Viviparus Limestone ('Purbeck Marble') - a key to financially well-endowed churches in the London Basin

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Within the London Basin a large number of ecclesiastical buildings incorporate in their monumental, or internal or external structure, Viviparus limestone (approaching 100% of the fossil Viviparus), generally in the form of 'Purbeck Marble'. Much of the material today appears as re-used blocks in external church walls. The geographical distribution of these churches is illustrated and examined. This distribution, together with the expense of quarrying, polishing and the transportation of the ornamental limestone, suggest that, at least for the period of its first utilisation, the churches containing the material were particularly financially well-endowed, with respect to comparable churches of similar size.

Over the last 25 years the author has undertaken an extensive study of the external fabric of the various churches which are situated in the London Basin. The region is one that has been down-folded into a geological syncline, and all churches which occur within the limiting confines of the Upper Cretaceous, Chalk, as delineated in Fig 1, have been examined. In addition many churches elsewhere in England have been reviewed. These studies have revealed a range of building stones, and in the older churches, most stones are of a very local origin. The rocks used generally prove to be distinctive both in geographical and geological distribution, as well as being illustrative of historical periods of incorporation.

Natural, dimension or ashlar, stones are normally absent from the geological deposits of the London Basin, which typically consist of clays, sands and gravels. Many of the older churches are of rubble wall structure. Flints, quarried directly from the Chalk, or obtained from their occurrence as derived cobbles in younger Tertiary rocks or superficial deposits, are used in abundance. In some areas, church walls may include silcretes (Potter 1998), Palaeogene sandstones (Potter 1999) and



Fig 1 The area of study in south-east England in which all churches have been examined. The boundary between the Upper Cretaceous (Chalk) and Tertiary rocks is marked by a solid line. The broken line bounds the area in which all churches have been visited. Major national grid lines are marked.

calcareous concretions (Potter 2000a), Bunter quartzite cobbles typically of glacial derivation (Potter 2002), and ferruginouslycemented sands and gravels (Potter 1987; 2001a). Early church builders in the London Basin also re-used materials from earlier Roman structures, noticeably re-using Roman bricks and tiles (Potter 2001b) and travertine (Potter 2000b). In particular, stone suitable for ecclesiastical monumental and sculptural work is absent from the Basin.

Prior to the earliest manufacture of medieval bricks, probably about the 'second quarter of the 12th century' (Rodwell 1998), almost all ecclesiastical building stones other than those described above had to be transported into the London Basin. Roman buildings in the Basin also illustrate this. The Romans used rocks such as the Hythe Beds ragstone from the northern part of the Kentish Weald in great quantities (Marsden 1966). A typical example of its use may be observed in the Roman elements of the ruined church of Stone by Faversham, in north Kent (TQ 991 613). At Silchester (*Calleva*) various Jurassic and Cretaceous rocks from beyond the limits of the London Basin were used in the Roman walls (Sellwood 1984; 1989). Closer to the continent, as at Reculver (*Regulbium*), rocks like the Calcaire Grossier and the Marquise Oolite were imported into the country from France (Worssam & Tatton-Brown 1990).

An especially distinctive stone that was transported into the London Basin, and only occasionally used by the Romans, forms the subject of the present study. This stone, normally referred to as 'Purbeck Marble', was employed as a decorative or ornamental material and was probably almost always used in a polished state. In the London Basin, fragments of this limestone from the Isle of Purbeck have been recorded in a limited number of Roman sites, such as at Colchester (*Camulodunum*) (Hull 1958). Where the transportation of the stone from its quarried source was shorter and easier, the use of this polished limestone was more extensive, as at Fishbourne, where Purbeck Marble was used as early as AD 75.

Within the London Basin, the first appearance of Purbeck polished limestone in ecclesiastical buildings occurs in the 12th century (Jope 1964). Although local quarrying for church building by the later Anglo-Saxons was fairly common (Parsons 1991, Fig 4; Potter 2001a), no trace of the use of *Viviparus* limestone in Anglo-Saxon workmanship has to date been observed in the London Basin. From the late 12th century the material was to achieve wide popularity, and this work details its use in the religious buildings within the London Basin.

Church Archaeology

The current work supplements the comprehensive study undertaken by Leach (1978). Her records relate to the original or initial use of 'Purbeck Marble', which, in its polished state, provided tombs, fonts, effigies, coffins, shrines, altar slabs, etc, as well as internal architectural elements, especially detached shafts. This study adds to those records and, in particular, details the many occasions where this monumental stone has been re-used in external church walls. From such secondary re-use it is possible to extrapolate the presence and quantity of earlier monumental and decorative work provided by this stone, and others like it, in a church.

The examination of external church building fabrics has certain limitations in that the materials involved are not always readily identifiable. Factors such as inaccessibility (especially the height in a wall), lichen and moss cover (a particular feature of north-facing walls), and the inability to test or examine the rocks concerned, other than with a hand lens, make identification fraught with difficulties. The accuracy of this paper is, therefore, limited by these restrictions. Similarly, it proved impossible to gain access to the interior of many church buildings and to confirm or possibly supplement Leach's observations. This is unfortunate; for much of Leach's work appears to have been established from a literature survey and the identification and distinction of 'Purbeck Marble' from other closely comparable limestones (see below) could not always be corroborated.

