, substitutes *destruxit* at that point.[66] The section of the work in which this occurs forms a later addition to the main text, and could have been composed at any time between the mid twelfth and the last quarter of the fourteenth centuries.[67] Given that Symeon was understood in this way at Durham by the later middle ages, the problem of accounting for the whereabouts of Cuthbert's relics between 1092 and 1104 is bound to have arisen. By the time the *Rites* was written, when the tomb's true significance had begun to be forgotten, it would have been all too easy to see it as the solution of the chronological discrepancy which Symeon's narrative appeared to imply.

How precisely can the site of the Anglo-Saxon cathedral be determined from this evidence? The *Rites* locates the tomb "... over against ye parloure dour ...";[68] that is, opposite the entrance to the slype which separates the S transept from the chapter house (fig. 4).[69] It is evident from the *De miraculis* that the shrine in the old cathedral lay "... behind the altar ..."—presumably the high altar—just as it did in the new one;[70] so it presumably also lay on the central E–W axis of the church, as defined by the width of the slype doorway, that is, *c* 49–66 ft (14·93–20·12 m) S of the S nave aisle wall of the Norman cathedral. The bulk of the old church must therefore have lain parallel to, but clear of, the latter. Moreover, if both shrine and high altar lay close to the present E cloister walk, the main part of the church must lie beneath the garth to the W.

The construction of a new church alongside rather than on top of its Anglo-Saxon predecessor is a phenomenon which recent research has shown to have been more frequent after the Conquest—at least at the sites of the greater churches—than had once been supposed. Apart from Winchester,[71] documentary analysis in conjunction with the failure to find the Saxon cathedral in excavations beneath the present minster has shown that this was also the case at York.[72] Finally, recent excavations at Wells have apparently located the E end of the Saxon cathedral, implying that it occupied a very similar position, relative to the standing church, to that here postulated for Durham.[73]

The location of the Saxon cathedral implied by the documentary evidence is particularly significant in that it contradicts the generally accepted theory, which was first advanced by St. John Hope. Hope's argument was essentially based on the results of an excavation in the cloister garth in 1903, which located part of a wall, *c.* 27 ft (8·23 m) E of the present inner wall of the W cloister walk, and running parallel to it.[74] Since this wall was abutted by the remains of the late Norman cloister lavatory,[75] Hope interpreted it as the inner W wall of an early cloister, contemporary with the late eleventh century work still extant in the E and S ranges of the claustral buildings, but earlier than 1092–3, when the new church with which the existing cloister is associated must have been set out.[76] Assuming that the early W walk had been of about the same width as the present E and S walks, he inferred that each of the earlier walks had been *c.* 115 ft (35·1 m) long, or about 30 ft (9·14 m) shorter than at present. Its projected N walk would thus have fallen short of the S nave aisle wall of the present

cathedral by this distance. Hope accounted for this gap by supposing that it had been occupied by the nave of the Saxon Cathedral until 1092.[77]

In the light of the interpretation of the documentary evidence advanced above, the latter part of Hope's theory is no longer tenable – the cloister tomb would not even have fallen within the site which he postulated for the Saxon church. Yet his interpretation of the excavated wall as part of an earlier cloister, and his reconstruction of its projected size, remain perfectly cogent. How then is the discrepancy between this claustral layout and the position of the present church to be accounted for? The only possible explanation seems to be that the decision to replace the Saxon cathedral by a new church had been taken when the earlier cloister was laid out, and that it was at first intended to be where Hope supposed that the Saxon church had stood. The size of this claustral layout must have been determined before 1088 × 1091, when the refectory (in the S range) was completed;[78] and it probably immediately postdates the introduction of the monks in 1083.[79]

Further, if one assumes, as did Hope (surely correctly) that the early Norman chapter house was similar in width to the present one, the first plan would have afforded no more than *c.* 30 ft (9·14 m) for the projection of the transept southwards to join the E range—even without allowing for a slype between the two.[80] The present S transept not only projects southwards for 49 ft (14·93 m), but is also separated from the rest of the E range by a slype (fig. 4). It was therefore the latter factor, together with the greatly increased size of the transepts of the church as built, which entailed the northwards extension of the cloister. This strongly suggests that the plan abandoned in 1092 had comprised a church appreciably smaller than the one in fact built.

