Archaeoastronomical and Topographic Survey at St Mary's Church, Edwinstowe in Sherwood Forest Nottinghamshire.

(SK 62519 66941).

Archaeoastronomical and Topographic Survey Report

Andy Gaunt
Mercian Archaeological Services CIC

06/09/2017
Ref: EDWINGAU17001
Report MAS030

© Mercian Archaeological Services 2017. Mercian Archaeological Services CIC is a limited company registered in England and Wales. Company Reg No. 08347842.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

Archaeoastronomical and Topographic Survey at St Mary's Church, Edwinstowe in Sherwood Forest Nottinghamshire.

Archaeoastronomical and Topographic Survey Report

(SK 62519 66941).

Andy Gaunt MA BSc (Hons) CertHE FGS FRGS

Mercian Archaeological Services CIC

MAS030

Title:	**Archaeoastronomical and Topographic Survey at St Mary's Church, Edwinstowe in Sherwood Forest Nottinghamshire.**
Author:	Andy Gaunt MA BSc (Hons) CertHE FGS FRGS
Derivation:	-
Date of Origin:	01/02/2017
Version Number:	2.2
Date of Last Revision:	06/09/2017
Revisers:	
Status:	Final
Summary of Changes:	Bibliography edited
Mercian Project Identifier:	EDWINGAU17001
Client:	Mercian Archaeological Services CIC
Checked / Approved for Release by:	Sean Crossley MA PGDip BSc (Hons)

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

Contents **Page**

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

Figures in the Text

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

Archaeoastronomical and Topographic Survey at St Mary's Church, Edwinstowe in Sherwood Forest, Nottinghamshire.

1. Summary

Edwinstowe village is located in the centre of Nottinghamshire 11 miles west of the River Trent, 6 miles northeast of Mansfield, and 15 miles north of Nottingham. It is the home of the Sherwood Forest National Nature Reserve, and the world famous *Major Oak*, legendary hideaway of the outlaw Robin Hood. For this association the village, and the wider area of Sherwood Forest are known around the world. Local legend also states that Robin Hood and Maid Marian were married in the village at the church of St Mary (see Crook 2015 for a detailed critique of this local legend).

What is perhaps less well known are the numerous links tying the village of Edwinstowe to the death of the Saxon King Edwin, first Christian King of Northumbria, who was killed at the Battle of Hatfield in the year 633AD. The Battle of Hatfield was fought between the forces of King Edwin of Northumbria on one side, and the combined armies of Penda of the Kingdom of Mercia, and Cadwalla of Gwynedd on the other. The battle saw the Northumbrian's defeated and King Edwin killed (Sherley-Price & Latham, p138).

The battle is currently associated with the village of Hatfield near Doncaster. This report builds on the work of previous historians and on recent archaeological projects, to suggest that it is now beyond any reasonable doubt that the Battle of Hatfield and the death of King Edwin of Northumbria happened in the vicinity of Edwinstowe, Nottinghamshire.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

A topographic survey of the outline of Edwinstowe church was undertaken by Andy Gaunt and Sean Crossley of Mercian Archaeological Services CIC in June 2017. The survey was undertaken to record terrestrial points in Ordnance Survey datum in order to allow empirical observations to be made regarding the orientation of the church. The results of that survey are presented in this report, alongside astronomical observations and recordings undertaken by Andy Gaunt in relation to the orientation of the church and the horizon as observed from that location.

The results of the topographic survey, combined with satellite acquired Digital Elevation data, for the surrounding landscape show that Edwinstowe church has an orientation at an azimuth of 106.5˚. Astronomical calculations show that this alignment orientates on the local horizon to the sunrise as observed on the 19th October (2017).

In Medieval times dates were calculated using the Julian Calendar. Problems relating to the differences between astronomical time and the way the calendar was calculated, meant that there was a drift of over ten days that had accrued, by the time this was corrected in the 16th century, by the introduction of the Gregorian Calendar. Britain adopted the Gregorian Calendar in the 18th century and by this time the drift had increased to eleven days. Eleven days were therefore added to the Julian Calendar dates to correct the drift (a full description of the date changes and astronomical variations are included in the report methodology section).