Table	1 – The age and strat The detail	igraphy of the Purbeck Beds of the 'Lower Purbeck' has	in the region of Swanage, I been omitted.	JK.	
Morter 1984		Westhead & Mather 1996	Allen & Wimbledon 1991; Allen 1998	Beds from which <i>Viviparus</i> limestone could have been worke	
Stages	Formation	Members	Beds	Shaded	
Valanginian	Wessex	Peveril	<i>Viviparus</i> Beds <i>Cypris</i> Clays & Shales	Principal marble Beds	
(Lower Cretaceous)	Formation	Point	Unio Beds Broken Shell Limestone	Thin beds only	
Berriasian (Lower Cretaceous)	Durlston Formation	Stair Hole	Chief Beef Beds <i>Corbula</i> Beds Scallop Beds Intermarine Beds Cinder Bed	Thin beds only	
Upper Tithonian (Upper Jurassic)	Lulworth Formation	Worbarrow Tout Two further Members	Cherty Freshwater Beds Marly Freshwater Beds Mammal Bed Further named Beds	Thin beds only	
Upper Tithonian (Upper Jurassic)	Portland Formation				

Viviparus Limestone 'Purbeck Marble'

Viviparus *limestones*

Confusion has arisen in both geological and archaeological literature over the terminology and precise geological definition of the distinctive ornamental stone that frequently carries the name 'Purbeck Marble'. Most authors, however, comment correctly that the rock is not a true marble but rather a freshwater deposited limestone which can be successfully polished (Clifton-Taylor 1977; Leach 1978). The fossil freshwater gastropod Viviparus (given the generic name Paludina in older literature) occurs in profusion in workable quarried beds of the stone. The genus Viviparus is geologically long-ranging, and disconcertingly limestones containing Viviparus occur at many horizons from the Jurassic to the present time. In some instances these various beds can be differentiated by identifying the specific forms of Viviparus that are included; a task which is often difficult in the cut or polished surfaces of a building stone.

Thin beds of *Viviparus* limestone, each never exceeding much more than 1m in thickness, occur in the rock succession of the Isle of Purbeck (Table 1).

The beds appear to have provided the majority (but not all) of the polished stone for building or decorative purposes - hence the name 'Purbeck Marble'. Following international correlation the beds above the base of the Cinder Bed were given a Lower Cretaceous age (Casey 1963; 1967). The detailed bed-by-bed description of the Purbeck Beds in Durlston Bay, Swanage, by Clements (1992), it should be emphasised, is only accurate for that precise locality. Individual beds will vary in thickness, and others will appear or disappear, in very short distances. The blue, red and green 'marble' beds visible in Durlston Bay (Cosgrove & Hearn 1966) would not be expected to show continuity throughout the area, nor, because of the variable state of oxidisation of iron, would their colour be representative.

In a strict sense the Purbeck ornamental limestone should perhaps only be identified where, with the exception of minute ostracods, *Viviparus*, and in particular the species *V cariniferus*, is virtually the sole fossil in the limestone. Lower in the Purbeck succession, generally in those deposits identified as Purbeck stone (Table 1), limestones which also contain bivalve shells occur, and these rocks may sometimes be observed in polished form in churches. A precise geological definition for the use of the term 'Purbeck Marble', therefore, is not possible.

Higher in the Lower Cretaceous succession of Surrey-Sussex-Kent, in the Weald Clay Formation, there are further thin (generally less than 20cm thick) bands of *Viviparus* limestone. These flaggy limestones are given a variety of names according to their derivation. Typical names applied to the limestones include 'winkle stone' and Sussex, Bethersden, Charlwood, and Petworth 'marble'. These beds were certainly worked in medieval times (although probably not as early as the Purbeck material). Detailed geological and palaeontological analyses are required to differentiate them from the Purbeck stone (Worssam & Tatton-Brown 1993, 107; Pearson & Potter 2002). The similarity of the Wealden and the Purbeck limestones has, therefore, further blurred the accuracy of past judgements as to the correct geological provenance of these ornamental stones. In the present work the two areas of provenance are distinguished wherever possible. This distinction is more obvious when the material from the Weald Clay Formation contains the large species *Viviparus fluviorum*, from high in the Formation. Because of frequent lack of church access, this distinction has often only been possible in re-used limestone fragments in external church walls.

Within the London Basin there appears to be no record of *Viviparus* limestone being quarried initially for the external decoration of a church. Further south in England, nearer to its source, polished stone of this type was very occasionally used externally, as at Horne's Place Chapel (TQ 957 307, built about 1377), in south Kent. The rock, however, when exposed to the elements tends to weather poorly.

Viviparus Limestone use

Although imported 'marbles' such as Tournai were certainly utilised in Britain from the mid 12th century (mainly for fonts and sepulchral monuments), not until the mid 16th century did a variety of limestones and marbles enter southern England from continental Europe in quantity. Over these four centuries *Viviparus* limestones comprised the most important polished ecclesiastical stones to be used in the country.

Stone from Purbeck: As it occurs in the London Basin, either in its initial role as a monumental or decorative stone or as a re-used stone in the walls of the churches, the bulk of the Viviparus limestone that is present has apparently been quarried from the Purbeck, Swanage-Corfe area. This material was exported from the Isle of Purbeck normally via a loading area at Ower in Poole harbour, and only in more recent times from Swanage. To reach the London Basin, distribution must have been by means of unloading points in the Thames estuary, the River Thames and its tributaries as far as they were then navigable. Accounts of the medieval working and the costs of the Purbeck ornamental limestones have been given by Drury (1948); Salzman (1952); Leach (1978); and others. Following extraction, much of the cutting, turning and polishing of the stone appears to have been completed at Corfe, although there is evidence for completion, especially of tombs, both in London (Blair 1991) and at the final ecclesiastical site (Bond 1913; Knoop & Jones 1949; Leach 1978). Royal patronage for the quarries was significant, and clearly, in relative terms, the finished ornamental stone on arrival at its final destination in the London Basin was expensive.

The additional costs involved in using polished Viviparus limestone from Purbeck, over other unpolished stone may be illustrated from the accounts related to the building of Exeter Cathedral (Erskine 1981). In 1299, two 'marble stones' were purchased from Corfe for the altar, at a price of 13 shillings. In the same year 100 cart loads of local Exeter stone were obtained for 3s 6d, and a boat load of Caen stone, from France, was delivered to the Exeter wharf, at a cost of only 16s. The quality of the stone, the precision of its working, and transportation costs have to be known to make exact comparisons. In 1309, a boat load of Caen stone was priced at £6 2s, however, still very cheap in terms of the Purbeck material. Salzman (1952, 119) provided some interesting comparative prices for the transport of ashlar stone for use in 1287 in Norwich cathedral. The purchase of a load of Caen stone amounted to 30%, as a percentage of the overall cost of £4 8s 8d; its transport by ship to Yarmouth 57%, transhipment to barges 2%, carriage by barge 8%, and the movement from the Norwich wharf to the cathedral a further 2%. Short overland transport distances by cart or pack-horse proved particularly expensive. Salzman recorded that in 1314 the carriage of stone over a distance of less than ten kilometres, for Tutbury castle, equated to 65% of the total cost. When Viviparus limestone was worked and polished, its transport costs would have been proportionately smaller.

