ANGLO-SAXON BUILDING TECHNIQUES: QUOINS OF TWELVE KENTISH CHURCHES REVIEWED

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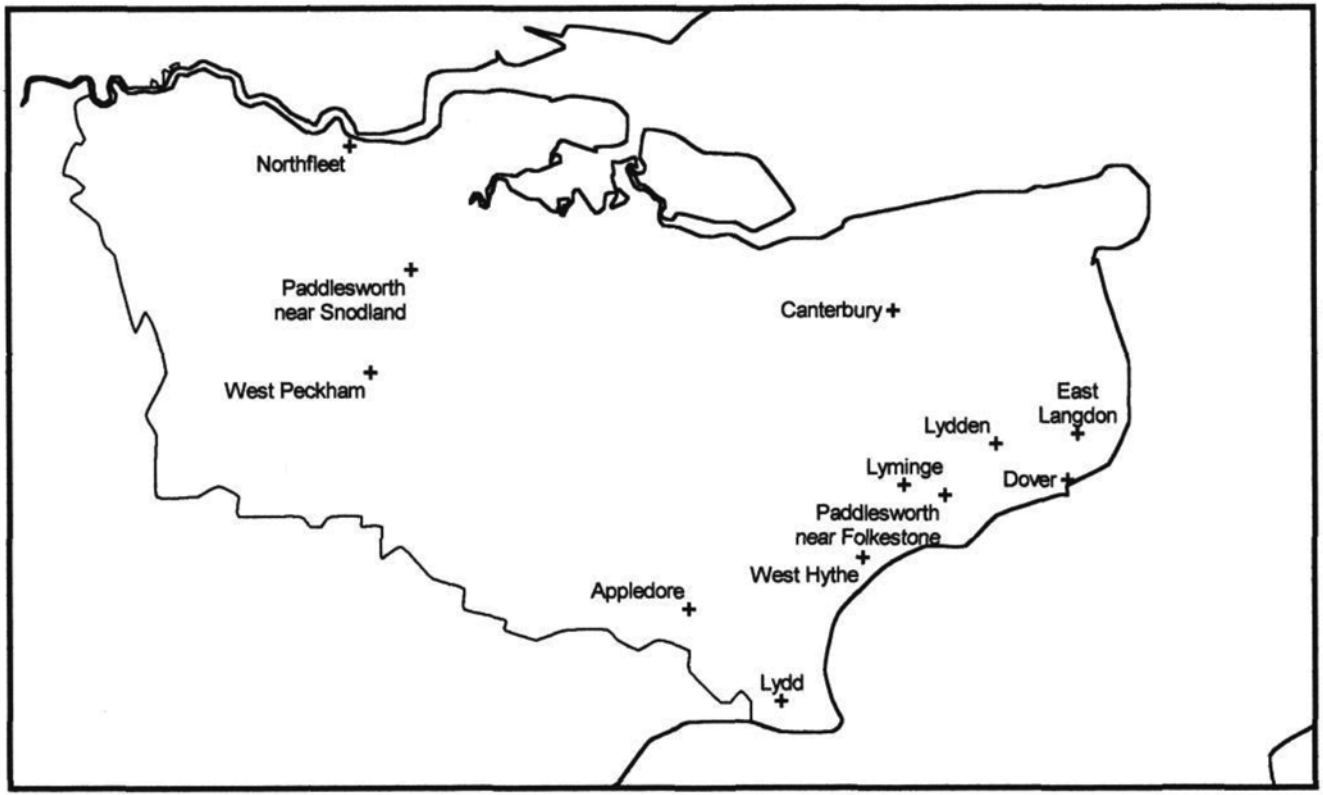
Following a recent analysis of the building fabrics of the vast majority of those churches in the United Kingdom which are customarily recognised as possessing an Anglo-Saxon origin, a number of important observations concerning techniques in stone use have been distinguished (Potter 2005b). In particular, the Anglo-Saxon employment of building stones in quoins, arches and pilasters reveals a high level of technical knowledge, especially regarding the properties of the stones used. Their specialised use of the stones in these structures proves distinctive, and thus now enables church historians to determine with considerable precision those portions of an early church that were constructed by Anglo-Saxon hands.

In this paper twelve early Kent churches, of the many recently examined by the author, have been selected, and these are reviewed to illustrate typical Anglo-Saxon building techniques (**Map 1**). All reveal a similarity in the construction of certain portions of their older quoins. The probable presence of each of these churches during the Anglo-Saxon period is cited in either the Domesday *Monachorum*, the White Book of St Augustine (Page 1932; Ward 1933) or the Rochester *Textus Roffensis* (Ward 1932). A number of the localities are also recorded as possessing a church in the Domesday records (Morgan 1983).

Quoins, rather than pilasters or arches, will be examined in the present paper. In the past it has been the practice to examine quoin stones in terms of their shape (e.g., Gilbert 1946; Jackson and Fletcher 1949; Taylor and Taylor 1980). It is now clear that more evidence of Anglo-Saxon use can be determined from the orientation of the bedding planes in the stones (Potter 2005b). Stones may be built into a quoin in one of three ways (**Fig. 1**). It generally has been, and is, the custom to place the bedding orientation horizontally (*BH* – bedding horizontal). In this orientation the rock used is normally less susceptible to weathering and more capable of withstanding the vertical pressures that are typical in a wall. Anglo-Saxon builders, probably for ornamental purposes,



Map 1 Location of the Twelve churches reviewed (prepared by E. Connell).