The historical context for this change of plan is probably to be connected with St. Calais' return from three years' exile in Normandy in 1091.[81] This must have provided a fresh impetus and increased finances for the church project; while the delay in the start of work would have allowed an opportunity to take account of recent architectural developments.

Finally, how far does the dowsed plan of features in and around the cloister garth compare with the documentary and archaeological evidence, of which Mr. Briggs was unaware when he carried out his preliminary survey (fig. 4)? First, the location of the wall of the W cloister walk tallies neatly in most respects with the 1903 excavations.[82] Second, and much more striking, is the fact that the axis of the dowsed features here interpreted as the Saxon cathedral falls within the limits inferred above from the documents, and not on the more northerly line suggested by Hope. On the other hand, it is much more difficult to relate these features to Reginald's description, which implies two axial towers, the eastern of which contained the choir.[83] The two transept-like features presumably define the area occupied by the latter, and since the cloister tomb—and hence the Saxon shrine and high altar—almost certainly stood in this area, it was clearly the liturgical focus of the church, so could plausibly be seen as the site of the choir. But there is nothing which can convincingly be interpreted as a western tower—the feature running under the present W range is surely much too large. Further, there are internal discrepancies: in particular, the nave appears to have had

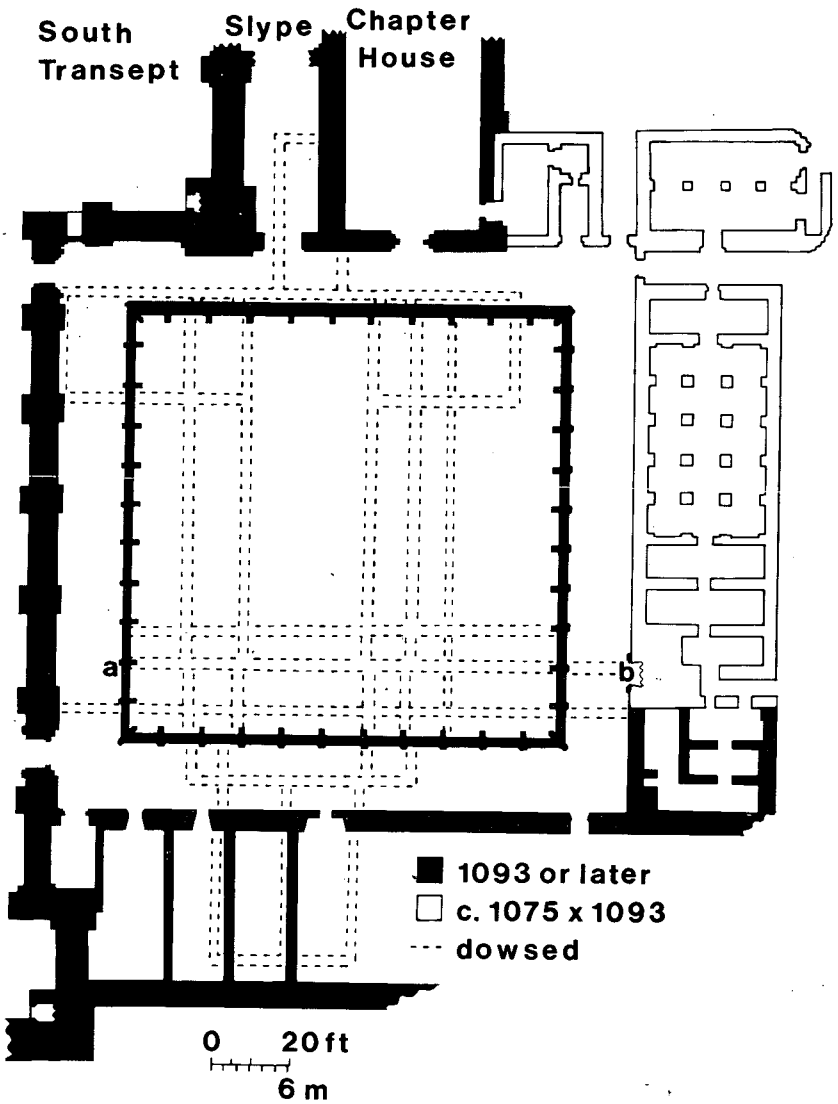


Fig. 4. Simplified plan showing dowsed features marked by broken lines. For the phenomenon of "displacement" where features cross the line of standing walls and feature a-b, see section 2 (3). The cloister lavatory (Hope and Fowler, *loc. cit.* in n. 74) has been omitted, pending detailed planning.

aisles. Yet these continue eastwards across the "transepts", so cannot have been contemporary with them.

Some of the interpretative difficulties raised by the survey may be eliminated by further work currently in progress. Ultimately, however, they can only be solved by excavation. Meanwhile, the convergence of the dowsed evidence with that of the documents has at the very least defined the area in which future archaeological research can be concentrated.

7. *Conclusion.* (R.N.B.)