Re-used limestone blocks at two churches, Farnham, Surrey (in the south transept) and High Ongar, Essex (in the north-western nave buttress), were noted as including significant fossil bivalve remains. This suggests a quarry origin from perhaps one of the thinner *Viviparus* beds such as those that occur occasionally in the Broken Shell Limestone (Table 1). All the *Viviparus* material used for original church interior decorations, therefore, may not have been 'Purbeck Marble' in the strict sense.

Stones from the Weald: A small number of church buildings in the London Basin have incorporated the large species of *Viviparus* decorative limestone from the Weald Clay Formation for internal use, frequently as paving or tomb slabs, for the limestone tends to be more flaggy than that from Purbeck. Canterbury and Rochester cathedrals contain such material. A list of the limited number of ecclesiastical buildings which, in the London Basin, include the Weald Clay limestone is given in Table 2.

Externally re-used fragments of this limestone were observed in four instances only: in the south aisles of the churches at Northfleet and Wennington, in the nave and chancel of Luddenham church, and in the tower of Great Bookham church. The Wealden *Viviparus* limestones must have been transported overland to the London Basin and their penetration into the Basin for internal use as monumental/ornamental material, as far as can be determined, was limited. The present author has only identified such Wealden material in ecclesiastical buildings which occur at the southern edge of the Basin; within the Weald, however, the use of this type of ornamental limestone is common and Purbeck material is rare. The unusual

Table 2 – Churches in the London Basin, in which there is an occurrence of Wealden Viviparus limestone, and its penetration distance into the Basin					
Church ¹	County	Wealden 'marble' occurrence ²	Penetration distance into the London Basin³/km		
Addington	Surrey	Chancel, slab (1509-1544)	7		
Albury	Surrey	South aisle; coffin slabs	-		
Bekesbourne	Kent	Coffin slab (c1600)	12		
Canterbury Cathedral	Kent	Extensive	10		
Compton	Surrey	Coffin slab in chancel	-		
Crondall	Hampshire	Coffin slab in porch	2		
East Horsley	Surrey	Re-used as internal step	4		
Great Bookham	Surrey	Re-used in tower, tomb slab (c1598), plaque (1918)	4		
Hackington	Kent	Coffin slab in tower; in nave (1457)	12		
Luddenham	Kent	Re-used nave and chancel walls	13		
Northfleet	Kent	Re-used in South aisle	12		
Puttenham	Surrey	Slab (c1604)	-		
Rochester Cathedral	Kent	Extensive ^₄	6		
Shere	Surrey	South and West doorways; aisle shafts	-		
Sturry	Kent	Coffin slab in nave (c1496)	19		
Wennington	East London	Re-used in South aisle	13		
West Clandon	Surrey	Font shafts	2		
West Horsley	Surrey	Re-used as internal step	4		
Worplesdon	Surrey	Re-used coffin slab, West porch	5		

Notes

1. Further details of each church are given in the Appendix.

2. Dates provided by slab inscriptions.

3. Approximate only, taken from the top of the Chalk escarpment.

 Worssam (1995) provides detailed information on the various Viviparus limestones visible in Rochester Cathedral.

iviparus *Limestone 'Purbeck Marble*

occurrence of two possible re-used Roman capitals in Albury old church, in Surrey (which is just to the south of the North Downs and, therefore, very slightly beyond the limits of the London Basin), requires further investigation. Malden (1905) described the bases of the south aisle columns as *'circular capitals in Sussex marble, turned upside down and mutilated to fit their new position'*. Limewash cover today prevents possible identification of the stone, but Roman use of this material is not known to be recorded from elsewhere.

Re-use in external contexts

It generally proves difficult to determine the probable date on which the *Viviparus* limestone fragments were re-used and included in the church walls. The dating of individual walls is in itself problematic. In most instances the fragments in reuse represent broken-up tombs and monumental furnishings of the 'marble' incorporated for the purpose of wall repair. Fewer than ten fragments are present in most churches. This patching could have occurred at any date from when the original polished limestone was no longer considered worthy of being an element of the internal church décor.

As they occur in church walls most blocks of the *Viviparus* limestone preserve their cut parallel sides, evidence of their original use as monumental slabs. More decorative pieces of this ornamental stone may also be occasionally identified. Cross-sections of architectural columns may be seen, for instance, in the east end of the nave at St Laurence, Blackmore (Essex), in the south wall of the nave of All Saints, Westbere (Kent), and again in the tower of All Saints, Sudbury (Suffolk).

In the instances where blocks of the Viviparus limestone are more numerous, dating is somewhat easier. Examples occur at All Saints, Farnham (Surrey), where the material was probably re-used following an extensive church fire and at Blackmore (Essex), where on the demolition of the chancel it provides infill for the east end of the nave. Where it was possible to identify the date of re-use, no real pattern emerged. Neither the post-Reformation period of change to Protestant worship practices, nor the impact of Commonwealth vandalism, can be directly related to the dates when the destruction of the polished stone church furniture and decoration would have occurred. Rather, many of the dates reflect major rebuilding periods. In the many churches where only a few pieces of re-used polished stone occur, ancestral altar tombs, effigies and monuments may well have become redundant as local landowners and church patrons changed with time.

The geographical distribution

All re-used *Viviparus* limestone in external church walls in this work has been examined and identified, although the origin of the internally used stone has only been confirmed where church interiors have been open for access. For this reason the precise extent of the Purbeck derived stone as compared with that from the Weald is not discussed in detail. Until an examination of all the churches in Kent, Sussex, and areas adjoining the Weald, has been completed, the exact distribution of the Wealden material will remain unknown.