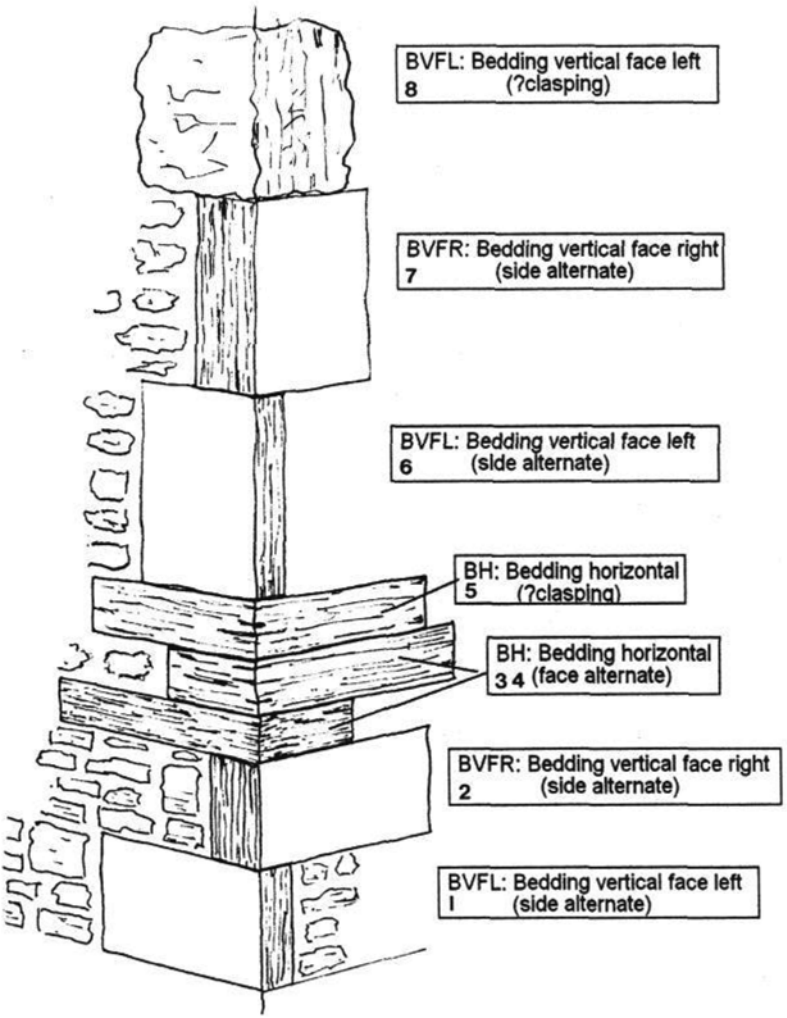


Fig. 1. Quoin nomenclature: eight stones placed in positions as might be seen in a quoin. The stones are numbered 1 to 8 from the lowest (they are numbered in this way in the text). Terms in parentheses are those by which the stones would have been described, in accordance with the stone shape, following Gilbert (1946). It should be noted that set in the appropriate 'long and short' pattern, stones 6 and 7 would be termed 'long' and any of the stones 3, 4 or 5 'short'. The nomenclature used in this paper relies on the orientation of the bedding planes in the individual stones. Stones 3, 4 and 5 are bedded horizontally (*BH*); stones 1, 6 and 8 are bedded vertically with their faces to the left (*BVFL*); and stones 2 and 7 are bedded vertically with their faces to the right (*BVFR*).

selected their stone for use in quoins with care, choosing rock types where the bedding orientation was less critical with regard to strength or resistance to weathering. Many of their quoin stones were inserted with the bedding planes or traces vertical. Thus, viewing an individual stone in a quoin, the stone may be placed *BVFL* (bedding vertical facing left) or *BVFR* (bedding vertical facing right). Frequently, the stones were then arrayed in a pattern, as for instance, repeated, *BH-BVFL-BVFR* or *BVFL-BH-BVFR-BH*.

Bedding plane orientation in stones may frequently be difficult to resolve; this may be because it was only weakly displayed in the original stone, but more often it is due to heavy grime, moss and lichen cover. In many quoins the stones are unfortunately too high to be properly examined from the ground. Oblique strong natural lighting obviously assists in the identification of the bedding traces.

More than a century ago, Livett (1893, 149) pronounced 'no description of a church can be considered complete unless it gives the names of the stones of which the church is built, and the sources, local, or otherwise, from which the stones were drawn'. This very apposite remark is particularly important when quoin stones are scrutinised. Quoins are probably more subject to damage than other portions of a wall and their stones may frequently be replaced, in many instances with rocks of a different lithology. It is, therefore, imperative that rock types are identified, for this may help to differentiate the Anglo-Saxon stones from those of later periods.

In the subsequent descriptions, the quoin stones are numbered 1, 2, 3, 4,... consecutively from ground level to as high as could be positively identified from the ground. Examples selected include church quoins which have long been regarded as of Anglo-Saxon origin, as at Canterbury, Dover and Northfleet, as well as others where no such designation has been given. The former group are chosen to illustrate the presence of stones with a vertical attitude of bedding in recognised Anglo-Saxon quoins.

Canterbury, St Mildred with St Mary de Castro (TR 145 575)

The unusual character of the megalithic quoins on the south wall of the nave of this church has attracted much attention. The church, up until recently dedicated and identified as St Mildred, stands just inside the city's Roman walls and just to the north-west of the Roman Worthgate. As early as 1858, Hussey drew attention to the megalithic character of the quoins, and claimed that they were of an early date. Others (such as, Brown 1903; 1925; Clapham 1930; Fletcher and Jackson 1945; Fisher 1962) have cited the megalithic quoins as typically of Anglo-Saxon

creation. Arguments vary as to a more precise date for their construction. Ward (1941) put forward an historical case for a date in the eighth or ninth century; Potts (1943) suggested 'the early part of the eleventh century', and Brown (1925), Brooks (1984, 35), Worssam and Tatton-Brown (1990) and Tatton-Brown (1994, 191) a 'late Saxon' origin. That some of the quoin stones represent re-used Roman material was proposed by Hussey (1858) and subsequently supported by Brown (1925) and Worssam and Tatton-Brown (1993). Taylor and Taylor (1980) provided the following dimensions for the south wall of the nave; wall thickness, 0.86m, wall height 5.49m, set in a nave wall length of 10.06m, and stated, 'Nothing now remains visible to enable any other part of the church to be claimed as pre-Conquest'.

Of the two nave quoins, the south-west is the slightly better preserved (**Plate I**). It may be annotated as follows:

Top		several small *BH* replacement stones to roof level
7	*BVFL*	highly glauconitic, dark green, upper Hythe Beds, containing fossil *Ostrea* (oyster) shells which help to delineate the bedding planes
6	*BH*	tabular block of Thanet Beds, with small levelling stones suggesting insertion as a replacement
5	*BH*	Marquise oolite
4	*BVFR*	ditto
3	*BH*	Marquise oolite, stone placed upside-down (i.e. with bedding inverted)
2	*BVFL*	Marquise oolite
1	*BVFR*	Marquise oolite

Both the Marquise oolite (Oolithe de Marquise), a stone from the Middle Jurassic of the Boulonnais area of France, and the Lower Cretaceous highly glauconitic sandstone from the upper Hythe Formation from the Hythe-Sandgate area, are believed to be re-used Roman stones (Worssam and Tatton-Brown 1990). The dark green, Hythe material was used in the South-East of England particularly for gateways to Roman forts. The blocks in the St Mildred quoin in some instances exceed a length of a metre in their greatest dimension.

The south-east quoin is similar in structure and composition, with the intervening nave wall being constructed principally of flints (both quarried and field collected, broken cobbles). The lower portions especially of the nave wall also include quantities of silty-sandstone from the Palaeocene Thanet Beds, most probably collected from the Reculver foreshore. Roman tiles, Palaeogene sandy ironstone boulders, and calcareous sandstones from the Hythe Beds are distributed in small amounts in the wall. That some of the Hythe Bed material was originally gathered from beaches in the Hythe area can be suggested from marine

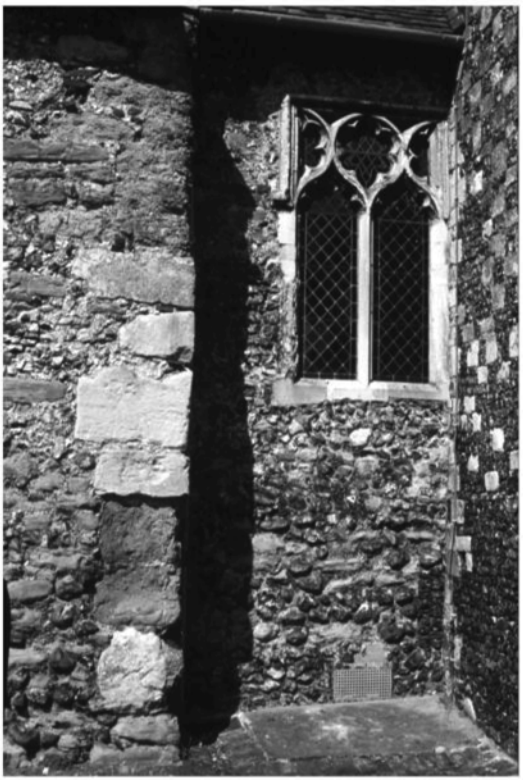
PLATE I

The south-west nave quoin of St Mildred with St Mary de Castro, Canterbury. As early as 1858, Hussey drew attention to the megalithic character of the stones in this quoin. The lowest five pale stones are of Marquise oolite originally extracted from France, stone six is probably a replacement from the Thanet Beds of Reculver, and the large dark stone, seven, is from the uppermost Hythe Beds. Stones 1, 2, 4 and 7, have their bedding orientated vertically, and all seven stones are of re-used Roman material.

bivalve borings in certain rounded blocks. The detail of the south-east quoin (**Plate II**) is as follows:

Top	a number of horizontally bedded small blocks of sandstone from the Thanet Beds to roof level
6	Marquise oolite, orientation uncertain

PLATE II



The south-east nave quoin of St Mildred with St Mary de Castro, Canterbury, has received far less attention than the south-west quoin but again at least two stones are placed vertically in Anglo-Saxon fashion. The dark (green) large block of uppermost Hythe Beds is orientated in this way and the stone below, and the four stones above, this block are of Marquise oolite.