However, when searching for possible alignments in a building it is necessary to know when a structure was built. When Britain adopted the Gregorian Calendar, this effectively put the dates back to where they would have been if the Julian Calendar had been correct. However, by the date of construction in the 12th century the calendar

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

had already drifted by seven days. As a result, a building aligned on the 12th of October in the 12th century will have a seven-day variance with the date following the correction, and will therefore align with the 19th October in modern times. The seven days of drift which had accumulated by the 12th century is therefore fossilised in the alignment of the building. This alignment variation is only in relation to the calendar date, and not to astronomical events themselves. It only affects alignments based on a particular date, such as sunrise on a particular saint day. It does not affect Solstice or Equinox alignments.

The church at Edwinstowe was rebuilt under the orders of Henry II in the year 1175. Astronomical observations show that on the 12th October 1175 the sunrise took place on the local horizon precisely between 106˚-107˚, with the Sun breaking the horizon at 106˚ and clearing the horizon at 107˚.

According to Bede (Sherley-Price & Latham, p138), King Edwin was killed at the Battle of Hatfield on 12th October 633, and the Catholic church recognises the saint day of St Edwin as the 12th October (http://www.catholic.org/saints/saint.php?saint_id=625 accessed 15/05/2017).

Local legend states that Edwinstowe church is built on the spot where Edwin's headless body lay after the battle, his head was later buried in York Minster and his body finally buried at Whitby Abbey (Everson & Stocker 2015, p25). Following his elevation to sainthood the spot where his body had lain became a hallowed place (Zaluckyj 2011, p30).

In 1381 Richard II granted the right to the villagers of Edwinstowe to hold a vigil and feast on St Edwin's day (The Calendar of the Charter Rolls preserved in the Public Record Office: 1226-[1516] Volume v.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

5. 15 Edward III - 5 Henry V, A.D. 1341-1417). A medieval vigil took place overnight from the preceding day until dawn on the saint's day, and it is suggested here that the location of the dawn may have played a significant part in the vigil.

As is discussed in full below the place-name of Edwinstowe has the meaning *'Edwin's Holy Place'.* This report suggests that the vigil and saint's day celebrations seen from the 14th century, combined with the presence of a '*St Edwin's chapel'* in the neighbouring parish of Clipstone; provides evidence of a medieval cult of St Edwin local to the area around Edwinstowe.

For the orientation of the church on the sunrise of St Edwin's saint's day of 12th October, when the church was rebuilt in the year 1175, in the village bearing his name, and where there appears to be a medieval cult with a tradition of vigil observation and saint day feasting, to be anything other than deliberate seems somewhat unlikely.

Searching for the alignment of churches and their relationships to saints' days and/or other celebrations such as Easter is often plagued with difficulties, due to not knowing the actual date of construction, and with no definitive date for the endowment of a church with its saint. In this instance, the church is dedicated to St Mary, but the saint day in question is not for the saint to which the church is dedicated in the medieval period. It is for St Edwin, not St Mary. The likelihood is that the association with Saint Edwin dates back to before the building of the current church and the dedication of that church to St Mary.

The link with St Edwin is believed to date back to at least the origin of the place-name of Edwinstowe in the Saxon period (certainly pre-Domesday 1086, and the preceding Norman Conquest of 1066)

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

(Gover, Mawer & Stenton 1940).

Domesday lists a preceding church, and this report hypothesises that if the orientation is deliberate, then the preceding Saxon church may also have had an orientation of 106.5 ˚ azimuth. Calculations show that the same alignment was certainly correct back to at least circa 1000AD.

Earlier than this time the orientation, if deliberate, may have been slightly further to the north as circa 633AD the dawn was observed at 104˚-105˚. This was also due to the Julian Calendar drift problem. It is suggested that orientation of the church may have been slightly altered over time as the angle of the sunrise gradually shifted to the angle seen, and preserved by the rebuild of the church in stone in the year 1175.