Within the London Basin only 264 ecclesiastical buildings have been observed as containing *Viviparus* limestone. In 180 (68%) of these the stone remains in its initial provision, ie as monumental or decorative stone within the church. In 120 instances (45%) pieces of *Viviparus* limestone are incorporated into the external walls of the buildings in a reused capacity. Very few churches (27, or 10%) contain both the internal monumental/decorative stone and re-used fragmental external material, suggesting that much past refurbishment involved the whole, or a large part (as for example, the chancel), of the interior of the church.

Figure 2 portrays the geographical distribution of the buildings which contain *Viviparus* limestone and brief details of each church are given in the Appendix. In Fig 3 the intensity of ecclesiastical buildings containing the *Viviparus* limestone has been contoured. Geological and geographical factors (including intensity of settlement) clearly influence the distribution of the buildings containing the stone.

Areas of sandy geological formations, like the Upper Eocene, Bagshot and Bracklesham Beds of Surrey, were generally only lightly populated and are normally devoid of churches and, therefore, *Viviparus* limestone occurrence. The same is partially true of those areas underlain directly by the London Clay Formation (as Middlesex and Hertfordshire). The absence of churches reflects the unsuitability of the soils for agricultural purposes and the associated lack of medieval settlement. The coastal regions, and at a more detailed scale the river flood plains, were similarly less settled (Potter 1997).

The *Viviparus* limestone occurrences in the London Basin do, however, show clear concentrations. The urban areas of London, Canterbury, Sandwich, Colchester and Sudbury are particularly evident, with other areas of intensity about Dartford-Grays, Bishop's Stortford, Ipswich, Malden and the Brain valley, and the Wey and Middle Thames terraces. Notable absences include Rochester and Chelmsford. Whereas in the vicinity of London, many of the materials used in medieval walls tend to have been eventually lost as a result of the repeated rebuilding of the churches (Potter 2001a), the *Viviparus* limestone, being initially an internal monumental/decorative stone, is less influenced by the effects of subsequent population growth.

Linear distributions are not well displayed on Fig 3 and one remarkable pattern is more evident in Fig 2. Seventy-six (29%) of the *Viviparus* limestone bearing churches are situated within 1km of the Chalk-Tertiary (Palaeogene) spring line. This alignment is especially well portrayed along the foot of the dip slope of the North Downs (through Surrey and Kent) where other secondary geological



Fig 2 London Basin churches incorporating Viviparus limestone either as internal monumental / decorative stone or as external wall fabric. In occurrences where localities overlap numbers are given, these refer to the following urban sites: 11 = City of London; 9 = Canterbury; 6 = Colchester; 4 = Sandwich.



Fig 3 Contoured distribution of those churches in the London Basin which preserve Viviparus limestone. Contouring has been based on 10km centres.

influences, such as the superficial deposits seen in north Essex and Suffolk, are less developed (Potter 2004). The importance of fresh water in early settlement cannot be stressed enough. Running water can provide both fresh water and sewage disposal, and those persons with sufficient influence selected a situation for residence, as the manor house, closest to the fresh water source. The proprietary nature of most early churches finds them situated close to these manor houses and the patronage provided by the benevolence of their occupants.

Church affluence

If, as has been suggested (Edwards 1981) that, 'during the fourteenth century England's parish churches were adorned by more than one hundred thousand monumental brasses'; there must have been an enormous demand at that time for 'marble' slabs to which they would have been affixed. Viviparus limestones were possibly the principal ornamental stones to be carried into the London Basin for use in early medieval ecclesiastical work. Their initial use as polished stone or 'marble' within churches sets them apart from most other English stones like Cretaceous, Upper Greensand, or Jurassic limestones, or the extensively used Caen Stone from France, all of which had to be transported into the London Basin. Viviparus limestone was clearly valued and deemed a luxury. For effect, in many of the larger churches and cathedrals it was added to principal piers as flanking shafts, columns and capitals (especially in the 13th century). Those that sought after this stone, either for decorative architectural use or for monumental work or effigies, were undoubtedly financially affluent. The presence of the stone in a church, either in its original situation or in re-use as fabric in the walls, reflects this affluence. Such churches were probably financially well-endowed with respect to comparable churches of similar size, therefore, at least over the period(s) of the 'marble's' initial installation.

The geographical distribution of Viviparus limestonebearing churches in the London Basin further supports this view of affluence. The distribution of the use of polished limestones suggests that financial endowment related closely to local wealth rather than more distant patronage. Individual local families certainly provided the patronage for the introduction of church furniture like tombs, effigies and personal chapels which, even today, contain much of the polished stone decoration. The churches (Figs 2 and 3) mainly occur as clusters in or near major urban centres, or distributed near to sites of fresh and clean running water and springs. The owners of the more stately manorial properties were desirous of such areas of residence, much as still today and their sponsorship assisted in both the church maintenance and the original inclusion of the polished stone in the church.

In the south of England polished *Viviparus* limestone was undoubtedly the most important polished ornamental stone during medieval times. This paper illustrates that, over time, much of the rock became re-used and incorporated as wall fabric, rather than remained in the role for which it was first carved, polished and envisaged. Any analysis (which might in the north of England include limestones such as Frosterly or Egglestone) must, therefore, examine and identify the material that is re-used as well as that remaining in its original position within a church.

Acknowledgements

The author wishes to thank Dr P Palmer and Dr B Worssam for their confirmations regarding certain geological occurrences of *Viviparus* limestone within the Weald. The continued support received from the author's wife in these church fabric studies has been, as always, invaluable.

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Appendix

The occurrence of Viviparus limestones in the churches of the London Basin

Notes

- Grid references are presented in full configuration to associate with Fig 1. а
- Questioned figures indicate locality (from Leach, 1978) uncertain. b Location on external walls as follows:
 - N present in the church nave (in the instance of Canterbury, St Dunstan this refers to the original nave)
 - C present in the church chancel (in the instance South Weald this refers to the original chancel)
 - Т - present in tower
 - Р - present, location(s) not detailed
 - Ch present in church chapel
 - Ph present in church porch
 - V present in vestry
 - B present in buttress; NB nave buttress, etc.
 - present in church aisle Α –
- in each of these major religious sites, found in the early monastic outbuildings Viviparus limestone used for internal architecture as shafts, sedilia, etc. Information c mainly from Leach (1978) and dates of workmanship detailed. In a number of instances identified by the present author the stone may be re-used; e.g. East Horsley, where an internal door threshold may be a re-used tomb slab.