Further verification tests are in hand but the results are sufficiently encouraging to suggest that dowsing offers a valid means of recovering evidence. Like more conventional remote-sensing devices, of course, it has its weaknesses and, like them, its results need rigorous evaluation. In this connection it should be noted that "open-area" dowsing surveys at Jarrow and The Hirsel, Coldstream, have yielded ambiguous results which will be reported by Professor Cramp in her publication of these excavations. Within our narrower concern with church archaeology, however, the technique does seem to offer the hope of recovering plans rapidly, non-destructively and with minimum expense. If the phenomenon of imprint can be convincingly established then dowsing holds out the additional possibility of obtaining information which would not be available through conventional excavation. But, we would stress, the technique does not provide an effortless solution to the problems of a building's history. Frequently, indeed, it poses further difficulties. What can be recovered through dowsing needs careful and cautious analysis and the evidence needs to be integrated with information drawn from other sources. But, at very least, as a means of obtaining access to material which would otherwise remain untapped, the technique deserves investigation and discussion.

Archaeologists have, rightly, been on their guard against extravagant claims flooding in on them from the wilder shores of the occult. Their training, again very properly, has led them to reject evidence whose source and methodology cannot be explained. Dowsing, for them, consequently represents a suspicious activity. All we suggest at the moment is that they would be equally misguided if, through fear of the scorn of their fellow professionals, they ignored what might (in this particular area of study) be a tool of great value.

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NOTES

The following abbreviations are used:

Addyman and Morris	P. V. Addyman and R. K. Morris (eds.), *The Archaeological Study of Churches* (C.B. A. Research Report 13), 1976.
Hope	W. H. St. John Hope [notes read 25. ii. 1909], *Proc. Soc. Antiq. Lond.*, ser. 2, XXII, 1907–9, 416–23.
N.C.H.	Northumberland County History.
Reginald	J. Raine (ed.), *Reginaldi Monachi Dunelmensis Libellus de Admirandis Beati Cuthberti Virtutibus*, (Surtees Society, I), 1835.
Relics	C. F. Battiscombe (ed.), *The Relics of St. Cuthbert*, Oxford 1956.
Rites	J. T. Fowler (ed.), *Rites of Durham ...*, (Surtees Society, CVII), 1903.
Symeon	T. Arnold (ed.), *Symeonis Monachi Opera Omnia*, 2 vols., (Rolls Series LXXV), 1882–5.
Taylor	H. M. and J. Taylor, *Anglo-Saxon Architecture*, 3 vols., Cambridge 1965–1978.

All books are published in London unless otherwise stated.

[1] See: *Addyman and Morris*; W. Rodwell, *The Archaeology of the English Church*, 1982; R. K. Morris. *The Church in British Archaeology* (C.B.A. Research Report, forthcoming).