Reports of the monks of Hexham observing a vigil and sunrise at the site of the battle of Heavenfield in relation to the death of Edwin's nephew St Oswald, provide near contemporary 7th century evidence suggesting that the observance of overnight vigils was prevalent around the time of Edwin's death. This could support the idea of a 7th century origin for the activity of orientation on, and observation of the sunrise at Edwinstowe back to the time immediately following the death of King Edwin as the battle of Hatfield in 633AD.

Place-name evidence linking the Battle of Hatfield to the area around Edwinstowe, and archaeological investigations relating to the discovery of possible mass-burial pits under the church in nearby village of Cuckney (which are being investigated by *The Battle of Hatfield Investigation Society* alongside Mercian Archaeological Services CIC) are discussed and add further weight to the link of King Edwin and the Battle of Hatfield to the local area.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

With the centre of the cult of St Edwin focusing on Edwinstowe church, an alternative origin for the chapel of St Edwin located in the neighbouring lordship of Clipstone, and endowed by King John in 1205, is presented. It is suggested here for the first time that the chapel of St Edwin originated as part of the newly-emerging designed landscape of Clipstone, first interpreted by Gaunt (Gaunt 2011). Chapels and hermitages, as well as performing a religious role, were also an important ingredient in Arthurian and other romance literature of the day and formed a common element in designed romantic hunting landscapes (Creighton 2013). By linking to the local legend and cult of St Edwin the chapel would have been an expression of piety, but would also have had a special level of romance that resonated from the site and the association. It is suggested here that the Chapel of St Edwin is one such parkland chapel, founded to reference the local cult of St Edwin, and that this suggests a deliberate romantic theme. It also takes elements of the origin of the designed romantic Arthurian landscape of Clipstone back to the late 12th to early 13th century, which included the formation of the Deer Park and Great Pond of Clipstone in the later 12th century (Crook 1976).

The linking of the chapel to St Edwin of Northumbria, by the Kings at Clipstone, strengthens greatly the probability of a local cult of St Edwin, centred on Edwinstowe. This helps to bridge the gap between the 1381 reference to the vigil and saint day feast in the village, and the rebuilding of the church in 1175 (which orientates with Edwin's saint's day sunrise).

Further to the above is the presence of a church in Edwinstowe in the Domesday Book. This church and its medieval parish (which covered much of the surrounding villages and landscape) could represent the fossilisation of an early minster site at Edwinstowe (due to its early importance and direct links to St Edwin of Northumbria).

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

All this evidence combined makes it almost certain that Edwinstowe was the home to a medieval cult centred on St Edwin, whose former life as King Edwin of Northumbria came to an end near Edwinstowe in the year 633AD.

As mentioned above local legend states that Edwinstowe church is built on the spot where Edwin's headless body lay after the Battle of Hatfield, and, following his elevation to sainthood the spot where his body had lain became a hallowed place (Zalluckyj 2011, p30). The Battle of Hatfield was fought between the forces of Edwin of Northumbria on one side, and the combined armies of Penda of the Kingdom of Mercia, and Cadwalla of Gwynedd on the other. The battle saw the Northumbrian's defeated and King Edwin killed (Sherley-Price & Latham, p138).

It is just possible that the church in Edwinstowe and its orientation on the sunrise on his saint's day on 12th October (now 19th October) is in fact a very visible reminder of King Edwin of Northumbria (later St Edwin) and his death at the Battle of Hatfield in the vicinity of Edwinstowe in the 7th century.