5	*BVFR*	Marquise oolite
4	*BH*	Marquise oolite, stone probably placed upside-down (i.e. with bedding inverted)
3	*BH*	Marquise oolite
2	*BV*	direction in which bedding planes face uncertain, block split in two, of highly glauconitic, dark green, upper Hythe Beds
1		Marquise oolite, orientation uncertain
Base	small replacement blocks of sandstone from the Thanet Beds	

The lack of pattern and the difficulties of interpretation of the orientation of the stones of this quoin are typical features of many of the Anglo-Saxon quoins nationwide. These characteristics are especially noticeable when, as in this instance, the materials are of re-used Roman origin. When previously used by the Romans the stones would almost certainly have been placed with the bedding traces horizontal.

Probably, an earlier rather than later Anglo-Saxon period of building should be considered for the age of the two quoins; for the sandstone blocks from the Thanet Beds are also likely to be Roman re-used materials, quite possibly incorporated to provide early post-Conquest repairs.

Dover, St Mary-in-the-Castle (TR 326 417)

The church of St Mary in the Dover Castle grounds is, like St Mildred in Canterbury, extremely proximate to Roman ruins. The Roman *Pharos* stands beside the west end of the church nave (**Plate III**) and probably served as a western annexe to the church in the past (Taylor and Taylor 1980). The church was extensively restored in 1860-2 from being in

PLATE III

St Mary de Castro, Dover, and the *Pharos*, the lower Roman part of which once served as a western porch to the church. Both the south-west quoin (**Plate IV**) and the jambs of the south nave door are constructed at least in part of re-used Roman stones laid in Anglo-Saxon style.

a ruinous state. Although the church still retains a limited number of Anglo-Saxon features and others are known from the accounts of the discoveries during the restorations (Scott 1862-3; Puckle 1864; Irvine 1885), the forms of the two quoins at the western end of the nave have not previously attracted great attention. These two quoins possess certain similarities to those described above at St Mildred but additionally include courses of Roman tiles at levels in their structure. The *south-west* quoin displays (**Plate IV**):

PLATE IV

The south-west nave quoin of St Mary de Castro, Dover, built of re-used Roman stones and tiles. The quoin stones visible were originally quarried from the uppermost Hythe Beds from the Hythe/Sandgate area (plinth and stone above), the Marquise oolite from the Boulonnais (white stones), and as ragstones from the Hythe Beds of the Hythe area (the three stones above the tiles).

Upper		various replacement stones, including Roman, Victorian and possibly medieval, bricks and tiles
7	*BVFL*	Marquise oolite, with Roman 'lewis hole' on face (west face), and a small block inserted as a repair *BH*
6		calcareous sandstone from the Hythe Beds, probably an early replacement stone, orientation uncertain
5	*BH*	rock similar to 6 but containing thin chert bands
4	*BVFR*	rock type as 5
3	*BVFR*	Marquise oolite, but actual corner built up with five courses of Roman tiles and at the base a thin ironstone from the Folkestone Sands (these being repairs)
2	*BH*	highly glauconitic dark green sandstone from the upper Hythe Beds
1	*BVFR*	megalithic plinth stone of rock type as 2; *Ostrea* on south face indicates bedding

Stones 1, 2, 3 and 7, as well as tiles, are all likely to be Roman re-used material. Stones 4-6 probably represent a late Anglo-Saxon repair.

The orientation of a number of the stones in the lower part of the *north-west* quoin could not be determined, but a description is given below (**Plate V**):

Upper		Caen Stone (of Norman or later use) makes up much of the higher part
9		orientation uncertain, Marquise oolite
8		eight courses of Roman tiles
7		probably Marquise oolite, orientation uncertain
6		calcareous sandstone from the Hythe Beds, orientation uncertain
5	*BH*	stone as 6
4	*BVFL*	Marquise oolite, lower part of stone infilled with stone as 6
3	*BVFR*	Marquise oolite
2	*BH*	highly glauconitic, dark green sandstone from the upper Hythe Beds
1		plinth, orientation uncertain, rock type as 2, resting on quarried flints

Stones 1-3 are of large dimensions and stones 5 and 6 may well again represent late Anglo-Saxon repairs.

Instances occur (such as, Editor's footnote in Ward 1941, north-east chancel; Fletcher and Jackson 1945, north transept; Taylor and Taylor 1980) where the presence of megalithic stones at the base of other quoins in the Dover church have been noted. These are more evident on the south-facing quoins of the church. The rock type, of what are frequently single stones at the base of each quoin, is normally of the distinctive,

PLATE V

The north-west quoin of the nave of St Mary de Castro, Dover, which is built in similar Anglo-Saxon style and materials to the SW quoin of the church (Plate IV).

highly glauconitic, slightly calcareous sandstone from the upper Hythe Beds, a re-used stone that previously was used extensively in Roman gate-houses. The occurrence and position of these stones assist in defining the dimensions of a remarkably large, late Anglo-Saxon cruciform church.

On the south wall of the nave, the blocked doorway was noted by Scott (1862-3) and Puckle (1864, 31) as possessing 'long and short' jambs. The doorway is again built of re-used Roman stones and these have been shown elsewhere (Potter 2005b) to be set in a typical Anglo-Saxon fashion.

Northfleet, St Botolph (TQ 623 742)

The single quoin that displays Anglo-Saxon features in St Botolph Church, Northfleet, has attracted little attention, although structurally it is better preserved than either of the preceding church examples. It can be observed at the south-west corner of the nave, in the angle between the seventeenth-century tower and the aisle. First noted by Jackson and Fletcher (1949) as a possible example of 'long and short' quoining, these authors reserved judgement as to the workmanship being Anglo-Saxon (1949, 11). Further detail with regard to the quoin was provided by Taylor and Taylor (1980). They had no hesitation in pronouncing the quoin as of pre-Conquest age and described the 'long' stones as being of the order of 0.6m in length. The travertine stones of the quoin were figured in a description of the use of travertine as a building stone in the churches of the London Basin (Potter 2000). Other materials included in the rubble walls of the church are flints (mainly quarried), Hythe Bed ragstone and fragmentary pieces of Roman tile.

As far as can be determined each of the 'long' stones in the quoin has its bedding orientated vertically. Of these stones, only one (the second complete 'long' stone from the ground) is placed *BVFL*, three others are set *BVFR*, whilst it proved impossible to fully resolve the orientation of the remainder. All the 'short' quoin stones are bedded horizontally (*BH*). The lowest 2m of the quoin have been much disrupted and repaired. It seems very likely that the travertine blocks are, again, of re-used Roman origin (Potter 2000).