Р - undated

- Viviparus limestone used for monumental work. Information and dates mainly d from Leach (1978), with supplementary information from the present author. Type of work as follows:
- Altar A
- Coffin, tomb or similar slab
 Effigy
 Font
 Tomb С
- E
- F Т
- Information from appropriate Victoria County History.
- 1. At the east end of the nave (chancel demolished).
- Capitals in the Victoria and Albert Museum. 2.
- 3. Infill to Norman door.
- 4. Documentary information only (see Leach, 1978).
- Church demolished now in Bishopsgate, St. Helen.
 'Now in Luddenham church, Kent' (statement in Leach, 1978), no longer applies.
- 7. Pevsner & Radcliffe (1996) suggest an imitation.

Locality	Dedication	Grid reference ^a	External walls ^b	Internal architecture ^c	Monumental
Abberton (Essex)	St Andrew	5997 2194	N	-	-
Abbeywood (Kent)	Lesnes Abbey	5479 1788	-	-	C (c1200)
Addington (Surrey)	St Mary the Virgin	5372 1640	-	-	C (1509-1544)*
Albury (Herts)	St Mary the Virgin	5436 2247	Т	-	F (L12c)
Albury (Surrey)	SS Peter & Paul	5064 1479	-	c1200	С
Aldenham (Herts)	St John the Baptist	5140 1985	-	-	F
Alphamstone (Essex)	St Barnabus	5878 2355	-	-	F
Alresford (Essex)	St Peter	6065 2206	С	-	-
Ardleigh (Essex)	St Mary the Virgin	6054 2296	С	-	-
Ash (Kent)	St Nicholas	6287 1584	-	-	E (c1300)
Barking (Essex)	St Margaret	5441 1838	+	-	-
Basildon (Essex)	Holy Cross	5714 1898	Р	-	-
Basing (Hants)	St Mary	4666 1529	-	-	F (L15c)
Bawdsey (Suffolk)	St Mary	6347 2402	N	-	-
Beddington (Surrey)	St Mary	5295 1654	-	-	C (1520), F (13c)
Bekesbourne (Kent)	St Peter	6195 1555	Р	-	C (c1600)
Belchamp Walter (Essex)	St Mary the Virgin	5827 2407	Ph	-	-
Bentley (Suffolk)	St Mary	6119 2382	Ph	-	F (13c)
Berden (Essex)	St Nicholas	5468 2297	Т	-	C (13c)
Bisham (Berks)	Abbey	4846 1850	-	c1260-1310	-
Bisham (Berks)	All Saints	4848 1855	-	-	T (E16c)
Bishop's Stortford (Herts)	St Michael	5486 2214	-	-	F (12c)
Black Notley (Essex)	SS Peter & Paul	5762 2207	-	-	C (c1300)
Blackmore (Essex)	Priory church of				
	St Laurence	5603 2016	N ¹	-	-
Blaxhall (Suffolk)	St Peter	6356 2569	Т	-	-
Blean (Kent)	St Cosmos & St Damian	6128 1607	N	-	-
Bowers Gifford (Essex)	St Margaret of Antioch	5755 1873	NC	-	-
Bradfield (Essex)	St Lawrence	6145 2308	-	-	F (13c)
Braintree (Essex)	St Michael	5756 2229	Т	-	-
Bramley (Hants)	St James	4645 1590	С	-	F (L12c)*
Bray (Berks)	St Michael Bray	4902 1797	Т	-	-
Broxbourne (Herts)	St Augustine	5373 2070	-	-	T (E16c), F (L12c),
	Ot Andrew	5944.0400		1000 1010	0 (1473)
Buimer (Essex)	St Andrew	5644 2402	-	C1260-1310	-
Burnham-on-Crouch (Essex)	St Mary the Virgin	5948 1970	-	-	F (C1200)
Bushey (Herts)	St James	75130 1953	-	c1210-1260	-
Butley (Suffolk)	Abbey	63/5 2493	+	-	-
Canterbury (Kent)	Cathedral	6151 1579	+	c1170-1260	T (1193-1540)
Canterbury	St Dunstan	6143 1583	N	-	-