Figure 1: Edwinstowe church. Imagery©2017 Getmapping plc. Map data ©2017. Google

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

2. Project location, topography and geology

2.1. **Site Location:**

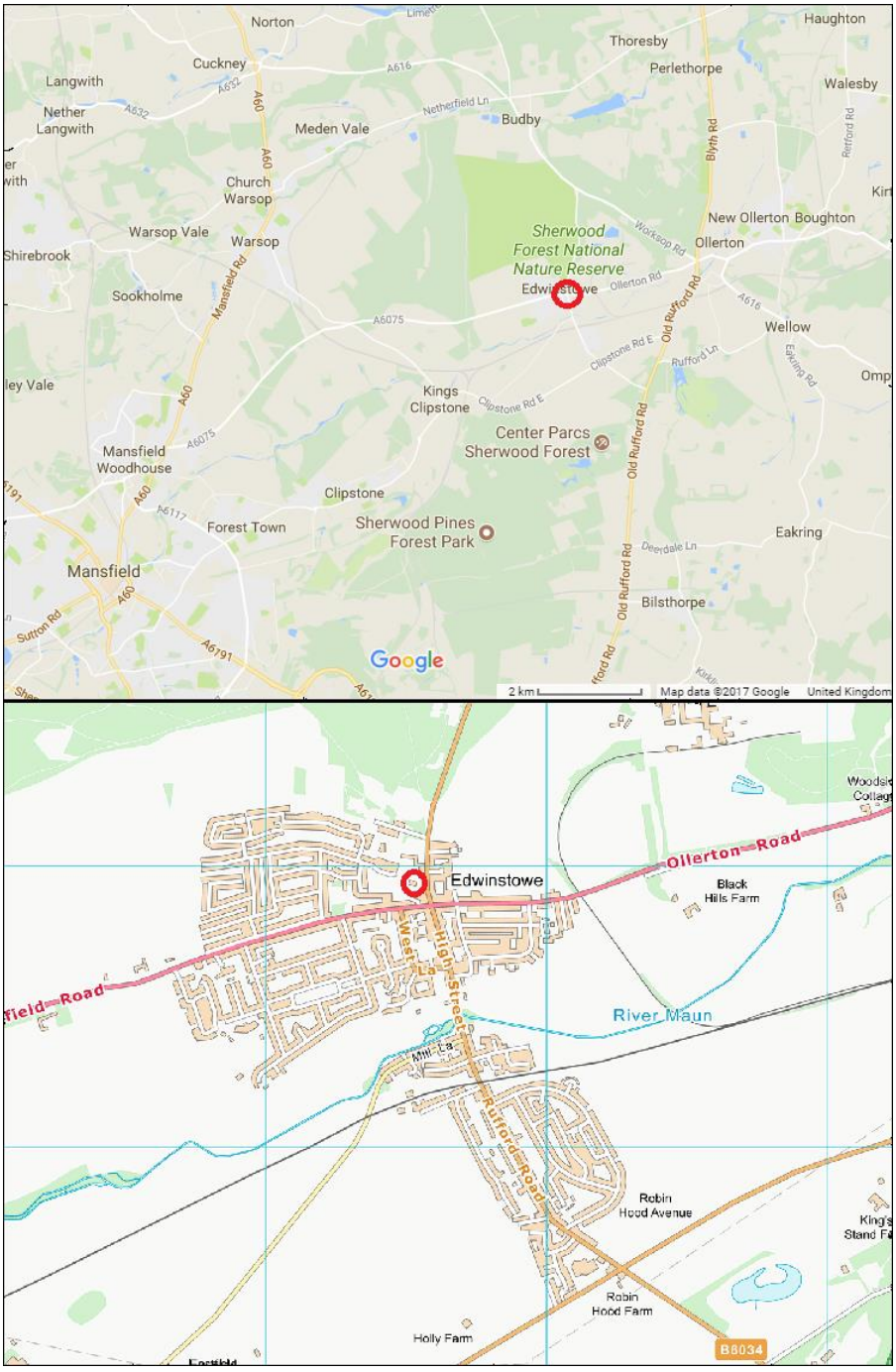


Figure 2: Site Location. Contains OS data © Crown copyright [and database right] 2017.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

2.2 Topography:

The site is located towards the northern end of the village of Edwinstowe. To the north lies the former medieval Crown woodlands of Birklands and Bilhaugh. The ground slopes naturally southwards forming the valley of the River Maun which lies approximately 500m to the south of the church.