[2] H. M. Taylor, Structural criticism: a plea for more systematic study of Anglo-Saxon buildings, *Anglo-Saxon England*, I, 1972, 259–72.

[3] D. Parsons, Past history and present research at All Saints' church, Brixworth, *Northamptonshire Past and Present*, IV, no. 2, 1979, 61–71.

[4] W. J. and K. A. Rodwell, Excavations at Rivenhall Church, Essex, *Antiq. J.*, LXXIII, 1973, 219–31.

[5] W. J. and K. A. Rodwell, Barton on Humber, *Curr. Arch.*, VII, 1981, 208–15. J. G. Hurst, Wharram Percy: St. Martin's Church, (in) *Addyman and Morris*, 36–9.

[6] P. A. Rahtz, *Excavations at St. Mary's Church, Deerhust, 1971–1973* (C.B.A. Research Report 15), 1976. H. M. Taylor, *Repton Studies*, 1 and 2, Cambridge 1977, 1979.

[7] R. N. Bailey and D. O'Sullivan, Excavations over St. Wilfrid's crypt at Hexham, 1978, *A.A.* ser. 5, VII, 145–57.

[8] M. J. Aitken, *Physics and Archaeology*, 2nd ed., 1974, 135–285. A Clark, Archaeological prospecting, *J. Arch. Science*, II, 1975, 297–314.

[9] Copies of three reports by H. D. Briggs are deposited in Newcastle City Library and Northumberland Record Office.

[10] *Taylor*, 121–6, 172–6, 478–9.

[11] *Arch. J.*, CXXXIII, 1977, 188–9. R. J. Cramp, The Anglian tradition in the ninth century, *Anglo-Saxon and Viking Age Sculpture* (ed. J. T. Lang), Oxford 1978, 11–13.

[12] Bede, *Hist. Ecc.*, III, 2. N. Pevsner, *The Buildings of England: Northumberland*, Harmondsworth 1957, 284–5.

[13] *N.C.H.*, IV, 1897, 127–34.

[14] *N.C.H.*, XII, 1926, 421–8.

[15] W. Rodwell, *The Archaeology of the English Church*, 1982, 111, 142. M. Biddle, Excavations at Winchester 1969: eighth interim report, *Antiq. J.*, L, 1971, fig. 12. I am indebted to Richard Morris for information about Beverley. Note that J. R. Magilton, *The Church of St. Helen-on-the-Walls, Aldwark*, 1980, does not advocate Rodwell's interpretation of the York example.

[16] *Op. cit.*, 202.

[17] *N.C.H.*, XIII, 1930, 63.

[18] S. W. Tromp, *Psychical Physics – A Scientific Analysis of Dowsing, Radiesthesia and Divining Phenomena*, New York 1949, 294.

[19] A point made by Dr. A. Aspinall *in lit.* 6. xii. 82.

[20] M. J. Aitken, Test for correlation between dowsing response and magnetic disturbance, *Archaeometry*, II, 1959, 58–9 describes the failure of a dowser to locate the known site of a Romano–British pottery kiln (which would exhibit thermoremanent magnetism) and suggests that therefore dowsing responses are not of magnetic origin. But the same dowser produced other erratic results. Although the writer believes Aitken is correct in that dowsing responses are not of magnetic origin the fact remains that magnetic north can be located by the method.

[21] B. Harbottle, An excavation in the nave of Woodhorn Church, Northumberland, *A.A.*, ser. 5, III, 1975, 117–20.

[22] Harbottle, *op. cit.* in n. 21. E. Coatsworth, *The Carved Stones of Woodhorn Church*, Ashington 1981, 12–14.

[23] Harbottle, *op. cit.*, 120

[24] J. E. Parsons, The archaeology of the clay tabacco-pipe in North-East England, *A.A.*, ser. 4, XLII, 1964, fig. 1. We are grateful to Lloyd Edwards for this identification.

[25] Slide J. 10.