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Canterbury	St Paul without the walls	6153 1576	Р	-	-
Canterbury	-	6152 1577	Т	-	-
Capel St Mary (Suffolk)	St Mary the Virgin	6085 2383	Т	-	-
Carshalton (Surrey)	All Saints	5280 1645	-	-	C (c1497)
Cheam (Surrey)	Lumley Chapel	5243 1639	-	-	C*
Chelsfield (Kent)	St Martin of Tours	5479 1640	С	-	-
Chertsey (Surrey)	Abbey	5043 1672	+	P ²	-
Cheshunt (Herts)	St Mary the Virgin	5349 2024	-	c1418-28	F
Chillesford (Suffolk)	St Peter	6382 2523	-	-	F (13c)
Chingford (Essex)	SS Peter & Paul	5385 1944	-	-	F (12c)
Chiswick (Middx)	St Nicholas	5215 1777	-	-	C (13c)
Clavering (Essex)	SS Mary & Clement	5471 2318	-	-	E (c1200-1250),
					F (c1200)
Colchester (Essex)	St Botolph Priory	5995 2253	Р	-	-
Colchester	St Giles	5998 2248	Ν, Τ	-	-
Colchester	St Leonard	6013 2247	Р	-	-
Colchester	St Martin	5996 2253	С	-	-
Colchester	St Mary at the Walls	5993 2251	ТВ	-	-
Colchester	St Peter	5994 2252	Р	-	-
Compton (Surrey)	St Nicholas	4954 1470	-	-	С
Cooling (Kent)	St James	5756 1760	-	c1210-1260	F (13c)
Copford (Essex)	St Michael & All Angels	5935 2227	-	_	F (c1200)
Corringham (Essex)	St Marv	5710 1833	Р	-	-
Cressing (Essex)	All Saints	5794 2204	N	_	-
Crondall (Hants)	All Saints	4795 1485	-	_	T (c1563), C
Dagenham (Essex)	SS Peter & Paul	5501 1845	N	c1210-1260	-
Darenth (Kent)	St Margaret	5560 1713	N ³	-	-
Dartford (Kent)	Holy Trinity	5544 1740	Ch	_	_
Denham (Bucks)	St Mary	5043 1870	-	-	E (E13c), T (c1500)
Earls Colne (Essex)	St Andrew	5861 2288	-	-	C (c1340)
East Ham (Essex)	St Mary Magdalene	5429 1824	C	-	-
East Horsley (Surrey)	St Martin	5095 1528	-	P	_
Eastwick (Herts)	St Botolph	5434 2117	-	c1210-1260	-
Elmstone (Kent)	-	6262 1603	-	-	E (12 or 13c)
Englefield (Berks)	St Mark	4624 1720	-	c1210-1260	T (c1514)
Engleneid (Berne)	All Saints	5444 2045	-	c1210-1260	-
Evke (Suffolk)	All Saints	6317 2517	Α	-	_
Earnham (Surrey)	All Saints	4838 1467	N Tr	_	_
Faulkbourne (Essex)	St Germanus	5800 2166	-	_	E (c1200-1250)
Feering (Essex)	All Saints	5873 2204	т		-
Feltham (Middy)	-	5107 1733	-	_	C(13c)
Fetcham (Surrey)	St Many	5150 1556		D	-
Finchingfield (Esper)	St John the Bantist	5696 2229		F	- C (c1522)
Finchingfield (Essex)	St John the Baptist	5240 1006	-	-	C (C1525)
Flowtop (Suffelk)	St Many	6092 2469	-	-	F (E130)
Flowton (Sunok)	St Michael	5717 1920	-	-	F (130)
Fobbling (Essex)	All Cointe	5/1/ 1039	-	-	F (130)
Forducion (Kent)	All Sallits	6191 1509	D	-	-
Fordwich (Kent)	St wary the virgin	6092 2224	F C	-	C (1607)
Fraing (Essex)	- Ot Man	5400 0000	C	-	-
Furneaux Peinam (Herts)	Stiviary	5432 2280	7		F(13C),
	Ot Nich also	5570 0007	-	- 1000	T (C1455-1540)
Fyfield (Essex)	St Nicholas	55/3 206/	1	c1330	F (L12C)
	St Mary	5440 2136	-	C1260-1310	F (12C)
Goldnangar (Essex)	St Peter	5905 2088	N	-	-
	St Andrew	5627 2121	-	-	C (13C)
Gostiela (Essex)	St Catherine	5/// 2294	А	-	C (13C),
	All Opints	0050 4007		-1050 1550	T (1550-1575)
Graveney (Kent)	All Saints	6053 1627	-	c1350-1550	T (1550-1575) C
Graveney (Kent) Great Baddow (Essex)	All Saints St Mary the Virgin	6053 1627 5730 2048	– Т, А	c1350-1550 -	T (1550-1575) C -
Great Baddow (Essex) Great Baddield (Essex)	All Saints St Mary the Virgin St Mary the Virgin	6053 1627 5730 2048 5677 2303	- T, A -	c1350-1550 - -	T (1550-1575) C - T (pre 1584)
Great Baddow (Essex) Great Bardfield (Essex) Great Bealings (Suffolk)	All Saints St Mary the Virgin St Mary the Virgin St Mary	6053 1627 5730 2048 5677 2303 6231 2489	– T, A –	c1350-1550 - - -	T (1550-1575) C - T (pre 1584) F
Great Baddow (Essex) Great Bardfield (Essex) Great Bealings (Suffolk) Great Bedwyn (Wilts)	All Saints St Mary the Virgin St Mary the Virgin St Mary St Mary the Virgin	6053 1627 5730 2048 5677 2303 6231 2489 4277 1643	- T, A - -	c1350-1550 - - - c1330, 1854	T (1550-1575) C - T (pre 1584) F F (1854)