Lydd, All Saints (TR 043 209)

The first detailed description of Lydd church (Robertson 1880) failed to note the Anglo-Saxon walls which are present in the north-west angle of the present north aisle. Following the identification of the Anglo-Saxon work by Micklethwaite (1898) the area of the small pre-Conquest church has received considerable attention (Brown 1903; 1925; Erwood 1921; 1925; Clapham 1930; Livett 1930; Jackson and Fletcher 1959; 1968; Fisher 1962; Taylor and Taylor 1980; Fernie 1983; Tatton-Brown 1989; Pearson and Potter 2002; Potter 2005a). Each contribution has assisted in providing the current interpretation of the two walls which are built into the north aisle of the main body of the present church. Taylor and Taylor (1980) measured the lengths of these walls as 9.14m (north wall) and 4.27m (west wall), with the wall about 0.76m thick. The materials which make up the walls are briefly described in Pearson and Potter (2002) and Potter (2005a). The single original quoin between the north and west walls has yet to be described and its details are provided below:

Upper		clerestory wall stones too high to determine rock type or orientation
15/16	*BH*	two lowest clerestory stones
14		string course stone at base of clerestory wall of Ashdown Beds sandstone, orientation uncertain
13	*BH*	
12	*BH*	Ashdown Beds sandstone
11		orientation uncertain
10		bedding vertical, probably *BVFR*
9	*BVFR*	large oyster shell clearly reveals bedding laminations
8	*BVFL*	
7		bedding orientation uncertain
6		bedding orientation uncertain
5	*BVFR*	large oyster shell reveals bedding laminations
4		orientation uncertain
3	*BVFL*	
2	*BVFL*	
1		orientation uncertain

All the quoin stones listed above (apart from 12 and 14) are of calcareous sandstone from the Hythe Beds.

A variety of dates have been offered for the Anglo-Saxon structures at Lydd. Jackson and Fletcher (1959), drawing comparisons with the Porta Maggiore Basilica in Rome, proposed a date as early as 'the first half of the fifth century'. In 1968, they modified this date to the seventh century. Erwood (1921) proposed a date of building of between 775 and 825; later (1925, 187) this was adjusted to either before 893 or early tenth century. Livett (1930) and Taylor and Taylor (1980) believed that the building was not earlier than the middle of the tenth century and Tatton-Brown (1989) bridged the gap with a suggestion of eighth-tenth century.

East Langdon, St Augustine (TR 333 460)

Brock (1895) briefly examined East Langdon Church and on the evidence of 'a small loop window with a semicircular head, deeply splayed externally' on the south wall, indicated that the church was 'of early Saxon work'. A similar window was subsequently found on the north wall of the nave. Taylor and Taylor (1980) appear to be the only other persons to have critically assessed the structure of this church. Arguing that widely splayed apertures 'are more in favour of Norman than Anglo-Saxon workmanship' they were inclined to assign the work to the Normans and 'to regard the extent of the Anglo-Saxon influence as quite small'. Newman (1991) supported a Norman date.

The rubble nave walls are mainly constructed of quarried and often broken flints, although the blocked south doorway in the south aisle is of Caen Stone, as is the south-east chancel quoin. The north-west

PLATE VI

Set in walls of quarried and broken flints, the north-west nave quoin of St Augustine, East Langdon, is constructed of poorly dressed calcareous sandstone from the Hythe Beds set in side-alternate style. The majority of the stones in the quoin are set with the orientation of their bedding vertical (alternately *BVFL-BVFR*) in Anglo-Saxon style. Three modern, unfortunately selected, replacement stones of mid-Jurassic oolite (white) are evident.

nave quoin (**Plate VI**) is largely built of small blocks of poorly dressed calcareous sandstone from the Hythe Beds and these, although set mainly in a side-alternate style, exhibit evidence of Anglo-Saxon workmanship as detailed below:

Upper	probably of calcareous sandstones from the Hythe Beds, too high to properly ascertain rock type or orientation

9	*BVFR*	
8	*BVFL*	
7	*BVFR*	
6	*BVFL*	
5		unable to determine orientation
4		stone recently replaced with mid-Jurassic shelly oolite
3	*BVFR*	
1/2		stones recently replaced, of mid-Jurassic shelly oolite

All numbered stones apart from the replacements were of calcareous sandstone from the Hythe Beds. It seems probable that this quoin had all of its Hythe Bed stones originally set alternately *BVFR-BVFL*, and that it possibly replaced an earlier flint quoin. Modifications to the church, such as the addition of a Norman south aisle, have regrettably obliterated any visibly clear sign of other early quoins.

West Peckham, St Dunstan (TQ 644 526)

The village of West Peckham is situated on the Hythe Bed scarp-foot spring line and the church is likely, therefore, to be associated with an early settlement. Taylor and Taylor (1980) described the west tower as containing double-splayed windows in its north and south walls, and the tower and the western part of the nave walls as being of Anglo-Saxon age. Subsequently, Newman (1997) supported the tower's early origin. The window low in the north wall of the tower is so much altered that it is difficult to be assured of its Anglo-Saxon pedigree.

Early in the fourteenth century the nave and chancel were supplemented over their full length on the north side of the church with an aisle. At the same time, or more probably earlier, the chancel had been widened to the width of the nave. All early quoins have, therefore, been rebuilt or destroyed with the exception of that on the south-west corner of the nave and those in the two western (and at height two eastern) corners of the tower. Of these, only the south-west nave quoin is built of travertine (**Plate VII**), and it appears to pre-date the quoins in the tower. The detail of those of its stones in which the bedding orientation could be ascertained is as follows:

Upper		higher stones of travertine, orientation uncertain
9	*BVFL*	
8	*BVFL*	
7		orientation uncertain, stone broken horizontally
6		orientation uncertain
5		orientation uncertain
4	*BVFR*	
3	*BH*	
1-2		orientation of bedding obliquely towards the south-west

PLATE VII

St Dunstan, West Peckham, illustrating the double-splayed window in the south wall of the tower and the south-west nave quoin. The walls are built of ragstone blocks from the Hythe Beds, but the quoin stones are of travertine and these are set in Anglo-Saxon fashion with the orientation of their bedding frequently placed vertically.

All stones are of travertine. Because of its mode of formation and deposition, generally as a terrestrially formed, calcium carbonate precipitate, travertine depositional layering is frequently other than horizontal. Occasionally travertine blocks, therefore, have been hewn (perhaps originally by the Romans: Potter 2000) to cut obliquely across this observed natural layering (as in stones 1 and 2).

The rocks in the tower are restricted to being, almost only, slightly flaggy, glauconitic, calcareous sandstones from the local Hythe Beds.

Many of the stones possess a broadly 'elliptical' shape suggesting that they were originally collected as cobbles or boulders (presumably from the neighbouring Medway valley). Slightly smaller pieces of the stone have been used to build the voussoirs and jambs of the double-splayed windows, and slightly larger blocks the western quoins. The orientation of the bedding of many of the stones used in the western quoins of the tower could not be ascertained; most appear to be bedded horizontally but certainly one stone in the north-west quoin was *BVFL*. These quoins, and presumably the tower, could possibly date from the Saxo-Norman period of about the mid-eleventh century.

A more detailed scrutiny of the relationship between the tower and the west wall of the nave over the full height of their contact at the south-east corner of the tower, should confirm the sequence of their construction. In a brief attempt to understand this association further, the first floor of the interior of the tower was ascended. Here, the tower internally, as at ground level externally, appears to be the latter structure. Within the first floor chamber, however, a large portion of the west wall of the nave has been cut into and, in depth, partly removed. The removal of an area of stone from this portion of the west nave wall may possibly have provided an inset for a rood, or constructed to house the loft and roof line of an earlier and much lower west porch/tower. The position of three further insets for circular beams or ties may tend to support the former suggestion.