[26] F. R. Wilson, *An Architectural Survey of the Churches in the Archdeaconry of Lindisfarne*, Newcastle 1870, fig. facing 179.

[27] A. W. Clapham, *English Romanesque Architecture*, I, *Before the Conquest*, Oxford, 1930, 88; *Reginald*, 29.

[28] *Rites*, 239.

[29] *Ibid.*, 68–9; 74–5.

[30] In a marginal note added to his transcription of Reginald's *libellus* where the tomb is mentioned (*infra*, n. 31): "Nota de tumba Sancti Cuthberti infra claustrum ex antiquo, et etiam anno Christi 1514 ibidem renovata per priorem Thomam Castell" (B. L. ms. Harley 4843, f. 100r.); printed *Reginald*, xvii (where the ms. is wrongly cited as Harley 4383).

[31] *Reginald*, 100.

[32] *Rites*, 68.

[33] *Ibid.*, 74.

[34] Fowler's note on *a faire toumbe of stone*, *ibid.*, 251; W. Greenwell, *Durham Cathedral*, 6th edn., Durham 1904, 27–8; C. F. Battiscombe, "Historical Introduction", in *Relics*, 57.

[35] *Rites*, 67.

[36] B. L. ms. Harley 4843, f. 256r.–258r. The text printed in *Rites*, 137–43 is taken from the version, copied in 1660, in D. U. L. ms. Cosin B. II. 2, Pp. 15–25.

[37] Several other items in Todd's miscellany copy or epitomize works certainly by Wessington (W. A. Pantin, Some medieval English treatises on the origins of monasticism, (in) V. Ruffer and A. Taylor (eds.), *Medieval Studies Presented to Rose Graham*, Oxford 1950, 201–2; it closely resembles the text *Scripturae sub imaginibus monachorum* ... partly printed in *Rites*, 124–36, which is certainly by him (R. B. Dobson, *Durham Priory 1400–1450*, Cambridge 1973, 381–2); and its text seems to derive from Wessington's own history of the church of Durham (for which see Dobson, *op. cit.*, 379–81) at several points. I am most grateful to Professor Dobson for the last point, as well as for much helpful discussion of the problems of this text.

[38] Harley 4843, f. 257r.; *Rites*, 140.

[39] Harley 4843, f. 257v.; *Rites*, 141.

[40] *Symeon* I, 247–61, translated by R. A. B. Mynors in *Relics*, 99–107.

[41] Date and authorship are discussed in B. Colgrave, The post-Bedan miracles and translations of St. Cuthbert, (in) C. Fox and B. Dickins (eds.), *The Early Cultures of North-west Europe: H. M. Chadwick Memorial Studies*, Cambridge 1950, 329–32.

[42] *Symeon* I, 251, 254.

[43] *Ibid.*, 255; cf. "... ubi eatenus jacuerat ..." (*ibid.*, 251).

[44] "... jam tunc in ecclesia altare dedicanti" (*ibid.*, 258).

[45] "... efferretur ostio ..." (*ibid.*, 260).

[46] Mynor's translation of a phrase in the *Capitula*, referring to the placing of Cuthbert's body in the shrine in the new cathedral, as: "... the body ... having been decently *restored to its place* ..." (*Relics*, 106, my italics) is both inaccurate and misleading, since it suggests that it had been in the new church *before* the translation ceremony. But the latin here reads: "Collocato ... ubi decenter paratum fuerat corpore ..." (*Symeon* I, 260), which simply means: "... The body ... having been put in the place which had been appropriately prepared [for it] ..."

[47] Discussed in *Rites*, 249–50 *passim*; *Relics*, 38 and n. 2.

[48] *Symeon* I, 81.

[49] *Reginald*, 29.

[50] "... super tumbam sancti Cuthberti in Insula Sacra ..." (D.C.D. Farne Island Accounts, 1519–1520(A), dorse: *Status* 1520, *capella*).

[51] "... Beati Cuthberti tumbam quae infra ecclesiam est ..." (*Reginald*, 46, cf. *ibid.*, 49).