The site is over 65 metres above Ordnance Datum Newlyn (ODN) sea level.

2.3 Geology

The British Geological Survey 1:50 000 scale mapping shows the site to be located on the Nottingham Castle Sandstone Formation, which is a Pebbly (gravelly) Sandstone. This Sandstone consists of "*pinkish red or buff-grey, medium- to coarse-grained, pebbly, cross-bedded, friable; subordinate lenticular beds of reddish brown mudstone*" (British Geological Survey). This Sedimentary Bedrock formed approximately 246 to 251 million years ago in the Triassic Period. The local environment at the time of deposition was dominated by rivers; depositing mainly sand and gravel detrital material in channels to form river terrace deposits, with fine silt and clay from overbank floods forming floodplain alluvium, and some bogs depositing peat; includes estuarine and coastal plain deposits mapped as alluvium (www.BGS.ac.co.uk- accessed 19/07/2017).

Just beyond the site to the south, in the river Maun valley the BGS 1:50 000 scale superficial deposits description shows: Alluvium - Clay, Silt, Sand and Gravel. Superficial Deposits

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

formed up to 2 million years ago in the Quaternary Period. Local environment previously dominated by rivers. These rocks were formed from rivers depositing mainly sand and gravel detrital material in channels to form river terrace deposits, with fine silt and clay from overbank floods forming floodplain alluvium (www.BGS.ac.co.uk- accessed 19/07/2017). The alluvium sits to the south, beyond the study area covered by this survey.

3. Archaeological and Historical Background

3.1. Edwinstowe Village and Church

Edwinstowe has been written in a number of ways since its first appearance as *Edenestou* in the Domesday Book of 1086 (Morris 1977, 281b). Various early spellings include *Edenestoua* in 1146, 1163, and 1168, *Edenestowa* 1194, *Ednestowe* 1230, *Edenstow* 1275, *Ednestou* 1276, *Edenstowe* 1287, *Edwynstow* 1300, *Eduinstowe* 1316, *Eddynstowe* 1421, *Edinstow* 1576, and *Edwynstoe* 1625 (Gover, Mawer & Stenton 1940 pp75-6). The meaning of the place-name is discussed in detail in section 7.1 below.

Domesday book lists Edwinstowe as belonging to the King, as a Berewick or outlier of the Crown Manor of Mansfield. There is a church and priest listed. The settlement is diminutive, despite having its own church with only 4 smallholders listed:

Domesday lists:

"1 Carucate of land taxable. Land for 2 ploughs.

A church and a priest and 4 smallholders have 1 plough.

Woodland Pasture ½ league long and ½ wide". (Morris 1977).