In areas, the south wall of the nave includes Hythe stones used in a similar style as in the tower; elsewhere, as in the south wall of the widened chancel, squared blocks of slightly more recently used ragstones from the Hythe Beds are evident. In the north aisle wall and opposite the south nave door are the traces of an infilled north door. The jambs of this doorway are of travertine set in an Anglo-Saxon style (Potter 2005b), and it seems probable that this doorway once, prior to being reset, served as the north entrance to the nave. Fragmentary pieces of travertine may also be seen in the walls of the nave in areas proximate to the original position of its north-west quoin, and above a south wall re-constructed window.

Paddlesworth, St Oswald (TR 195 397)

In a brief description Taylor and Taylor (1980) described this small church as Saxo-Norman. A view with which Newman (1991), in an even briefer description, concurred. The simple two-cell (nave and chancel) structure of the church incorporates four rock types; generally unbroken quarried and field flints, ironstone from the Folkestone Beds, calcareous, glauconitic sandstone (ragstone) from the Hythe Beds, and limited amounts of Caen Stone from Normandy. Supplementary, interior use of Roman tiles also occurs, particularly for window arches. Of the four stone

types, the Caen Stone, employed as it is for ashlar work such as quoins and doorways, is clearly of Norman application. Two modified double-splayed windows are evident on the north and south walls towards the west end of the nave; that in the south wall still retains at least one of its original Hythe Bed stones, the remainder being of replacement Caen.

Both the north and south nave doorways show typical Norman form and are constructed of Caen Stone: that on the south possesses unlike jambs and may well be re-set. Anglo-Saxon features are, therefore, restricted. A section of wall exhibiting ornamental banding, created by use of a course of ironstone blocks within part of the flint south nave wall is, however, probably of Anglo-Saxon origin. Jenkins (1875a) claimed that quoins of this church illustrated Saxon long and short style. Only one of the six major quoins to the church, that at the south-east corner of the chancel, still retains its early Hythe Bed stones rather than replacement (surely earlier than 1875) Caen. This quoin, built in side-alternate style, exhibits certain stones set with the bedding planes in a vertical position suggesting Anglo-Saxon workmanship:

16		set below the eaves, Folkestone Beds ironstone, orientation uncertain
15	*BH*	Hythe Beds
14		vertical orientation, direction uncertain, Hythe Beds
13	*BVFR*	Hythe Beds
12	*BVFL*	Hythe Beds
11	*BVFR*	Hythe Beds
10		replacement infill, with tile fragments and Folkestone Beds ironstone
9		orientation uncertain, Caen Stone; this being the lower portion of an ancient broken scratch dial
8	*BH*	ironstone from the Folkestone Beds
7	*BVFL*	ironstone from the Folkestone Beds
6	*BH*	ironstone from the Folkestone Beds
5		Caen Stone, orientation uncertain
4		orientation uncertain, ironstone from the Folkestone Beds
3		Caen Stone, replacement
2		Caen Stone, replacement
1		orientation uncertain, ironstone from the Folkestone Beds

The calcareous sandstones from the Hythe Beds and many of the ironstones from the Folkestone Beds are probably in their original setting in the quoin.

Lyminge, St Mary and St Ethelburga (TR 161 408)

The foundations of the early Anglo-Saxon apsidal church on this site

have attracted considerable attention. First referred to by Jenkins (1874; 1876b; 1887; 1889); others such as Micklethwaite (1896), Peers (1901), Brown (1903; 1925), Clapham (1930) and Taylor and Taylor (1980) have each contributed to the detailed information that now exists on these limited remains. The fragmentary foundations visible today expose no quoin stones of significance. It should, however, be recorded that some of the stones used in the early building were boulders initially collected from local beaches.

The parish church, to the immediate north of the foundations also contains evidence of Anglo-Saxon workmanship. The age of this building has been variously described. Brown (1925, 469) wrote 'there can be little doubt that it is Early Norman, though it may possibly incorporate earlier fragments, as for instance in the middle of the N chancel wall'. Gilbert (1964) provided a plan of the building and drew attention to the Anglo-Saxon character of the chancel walls. Taylor and Taylor (1980, 408) described the building as 'medieval', and Newman (1991, 376) as tenth-century. It is now generally agreed that the nave and chancel were built about 965 (Rivoira 1975, 170) when Dunstan, the then Archbishop of Canterbury, initiated the building of a new church. The three monosplay windows with Roman tile rere-arches in the chancel, and a further similar window in the south wall of the nave, are normally those features considered to be of Anglo-Saxon construction.

The walls of the chancel of the parish church have been less disrupted by later modifications than its walls elsewhere. Rock types used to construct the chancel walls are mainly sandstones and ironstones (approximately in equal quantities) from the Folkestone Beds. The ironstones are sometimes in rounded boulder form. Other rocks, in smaller quantity, are flints and calcareous sandstone blocks from the Hythe Beds; also present are a few fragmentary pieces of Roman tile. Although of widely spaced rubble structure, the stones of the chancel walls are generally laid in clear (sometimes 'herringbone') and regular courses. The quoins at the eastern end of the chancel are mainly constructed of side-alternately placed, Palaeogene, Quarr Stone from the Isle of Wight. In the north-east quoin a metre high plinth of sandstone blocks from the Hythe Beds is followed by an ironstone from the Folkestone Beds, and above this, principally Quarr Stone. The fourth stone above the ironstone block is laid *BVFL*, some other Quarr stones are *BH*, but the orientation of most could not be determined. Beneath the flying buttress in the south-east quoin the bedding orientation of several Quarr stones can be determined (**Plate VIII**):

12	*BVFL*
11	*BH*
10	*BVFL*
9	*BH*

8	*BH*	
7	*BH*	
6	*BVFL*	
5	*BVFL*	
Base		lowest 0.7m, four stones making a plinth, three of calcareous sandstone from the Hythe Beds and an ironstone from the Folkestone Beds

Several Quarr Stone blocks are preserved in the south-east quoin of the nave, and stone 9, in which a scratch dial has been cut, is placed *BVFL*. It seems probable that all six major quoins to the original church structure

PLATE VIII

Detail of the south-east quoin of the chancel of St Mary and St Ethelburga, Lyminge, to show the vertical orientation of the bedding in Quarr Stone (lower stone, *BVFL*) set in Anglo-Saxon style.

were of this same Quarr material. Brown (1925) stated that the walls of the nave and chancel were of the order of 1.06m and 0.98m thick respectively.

Appledore, St Peter and St Paul (TQ 958 293)

Prior to recent work by the present author (Pearson and Potter 2002; Potter 2003; 2005a; see also Hinton 2002) only limited claims for any of the fabric of Appledore Church being of earlier date than the thirteenth century had been made. It was generally suggested that a French raid in 1380 had partially or wholly destroyed any earlier building (Newman 1997). Lebon (1988), however, from historical evidence had proposed that the north chapel area might have been built by Joseph of Exeter about 1191.

The presence of unusual blocks of ferruginously-cemented sand in the quoins of the north transept and chapel area of the church (**Plate IX**) permitted the author to consider the possibility that this part of the church might include original Anglo-Saxon workmanship, for in the London Basin he had concluded that this material was used prior to periods of

PLATE IX

St Peter and St Paul, Appledore, viewed from the north-east to show the transeptal chapel with its side-alternate, ferruginously-cemented sand quoins. The use of this material and the Anglo-Saxon orientation of the quoin stones suggest that the east end of a late Saxon church is preserved in this view.