[52] T. Hearne (ed.), *The Itinerary* ..., 3rd edn., Oxford 1768, I, 77.

[53] Cf. Raine's note in *Reginald*, 46, n. 1.

[54] Bede's account makes it clear that the body was elevated in 698 directly above where it had originally been buried (*Historia ecclesiastica* ..., IV, 28; C. Plummer (ed.), *Venerabilis Baedae Opera Historica*, 2 vols., Oxford 1896, I, 276–7).

[55] *Symeon* I, 57. The relics may have been moved to Norham as early as 830 × 845 however: see P. H. Sawyer, Some sources for the history of Viking Northumbria, (in) R. A. Hall (ed.), *Viking Age York and the North* (C.B.A. Research Report 27, 1978), 5. I am most grateful to Professor Bailey for drawing my attention to this last reference.

[56] *Symeon* I, 78–9.

[57] Were this so, it seems impossible that the site of his permanent shrine would not also have been so marked; yet there is evidence of only *one* tomb.

[58] Fowler seems to have accepted this, yet continued to hold that St. Calais had demolished the Saxon church and erected the tomb as a temporary shrine (*loc. cit.* in n. 34).

[59] *Symeon* I, 82.

[60] "... ubi largioris loci spatio ... valerent" (*Symeon* I, 251).

[61] *Symeon* I, 81.

[62] For York, see C. Wilson, *The Shrines of St. William of York*, York 1977, 12: for Beverley, J. Raine (ed.), *The Historians of the Church of York and its Archbishops* (*Rolls ser.* 71) I, 347.

[63] M. Biddle, Excavations at Winchester 1967: sixth interim report, *Antiq. J.*, XLVIII, 1968, 278–9, pls. LXIII–IV; *idem*, Excavations at Winchester 1969: eighth interim report, *Antiq. J.*, L, 1971, 318–21, fig. 13.

[64] *Symeon* I, 128.

[65] M. G. Snape, Documentary evidence for the building of Durham cathedral and its monastic buildings, (in) N. Coldstream and P. Draper (eds.), *Medieval Art and Architecture at Durham Cathedral* (B.A.A. conference transactions for 1977), 21.

[66] *Symeon* I, 195; Snape, (*op. cit.* in n. 65). 33, n. 1.

[67] H. S. Offler, The tractate de iniusta vexacione Willelmi episcopi primi, *E.H.R.*, LXVI, 1951, 322–323.

[68] *Rites*, 68, 75.

[69] *Ibid.*, 52.

[70] The same phrase "post altare", is used both of the shrine in the Saxon cathedral (*Symeon* I, 251, 255) and of its successor in the Norman church (*ibid.*, II, 360).

[71] Biddle 1971 (*op. cit.* in n. 63), 311, fig. 10.

[72] B. Hope-Taylor, *Under York minster. Archaeological discoveries 1966–1971*, York 1971, 38–40.

[73] W. Rodwell, *Wells cathedral: Excavations and Discoveries*, Wells 1980, 8, figs. 4, 6.

[74] W.H. St. John Hope and J. T. Fowler, Recent discoveries in the cloister of Durham abbey, *Archaeologia*, LVIII, part I, 8, pl. XXXV.

[75] *Ibid.*, 8, 16.

[76] *Hope*, 416–17.

[77] *Hope*, 419–20, followed by C. Peers in *V. C. H. Durham*, III, 1928, 123–4, and more recently by E. Gee, Discoveries in the frater at Durham, *Archaeol. J.*, CXXIII, 1966, 73–4.

[78] *Symeon* I, 128.

[79] *Symeon* I, 122. *Pace* Gee (*op. cit.* in n. 77), 69, there is no reason to suppose that any part of the S range is as early as the 1070s.

[80] *Hope*, 420.

[81] *Symeon* I, 128.

[82] Hope and Fowler, *op. cit.* in n. 74, pls. XXXV, XXXVII.

[83] *Supra*, n. 27.