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

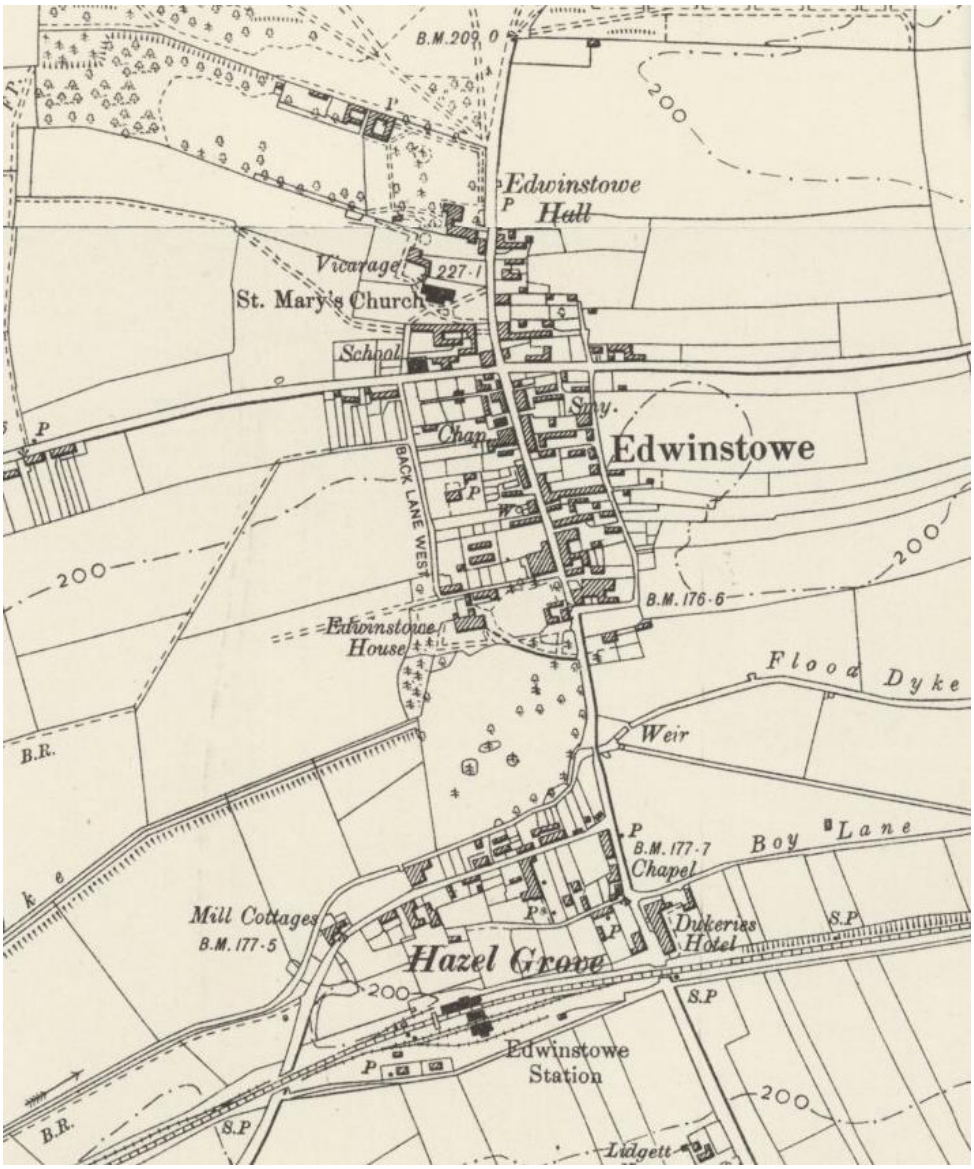


Figure 3: Ordnance Survey map 1900 1:10,560, Edwinstowe Village.

Historic mapping shows a number of historic cores for Edwinstowe, the 1900 Ordnance Survey map in figure 3 shows at least two settlement zones, one to the north focused around the church, and one to the south located along the river Maun (see figure 3).

Archaeological excavations, documentary research, and map regression work in the village by Mercian Archaeological Services CIC undertaken as part of the Sherwood Forest Archaeology Project, has suggested at least three zones of occupation that developed through the medieval period.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

A test pit located outside the north wall of the churchyard in the adjacent property discovered evidence of Saxo-Norman (late 10th-12 century) and Medieval pottery (Gaunt 2014, p20). This would indicate that the area around the church was occupied in the Saxo-Norman period (see below).

An entry from the Forest Eyre of William de Vescy of 1287 lists '*Robertus filius Agneti Bonde de Edenstowe et Ricardus ad capud ville de eadem"* (Robert son of Agnes Bonde of Edwinstowe and Richard of the top of the town of the same) (Boulton 1964, p114). It is likely that Richard's name is a useful indicator of the settlement pattern of Edwinstowe by at least the later 13th century; Richardus '*of the top of the town'* helps show that the settlement may have had more than one recognisable 'zone' by this time, and presumably this 'capud' or 'top' of the town was the topographically higher/ and more northerly part centred on the church.

This '*capud ville*' may have referred to the area around the church.