Great Bookham (Surrey)	St Nicholas	5134 1546	Т	-	F, T (1598)
Great Braxted (Essex)	All Saints	5851 2155	Т	-	-
Great Hallingbury (Essex)	St Giles	5511 2196	-	c1260-1310	-
Great Henny (Essex)	St Mary the Virgin	5867 2378	С	-	-
Great Oakley (Essex)	All Saints	6188 2274	-	-	F (12c)
Great Tey (Essex)	St Barnabas	5892 2257	СВ	-	A
Great Waldingfield (Suffolk)	St Lawrence	5912 2439	Т	-	-
Guildford (Surrev)	St Marv	4996 1494	-	c1180-1210	-
Hackington (Kent)	St Stephen	6147 1592	T.C	_	C (c1457)
Harefield (Middy)	St Mary	5054 1896	-	_	C (c1544)
Harlington (Middx)	SS Peter & Paul	5087 1783	_	_	F
Harmandsworth (Middy)	St Man	5056 1778			F (c1200)
Harrow on the Hill (Middy)	St Many	5152 1975			F (12c)
Harrish (Fase)	St Nicholog	6060 0207	-	-	F (120)
Harwich (Essex)	St Nicholas	0202 2327	- -	-	F (E13C)
Hatfield Broad Oak (Essex)	St Mary the Virgin	5340 2100		-	-
Hatfield Peverel (Essex)	St Andrew	5797 2110	AB	-	-
Havering-atte-Bower (Essex)	St John the Evangelist	5512 1931	-	-	F (L12c)
Heckfield (Hants)	St Michael	4723 1605	-	-	F (c1350?)
Hedsor (Bucks)	St Nicholas	5907 1863	Р	-	-
Hemley (Suffolk)	All Saints	6285 2424	-	-	F (11-12c)
Heybridge (Essex)	St Andrew	5855 2081	-	Р	F
High Ongar (Essex)	St Mary	5565 2037	NB	-	-
Hitcham (Bucks)	St Mary	4920 1826	Р	-	-
Hockley (Essex)	SS Peter & Paul	5825 1934	AB	-	F
Hollesley (Suffolk)	All Saints	6353 2444	С	-	-
Horndon on the Hill (Essex)	SS Peter & Paul	5669 1833	A	_	-
Holton St Mary (Suffolk)	St Mary	6059 2368	P	_	-
Hurlow (Porke)	St Many the Virgin	4825 1841			C (1/92)*
Huret (Berks)	St Mary the Vigin	4023 1041	-	-	0 (1432)
Hurst (Berks)	Stinicholas	4793 1730	_	-	-
Ipswich (Suffork)	-	6162 2444	A	-	-
Iver (Bucks)	St Peter	5040 1812	CB	-	C (C1508), F (12C)
Kingsclere (Hants)	St Mary	4525 1586	-	-	F (15C?)
Laleham (Middx)	All Saints	5052 1688	-	-	А
Latchingdon (Essex)	St Michael	5888 1987	N, Ph	-	-
Latton (Essex)	St Mary the Virgin	5465 2109	-	-	C (c1467)
Layer de la Haye (Essex)	St John the Baptist	5964 2192	-	-	T (c1543)
Layham (Suffolk)	St Andrew	6031 2404	-	-	F
Little Clacton (Essex)	St James	6166 2188	-	-	F (L12c)
Little Dunmow (Essex)	St Mary	5656 2214	V	c1210-1260	C (13c)
Little Easton (Essex)	St Mary	5604 2235	-	-	C (L15c), T (c1485)
Little Glemham (Suffolk)	St Andrew	6346 2587	-	-	F (13c)
Little Hadham (Herts)	St Cecilia	5446 2227	Р	_	-
Little Horkesley (Essex)	SS Peter & Paul	5960 2320	-	-	T (L15c)
Little Leighs (Essex)	St. John the Evangelist	5719 2167	C	_	-
Little Marlow (Bucks)	St John the Bantist	4874 1878	-		C (c1430)
	St John the Baptist	4074 1070 E19E 1014	- т	-	0 (01450)
	St Lawrence Whitchurch	5165 1914		-	-
Little Thurrock (Essex)	St Mary the Virgin	5626 1777		-	-
Littlebourne (Kent)	St Vincent	6211 1579	Р	-	-
London, Great Tower Street	All Hallows by the Tower				
	with St Dunstan	5335 1807	-	-	T (c1500)
London	St Bartholomew	Street Street Street Street			
	- the Less	5320 1817	-	-	C (c1500)
London	Carmelite Friars	5316 1810	-	-	A (1274)4
London, Chelsea	Old Church	5272 1776	-	-	T (1555)
London, Lambeth	Palace Chapel	5306 1792	-	c1210-1260	-
London, Lambeth	St Mary	5306 1791	-	-	C (c1520)
London, Bishopsgate	St Martin Outwich	5331 1813	-	-	T (1500)5
London	St Paul's Cathedral	5321 1813	-	c1310	-
London	Westminster Abbey	5301 1795	-	c1210-1310	C.E (c1200)
London	Temple Church	5313 1812	_	c1170-1260	C (13c)
		3010 1012		0.110 1200	E (1200-1255)
London	St Vedast alias Foster	5323 1813	P	_	_
London	Cathodral	5327 1004	-	01260-1210	_
Landon Cauthurad		0.07/ 1004	1 -		1 -

Church Archaeolo

Viviparus Limestone Purbeck Marble

Viviparus Limestone 'Purbeck Marble'