PLATE X

Detail of the north-east quoin of the transept of St Peter and St Paul, Appledore, shown in Plate IX. Stone 8 (with pen beside) is set *BVFR*. Wall stones visible beneath the plaster are of sandstone from the Ashdown Beds.

extensive Norman building (Potter 2001). Despite the side-alternate distribution of these quoin stones, on close examination they revealed a bedding orientation in many stones that was disposed vertically (Potter 2003).The stones in the north-east quoin of the north transept (**Plate X**), below the eaves, can be described as:

17/19		small sandstone blocks from the Ashdown Beds, orientation uncertain
14/16		ferruginously-cemented sand, orientation uncertain
13	*BVFL*	
12	*BH*	

11	*BVFL*	
10	*BVFR*	
9	*BH*	
8	*BVFR*	
7	*BH*	
6		orientation uncertain
5	*BH*	
1/4		orientation uncertain

All stones 1-16 are of ferruginously-cemented sand or sandy-gravel.

The stones of the north-west quoin are also all of blocks of ferruginous sand with the exception of the two stones immediately below the eaves:

12/13		small blocks of sandstone from the Ashdown Beds, orientation unknown
10/11		orientation uncertain
9	*BVFR*	
8	*BVFL*	
7	*BH*	
6	*BVFL*	
5	*BVFR*	
4	*BVFL*	
3	*BVFR*	the largest of the quoin stones, 0.52m high by 0.51m long (right face) by 0.18m
1/2		orientation uncertain

The orientation of the stones of the same material in the two quoins of the chapel or sanctuary on the east side of the north transept proved generally too difficult to decipher. One stone in the more southerly quoin was certainly placed with its bedding in a vertical attitude, whilst in the northerly quoin, stones 9, 11 and 17 (top) were *BVFR*, and stone 10 was *BVFL*.

A description of the north-east corner of the church which preserves both these and other Anglo-Saxon features has been given in Potter (2005a). The same ferruginously-cemented sand/sandy-gravel also occurs in part inside this area of the church, and it is possible that the modern sanctuary represents the original chancel of the earlier Anglo-Saxon church. In the same area of the church, the external walls, which vary in thickness between 0.69m and 0.74m, are constructed mainly of calcareous sandstone from the Lower Cretaceous, Ashdown Beds, a little of it in the form of boulders gathered from beaches near Hastings. The use of such material again suggests building of a period which could possibly be Anglo-Saxon.

West Hythe, St Mary (TR 128 343)

The ruins of West Hythe Church were described in some detail by

Livett (1914) and, presumably on the evidence of the blocked Norman south door, he advocated that the nave and chancel were built by the Normans. He also claimed to observe on the north wall of the nave a line of junction between his Norman nave, externally about 10m long, and a westerly and later extension, of a further 4.5m. Although an element of wall rebuilding is evident in the vicinity of this 'line of junction', there is, today, no evidence in the wall fabric of any extension to the length of the nave. Livett's church plan provides wall thicknesses which from recent measurements tend to be incorrect. The south nave wall is 0.85m, the west wall 0.95m, and the chancel walls 0.74m; not the 0.76m, 0.93m and 0.76m, respectively, offered by Livett.

Recently, the present author has described the ruins as they are visible today (Pearson and Potter 2002; Potter 2005a). These descriptions do not include the details of the stones in those quoins which exhibit vertical bedding orientations, now given below. In the *north-west* quoin of the nave:

Upper		all higher stones appear to be *BH* and apart from the lowest stone appear to be replacements
12		stone probably *BVFR*
11	*BVFL*	
10		stone probably *BVFR*
9	*BVFR*	
8	*BH*	
7	*BVFR*	
6	*BVFR*	
5	*BVFL*	
4	*BVFR*	
3	*BVFL*	
2		unable to ascertain orientation
1	*BH*	

All stones in both this quoin and the south-west nave quoin, described below, are of calcareous, glauconitic sandstone from the local Hythe Beds. The *south-west* quoin (**Plate XI**) details are:

Upper		all higher stones being replacements
14	*BH*	
12/13		unable to ascertain orientation
11	*BVFL*	
10	*BVFR*	
9	*BH*	
8	*BVFL*	
7	*BVFR*	
6	*BVFL*	
5	*BH*	
1-4		unable to ascertain orientations

PLATE XI

The south-west nave quoin of St Mary, West Hythe. These quoin stones, of calcareous, glauconitic sandstone from the local Hythe Beds (set in walls of smaller, similar material) are mainly set in an Anglo-Saxon, vertically orientated fashion.

Both of the western nave quoins, in their lower portions, appear to preserve clear evidence of Anglo-Saxon workmanship, and it seems unlikely that they form part of a western extension to the nave. Other existing quoins in the building show no such indications of Anglo-Saxon origin for they have been completely repaired.

An unsupported statement by Tatton-Brown (1988, 112) suggested that St Mary, West Hythe was a 'possible earlier minster'. The context in which this claim was made suggests this should be interpreted as earlier than the late eleventh century. Although the church nave includes later insertions in its walls such as the Norman south door and the Early

English west entrance, from the evidence of the western quoins the wall fabric must at least in part be Anglo-Saxon. The walls are almost entirely built of ragstone from the Hythe Beds. Most of this stone was probably obtained from the local Roman shore fort *Lemanis*, and many of the stones are carefully cut into cubic shape typical of Roman *petit appareil* wall structure.

Lydden, St Mary the Virgin (TR 264 457)

The earliest clearly recognisable architectural features in Lydden Church are exhibited by structures such as the windows which are of thirteenth-century origin (Newman 1991). Only on closer examination do certain less obvious characteristics suggest earlier workmanship. A small window in the south-east end of the nave appears to reflect Norman work. In 1931, Vallance suggested that the blocked north doorway to the nave was probably of late eleventh-century construction. Support for an earlier, possibly Anglo-Saxon, origin for the west tower is provided by the character of its initially unbuttressed style, the tower's construction in courses of quarried, sometimes broken, flint cobbles, its string course at the top of the first stage of inclined flat flints, and in the lowest stage, the blocked west window arched in irregular thin flint voussoirs. The much repaired, south-west nave quoin of flints, and at the foot of the north nave wall, the pediment of flint cobbles (again well-coursed and with flint quoins), indicate a similar early age for the nave. None of these features provide a wholly convincing argument for designating a specific period of building. However, two of the church quoins clearly display workmanship which the author believes is of Anglo-Saxon origin. These are described below, the first being the *north-west* nave quoin (**Plate XII**):

		eaves of nave wall
9/15		blocks of roughly squared calcareous, glauconitic sandstone from the local Hythe Beds, stones too high to determine bedding orientation
8	*BVFL*	
7	*BVFR*	
6	*BVFL*	some doubts about face direction
5	*BVFR*	with fossil tetrebratulid brachiopods
4	*BVFR*	some doubts as to face direction
3	*BVFR*	
2	*BH*	some doubt as to orientation, this being a beach derived boulder with modern bivalve borings
1		plinth stone, unable to ascertain bedding orientation
Base		up to ten courses of quarried flint cobbles comprising the wall pediment (0.8m high), possibly representing an earlier wall

PLATE XII

The north-west quoin of the nave of St Mary the Virgin, Lydden. Blocks of roughly hewn calcareous sandstone from the Hythe Beds are set in side-alternate and Anglo-Saxon style in walls of quarried and broken flints. Below the plinth stone (at the bend in the white water pipe) are at least ten courses of flints possibly representing the remains of an earlier wall.

All quoin stones 1-15 were of the sandstone from the Hythe Beds and they were set in side-alternate style. There are indications, seen from other quoins in the church, that these may have replaced even earlier flint quoins.

The *north-east* chancel quoin displays similar side-alternate Hythe Bed stones:

Upper	cement render covering upper stones
11	new replacement stone
10	unable to ascertain bedding orientation

9	*BH*	
8		replacement stone
7	*BVFL*	
6	*BH*	
5	*BVFL*	
4	*BVFR*	
1/3		new replacement stones
Base	set on new plinth	

The presence of these two quoins would indicate that much of the church wall fabric is of Anglo-Saxon construction. It may even be possible to suggest that two different periods of building were involved. The earliest represented by a simple nave and chancel built wholly of quarried flints, and a later Anglo-Saxon church, possibly including a tower, in which many of the flint quoins in the nave and chancel had been replaced by calcareous sandstone blocks from the Hythe Beds.