Luddenham (Kent)	St Mary	5993 1631	N,C	-	-
Maldon (Essex)	All saints	5849 2071	С	-	-
Maldon (Essex)	Beeleigh Abbey	5840 2077	-	c1210-1260	-
Margaretting (Essex)	St Margaret	5665 2004	С	-	-
Messing (Essex)	All Saints	5897 2189	С	-	-
Middleton (Essex)	All Saints	5871 2397	-	-	C (1349)
Milton (Kent)	St Nicholas	6120 1 557	-	-	(post 1310)
Minster (Kent)	St Mary the Virgin	6311 1 643	-	-	F
Moreton (Essex)	St Mary the Virgin	5537 2071	-	-	F (c1200)
Mountnessing (Essex)	St Giles	5648 1966	A, AB	-	-
Mucking (Essex)	St John the Baptist	5685 1813	-	c1210-1260	-
Newark (Surrey)	Priory	5042 1577	-	c1210-1260	-
Newton Green (Suffolk)	All Saints	5920 2413	Т	-	-
North Shoebury (Essex)	St Mary the Virgin	5929 1862	-	-	F
North Stifford (Essex)	St Mary	5605 1803	-	-	C (E14c)
North Weald (Essex)	St Andrew	5495 2052	Р	-	-
Northfleet (Kent)	St Botolph	5624 1741	T,A	-	-
Ockham (Surrey)	All Saints	5066 1566	-	c1210-1260	F (E13c)
Odiham (Hants)	All Saints	4740 1509	Р	-	-
Orford (Suffolk)	St Bartholomew	6422 2500	N, NB	-	T (15-16c)
Orpington (Kent)	All Saints	5466 1665	-	-	F
Orsett (Essex)	St Giles	5645 1820	-	post 1310	-
Pamber End (Hants)	Priory	4609 1583	-	-	С
Panfield (Essex)	St Mary & St Christopher	5738 2254	NB	-	-
Pebmarsh (Essex)	St John the Baptist	5854 2337	-	post 1310	-
Peldon (Essex)	St Mary the Virgin	5989 2168	-	-	F
Pleshev (Essex)	Holy Trinity	5664 2143	N.C	-	-
Puttenham (Surrev)	St John the Baptist	4934 1478	-	-	C (1604)*
Ramsholt (Suffolk)	All Saints	6306 2422	Ph	-	Т
Rayleigh (Essex)	Holy Trinity	5807 1908	-	-	F
Rendelsham (Suffolk)	St Gregory	6324 2528	т	_	-
Bickling (Essex)	All Saints	5498 2316	-	_	C (15c)
Bochester (Kent)	St Andrew Cathedral	5743 1685	+	c1170-1310	E (1250-1310
Bochford (Essex)	St Andrew	5872 1903	C	-	-
Boydon (Essex)	St Peter	5407 2103	-	_	F
Ruislip (Middx)	St Martin	5092 1876	-	_	F (12c?)
St Albans (Herts)	St Alban Cathedral	5145 2070	_	c1170-1310	T (c1305)
St Mary Cray (Kent)	St Paulinus	5474 1691	с	-	-
St Osvth (Essex)	Priory	6122 2156	-	c1230-1240	_
St Osyth (Essex)	SS Peter & Paul	6123 2155	-	-	Α
Sandwich (Kent)	St Bartholomew Chapel	6330 1575	Р	_	E (c1200-1250)
Sandwich	St Clement	6333 1580	C	_	-
Sandwich	St Mary the Virgin	6329 1584	P	-	-
Sandwich	St Peter	6331 1583	-	c1260-1310	_
Salcott (Essex)	St Mary the Virgin	5952 2137	C	-	_
Sawbridgeworth (Herts)	Great St Mary	5485 2148	-	_	$C_{\rm r}$ (E14c)
Send (Surrey)	St Mary the Virgin	5018 1543	СТ	_	-
Shalford (Essex)	St Andrew	5724 2293	_	_	$C(14c^{2})$
Sheering (Essex)	St Mary the Virgin	5508 2137	_	_	C (1+01)
Shere (Surrey)	St James	507/ 1/77	_	- c1200*	C E (c1200)*
Shinfield (Berks)	St Many	4730 1683		-	C (1579)*
Shorpe (Kent)	SS Potor & Paul	5600 1710		_	0 (1576)
Sittinghourne (Kent)	St Michael	5000 1626	DD, A	-	
Shangbourne (Kent)	St. John the Bantist	6304 2503	т	-	-
South Benfleet (Essay)	St Man/ the Virgin	5778 1960	_	_	- C
South Ockandon (Essex)	St Nicholos	5505 1900	-	-	C (12a)
South Covendon (Essex)	St Androw the Ament	5000 1946	-	-	U (13C)
South Shoebury (ESSEX)	St Andrew the Apostle	5570 1080		-	-
South Weald (ESSEX)		5612 1710	N	-	-
	- All Sainta	6105 0450		01310	-
Sproughton (Sunoik)	All Samus	0120 2450	U I	-	-
Stanioru-le-Hope (Essex)	Ct Morgeret of Autient	5601 1000			C (a1500) F
Stopwall (Midde)	St Margaret of Antioch	5684 1823	-	-	C (c1500), F
Stanwell (Middx)	St Margaret of Antioch St Mary the Virgin	5684 1823 5057 1742	-	– post 1310	C (c1500), F -

St Mary the Virgin 5576 1748 c1260-1310 C 6 Stone (Kent) С 6358 2601 F 7 Stratford St Andrew (Suffolk) St Andrew T, AB 6175 1602 C (c1496) St Nicholas Sturry (Kent) _ All Saints 5868 2410 Т Sudbury (Suffolk) _ C (13c), F (13c) All Saints 5887 1893 Sutton (Suffolk) Ρ Swanscombe (Kent) SS Peter & Paul 5604 1740 St Nicholas 4913 1823 F (12c) Taplow (Bucks) All Saints 5774 2148 F (13c) Terling (Essex) St Mary the Virgin 5966 1637 Ρ Teynham (Kent) 5476 2188 F (12c) St James Thorley (Herts) 4634 1746 C (L15c, c1550)* St Laurence Tidmarsh (Berks) Tillingham (Essex) 5993 2038 Т St Nicholas 5908 2112 F Tolleshunt Major (Essex) St Nicholas _ St Michael & All Angels F (L12c) 6363 2552 Tunstall (Suffolk) E (c1250-1310) 4788 1759 Twyford (Berks) St Mary Ufford (Sussex) St Mary of the Assumption 6298 2522 Т F Ulting (Essex) 5802 2087 All Saints _ c1210-1260 E (c1200-1250) 5381 2007 Waltham Abbey (Essex) Holy Cross & + F (12 or 13c) St Lawrence St Mary with St John 5103 1666 Walton-on-Thames (Surrey) т c1400 Ware (Herts) St Mary 5356 2144 St Mary & St Peter A F (13c) Wennington (Essex) 5540 1810 F (c1150-1220) West Clandon (Surrey) SS Peter & Paul 5044 1513 C (L15c) West Ham (Essex) 5414 1834 _ St Mary & St Edward West Hanningfield (Essex) 5735 1998 _ _ F West Horsley (Surrey) St Mary 5088 1527 Ρ SS Peter & Paul 6008 2125 F (13c) West Mersea (Essex) _ St Clement 5593 1774 West Thurrock (Essex) All Saints 6193 1611 Ν Westbere (Kent) _ Wethersfield (Essex) St Mary Magdalene & St Mary the Virgin 5712 2313 C (15c?) Wherstead (Suffolk) St Mary 6162 2407 N,C St Martin White Roding (Essex) 5563 2134 _ F (11-12c) White Waltham (Berks) St Mary 4855 1776 _ _ C (14c, 15c)* Ρ Wickford (Essex) St Catherine 5755 1935 F Willesden (London) St Mary 5215 1848 F (L12c)* St Mary the Virgin 4767 1536 Winchfield (Hants) F (c1250) St George Chapel 4968 1769 Windsor (Berks) _ T (c1455-1550) Ρ St Mary the Virgin 6243 1575 Wingham (Kent) _

5817 2154

6038 2216

5933 2323

4973 1536

6174 2318

5678 2062

Т

A

т

Viviparus Limestone Purbeck Marblé

St Nicholas

St Andrew

All Saints

All Saints

St Mary the Virgin

St Mary the Virgin

Witham (Essex)

Wivenhoe (Essex)

Wormingford (Essex)

Worplesdon (Surrey)

Wrabness (Essex)

Writtle (Essex)

С

C (13c)

T (c1572)