Paddlesworth, St Benedict (TQ 685 621)

In 1893, Livett described this small two-cell church as being 'nearly unaltered Norman'. He provided a full description of the church in 1895, again suggesting that the church illustrated an example of early Norman workmanship. Newman (1997), in a limited three-line description of the church, confirmed this Norman origin. More recently, Thurlby (2004) employed instead the term Romanesque to depict the age of this church. Thurlby used the same argument as Livett to determine the period of construction; namely, that if tufa (more correctly travertine if used as a building stone) occurs in the church fabric, the structure must be of Norman age. Evidence from the London Basin (Potter, 2000) clearly proves this unlikely to be the case. Travertine blocks are certainly incorporated into the structure of the dormitory of Canterbury Cathedral which, as cited by Thurlby, was probably built in the period 1070-77. The blocks, however, from their appearance are obviously re-used from an earlier structure.

A variety of rock types have been used in the construction of this west Kent, Paddlesworth Church. These include large, often broken, quarried and field flints, Upper Chalk, Hythe Bed ragstones, and travertine. Unfortunately, the description by Livett (1895) of the use of these rock types in a sequence of work by the Normans, involving three breaks to provide four different bands of stone, cannot be supported. For instance, Livett's highest band described as 'Caen Stone' occurs in the gable portion of the west and east ends of the nave and consists of moderately well trimmed and fitted blocks of Upper Chalk probably inserted as a replacement stone in relatively recent centuries at a time of re-roofing. Hythe Bed ragstone, however, is certainly more abundant in the upper portions of each wall.

The six major quoins of the church are of particular interest. Originally the quoins were probably constructed with travertine. The bottom and top stones in each quoin have been replaced and in some respects this gives the whole church an appearance of banding. At the bottom, for approximately 2m, the quoins are generally rebuilt with blocks of ragstone from the Hythe Beds, sometimes again replaced with modern bricks. Approaching the eaves Upper Chalk blocks (and other stones) may be introduced, these probably added at a time of re-roofing. In five of the six quoins, blocks of travertine with vertically orientated bedding could be distinguished. Details of two of the quoins are provided below. The quoin at the south-east of the chancel exhibited:

9/12		stones to the eaves, not travertine
8	*BVFR*	slight doubt as to direction stone facing
7	*BVFR*	
6	*BVFR*	
5	*BVFL*	slight doubt as to direction stone facing
4	*BVFR*	
3	*BVFL*	
2	*BVFR*	
1	*BVFL*	
Base		Hythe Bed ragstone blocks for 2m resting on a poor modern plinth

The quoin at the north-east of the chancel (**Plate XIII**) displayed:

Upper		stones other than travertine to eaves
9	*BVFL*	
8	*BVFR*	
7	*BVFL*	
6	*BVFR*	
5	*BVFL*	
4	*BVFR*	
3		orientation uncertain
2	*BH*	
1	*BVFR*	
		Hythe Bed ragstone blocks for 2m

It is possible to conclude from the evidence provided by the quoins that this church was originally constructed by the Anglo-Saxons. At that time it was probably a flint cobble church with travertine quoins. The church is believed to have been abandoned in 1678 and for 250 years it was not used for religious purposes. That it may have become ruinous and roofless is suggested by the replacement stones at the higher levels.

Two fragmentary pieces of column lie outside the north door of the church. Both are of a similar white oolite which with further examination might be confirmed as Marquise oolite from France. These could have

PLATE XIII

The north-east quoin of the chancel of St Benedict, Paddlesworth, west Kent. The quoin stones (with the exception of the lowest darker replacement stones of Hythe Beds) are of travertine set in Anglo-Saxon style. The wall stones are mainly of ragstones from the Hythe Beds and flints, but high in the east wall squared blocks of Upper Chalk are evident, almost certainly used at a time of roof replacement.

been utilised by the Romans, as of course could the travertine, and even the flints in the church; all perhaps being robbed from a local Roman site.

DISCUSSION AND CONCLUSIONS

This paper pursues two main objectives. The first, to demonstrate that Anglo-Saxon builders employed specific building techniques; in this

instance using quality, resistant stone, explicitly orientated to suit their requirements for church quoins. This technique, being restricted to builders of the Anglo-Saxon period, permits as the more obvious objective a greater understanding of Anglo-Saxon workmanship in certain Kent churches. The selection of churches has been illustrative and others exist. Furthermore, to be fully convincing the many hundreds of Kent churches that do not exhibit church quoin stones with explicit bedding orientation which have been erected by builders from other periods, should be listed for comparison.

Not that all Anglo-Saxon churches necessarily display this particular quoin construction. Kent is a flint rich county and many Anglo-Saxon quoins are constructed of flints. Examples may be seen at St Giles, Kingston (TR 197 513), and St Edmund, Kingsdown (TQ 579 634). Flint, due to its mode of formation, is not bedded, and cannot display bedding orientation.

In other instances Anglo-Saxon churches possess quoins in which the bedding orientation in included stones cannot be determined without more detailed analysis. This may be due to the height of the stones, their degree of weathering, a depositional cover of dirt, lichen or moss, or simply the rocks in question failing to clearly display their bedding. Travertine quoin stones may be particularly difficult to orientate, as for example, in the west quoins of the nave at St Nicholas, Leeds (TQ 826 533). In some cases, a church designated as Anglo-Saxon perhaps on the basis of other structures will preserve none of its original quoins. Finally, the present author is aware of a few instances, to be described elsewhere, where churches that have long been designated Anglo-Saxon, are now believed to contain areas of their building fabric which must now be considered not to be of such antiquity.

Those churches selected for inclusion in this paper have one thing in common; they are all erected on (or near to) a site where at the beginning of the Conquest historically a church is believed to have stood. In those churches first considered, such as St Mildred, Canterbury and St Mary, Dover, some of the building fabric has been accepted for well in excess of a century as being of Anglo-Saxon construction. Other churches discussed were not suggested as possessing any pre-Conquest workmanship until attention was drawn to particular features by Taylor and Taylor (1980). The descriptions in the final group, which included West Hythe and Lydden churches, related to church buildings where Anglo-Saxon craftsmanship had previously gone un-noticed. None of the brief church descriptions offered in the paper are intended to be fully comprehensive, partly because this information has often been provided by others elsewhere, but more particularly because the work concentrates on the structure of the quoins.

In conclusion, the churches of Kent, like those in other parts of the

United Kingdom, display distinctive workmanship evident in the careful and selective use of building stone which can be linked with the Anglo-Saxon craftsman. The identification of this discerning use of stone enables the extent of Anglo-Saxon church building to be more readily determined.

REFERENCES

Brock, E.P.L., 1895, 'The Saxon church at Whitfield, near Dover, Kent', *Archaeologia Cantiana*, 21, 301-7.

Brooks, N., 1984, *The early history of the Church of Canterbury: Christ Church from 597 to 1066*, Leicester.

Brown, G.B., 1903, *The Arts in Early England: ecclesiastical architecture in England from the conversion of the Saxons to the Norman Conquest*, London.

Brown, G.B., 1925, *The Arts in early England: Anglo-Saxon Architecture*, London.

Clapham, A.W., 1930, *English Romanesque Architecture before the Conquest*, Oxford.

Erwood, F.C.E., 1921, 'The Pre-Conquest Church at Lydd, Kent', *Arch. J.*, 78, 216-26.

Erwood, F.C.E., 1925, 'Notes on the churches of Romney Marsh in the County of Kent, 1923', *Archaeologia Cantiana*, 37, 177-208.

Fernie, E., 1983, *The Architecture of the Anglo-Saxons*, London.

Fisher, E.A., 1962, *The greater Anglo-Saxon churches: an architectural-historical study*, London.

Fletcher, E.G.M. and Jackson, E.D.C., 1945, "Long and short' quoins and pilaster strips in Saxon churches', *J. Brit. Archaeological Assoc.*, 3rd Ser. 9, 12-29.

Gilbert, E., 1946, 'New views on Warden, Bywell and Heddon-on-the-Wall churches', *Arch. Aeliana*, 4th Ser. 24, 157-76.

Gilbert, E., 1964, 'The church of S. Mary and S. Eadburg, Lyminge', *Archaeologia Cantiana*, 79, 143-8.

Hinton, D.A., 2002, 'Debate: the dating of ferruginously-cemented gravel as building material', *Landscape History*, 24, 121-2.

Hussey, R., 1858, 'St. Mildred's, Canterbury', *Archaeologia Cantiana*, 1, 143-9.

Irvine, J.T., 1885, 'Dover Castle Church', *J. Brit. Archaeological Assoc.*, 41, 284-8.

Jackson, E.D.C. and Fletcher, E.G.M., 1949, 'Further notes on 'long', 'short' quoins in Saxon churches', *J. Brit. Archaeological Assoc.*, 3rd Ser. 12, 1-18.

Jackson, E.D.C. and Fletcher, E.G.M., 1959, 'The pre-Conquest Basilica at Lydd', *J. Brit. Archaeological Assoc.*, 3rd Ser. 22, 41-52.

Jackson, E.D.C. and Fletcher, E.G.M., 1968, 'Excavations at the Lydd Basilica, 1966', *J. Brit. Archaeological Assoc.*, 3rd Ser. 31, 19-26.

Jenkins, R.C., 1874, 'The basilica of Lyminge; Roman, Saxon, and Mediaeval', *Archaeologia Cantiana*, 9, 205-23.

Jenkins, R.C., 1876a, 'The church of St. Oswald at Paddlesworth', *Archaeologia Cantiana*, 10, xliv-liii.

Jenkins, R.C., 1876b, 'Remarks on the early Christian basilicas, in connection with the recent discoveries at Lyminge', *Archaeologia Cantiana*, 10, ci-ciii.
Jenkins, R.C., 1887, 'Historical notes relating to the church or minster of St. Mary and St. Eadburg, in Lyminge, Co. Kent', *J. Brit. Archaeological Assoc.*, 43, 363-9.
Jenkins, R.C., 1889, 'Observations on the remains of the basilica at Lyminge', *Archaeologia Cantiana*, 18, 46-54.
Lebon, C., 1988, 'The north chapel of Appledore Church', *Archaeologia Cantiana*, 106, 83-105.
Livett, G.M., 1893, 'Early-Norman churches in and near the Medway Valley', *Archaeologia Cantiana*, 20, 137-54.
Livett, G.M., 1895, 'Early-Norman churches in and near the Medway Valley', *Archaeologia Cantiana*, 21, 260-72.
Livett, G.M., 1914, 'West Hythe church and the sites of churches formerly existing at Hythe', *Archaeologia Cantiana*, 30, 250-7.
Livett, G.M., 1930, 'Lydd Church', *Archaeologia Cantiana*, 42, 61-92.
Micklethwaite, J.T., 1896, 'Something about Saxon church building', *Arch. J.*, 53, 293-351.
Micklethwaite, J.T., 1898, 'Some further notes on Saxon Churches; being the address at the opening of the Architectural Section of the Lancaster Meeting', *Arch. J.*, 55, 340-9.
Morgan, P. (ed.), 1983, *Domesday Book: text and translation: Kent* (Morris, J., gen. ed.), Chichester.
Newman, J., 1991, *The Buildings of England: North-East and East Kent*, London.
Newman, J., 1997, *The Buildings of England: West Kent and the Weald*, London.
Page, W. (ed.), 1932, *Kent*, iii, The Victoria History of the Counties of England.
Pearson, A. and Potter, J.F., 2002, 'Church building fabrics on Romney Marsh and the marshland fringe: a geological perspective', *Landscape History*, 24, 89-110.
Peers, C.R., 1901, 'On Saxon churches of the St Pancras type', *Arch. J.*, 58, 402-34.
Potter, J.F., 2000, 'The occurrence of travertine in churches of the London Basin', *Proceedings of the Geologists' Association*, 111, 55-70.
Potter, J.F., 2001, 'The London Basin's gravel churches: indications of geology, medieval history and geographical distribution', *Landscape History*, 23, 5-28.
Potter, J.F., 2003, 'Continuing the debate on ferruginously-cemented gravel churches', *Landscape History*, 25, 79-82.
Potter, J.F., 2005a, 'Field Meeting: Romney Marsh; its churches and geology, 22 May 2004', *Proceedings of the Geologists' Association*, 2, 116, 161-75.
Potter, J.F., 2005b, 'No stone unturned – a re-assessment of Anglo-Saxon long and short quoins and associated structures', *Arch. J.*, 162 (in press).
Potts, R.U., 1943, 'St. Mildred's Church, Canterbury: further notes on the site', *Archaeologia Cantiana*, 56, 19-22.
Puckle, J., 1864, *The church and fortress of Dover Castle*, Oxford and London.
Rivoira, G.T., 1975, *Lombardic Architecture: its origin development and derivatives*, 2, New York.

Robertson, S., 1880, 'Churches in Romney Marsh', *Archaeologia Cantiana*, 13, 408-87.

Scott, G.G., 1862-3, 'The church on the Castle Hill, Dover', *Archaeologia Cantiana*, 5, 1-18.

Tatton-Brown, T., 1988, 'The churches of Canterbury Diocese in the 11th Century', in Blair, J. (ed.), *Minsters and Parish Churches: the local church in transition 950-1200*, Oxford Univ. Comm. Arch. Mon. 17.

Tatton-Brown, T., 1989, 'Church building on Romney Marsh in the later Middle Ages', *Archaeologia Cantiana*, 107, 253-65.

Tatton-Brown, T., 1994, 'Kent churches – some new architectural notes (contd.): churches in and around Canterbury', *Archaeologia Cantiana*, 114, 189-235.

Taylor, H.M. and Taylor, J., 1980, *Anglo-Saxon Architecture*, 2 vols, Cambridge.

Thurlby, M., 2004, 'Romanesque churches in the diocese of Rochester', *Archaeologia Cantiana*, 124, 51-73.

Vallance, A., 1931, 'Lydden Church', *Archaeologia Cantiana*, 43, 1-27.

Ward, G., 1932, 'The list of Saxon churches in the *Textus Roffensis*', *Archaeologia Cantiana*, 44, 39-59.

Ward, G., 1933, 'The lists of Saxon churches in the Domesday *Monachorum*, and White Book of St. Augustine', *Archaeologia Cantiana*, 45, 60-89.

Ward, G., 1941, 'The age of St. Mildred's Church, Canterbury', *Archaeologia Cantiana*, 54, 62-8.

Worssam, B.C. and Tatton-Brown, T., 1990. 'The stone of the Reculver columns and the Reculver cross', in Parsons, D. (ed.), *Stone: quarrying and building in England, AD 43-1525*, Chichester.

Worssam, B.C. and Tatton-Brown, T., 1993, 'Kentish Rag and other Kent building stones', *Archaeologia Cantiana*, 112, 93-125.