The name may also have referred to the linear settlement consisting of tofts and crofts extending back from a central street to 'back lanes' on either side, which can be seen to the south of the church (see figure 3). However, excavations to date, suggest that that this linear part of the settlement originated in the 13th- 14th centuries (Gaunt 2014, p20). The only evidence so far discovered in the village pre-dating the 13th century is the pottery discovered in the vicinity of the church. The name '*capud ville'* being used in the 13th century may be too early to refer to the linear toft and croft settlement and may therefore distinctly refer to the '*top of the town'* in the vicinity of the church.

What is clear from the mapping is that further to the south of this part of the settlement is a southern occupation zone centring on the River Maun, where the presence of mills is indicated by '*Mill cottages*' (see figure 3).

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

The Domesday Book does not mention a mill. So, it is possible that the area around the mill developed after this time.

At the time of writing, the excavations by Mercian Archaeological Services CIC have yet to focus on the southern part of the historic village along the River Maun. However, historic documents show that the area by the river was occupied by at least the 13th century, as a *Henricum iuxta aquam de Edenstowe* (Henry by the Water of Edwinstowe) is listed as a Regarder of the Forest in the Eyre of 1287 as part of the Regard of Bassetlaw (Boulton 1964, p156). The same Eyre lists a *Johannem Byyewater de Edenstowe*, as an Agister of the Forest (Boulton 1964 p48), and in 1334 a *William Bythewater de Edwnstowe* is listed as a Regarder in the Forest Eyre of that year (Boulton 1964, p107).

The porous Sherwood sandstones (see geological section above) appear to have dictated that, by the end of the medieval period, settlements in the forest had nucleated to some degree and were focused along the rivers (Gaunt& Wright 2013, p42).

Edwinstowe church is set approximately 500m north of the River Maun, which is somewhat unusual. As stated above, the earliest pottery so far found through excavations by Mercian Archaeological Services CIC in the village come from occupation in the area immediately adjacent to the church yard on the north side. The small number of occupants listed at the time of Domesday, the presence of the church, and the absence of the mill on the river; suggest that the settlement at that time was focused in the immediate vicinity of the church.

It seems therefore likely that the area by the River Maun developed subsequent to Domesday, and evidence from recent excavations so far suggest that the tofts and crofts of the linear central section of the village was developed between the '*top of the town'* and the area '*by the water'* during the 13th – 14th centuries (Gaunt 2014 p19-21).

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

As stated, there is a church listed in Edwinstowe in the Domesday Book of 1086. No fabric from the church mentioned in Domesday is visible, in situ, in the current stone building, at least not above ground level. According to Pevsner St. Mary's church in Edwinstowe is essentially 12th-13th century; "*that is a broad strong w steeple with a broad flat staircase projection on the s side, A small pointed window, on the s, round-headed inside, a tall lancet on the w, so tall that it has a transome (a very unusual detail for the C13), a Norman triplet on the top floor… A plain Norman doorway on the s side of the chancel*" (Pevsner 1951 p65).

The Southwell Church History Project lists the following for the church on their website: "*There is a priest's doorway from the first building phase (c1175-1200) that can be seen from the outside of the chancel.*

The fine sculptured corbel heads on the arches may have been inserted between 1260 and 1280, when 2 light windows were inserted in the north and south walls. One of the heads is said to be of Geoffrey Plantagenet son of Henry II and 'Fair Rosamund', Archbishop of York 1191, and next to it that of Archbishop Thomas Beckett, killed 1170, canonised 1173, who is opposite to that of Henry II.

The Tower which is C12th-C13th has walls 3' thick with an internal measurement of 19' x 18' and a circular stairway within the SE-buttress. Its entrance is inside the church at ground level. It has 2 C13th lancet windows. The west lancet has a transom dividing the length almost equally and is probably a unique architectural feature.

The South Aisle was added c1342-50 by Henry and Robert de Edenstowe as a chantry chapel (Henry was a King's Clerk of some importance, being Canon of Southwell, Lincoln, and Llandaff Cathedrals) … There is a recessed piscina in the South wall with shelf for vessels above the bowl. The south doorway is late decorated or early Perpendicular work.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

The Clerestory Windows are of the Perpendicular period.

The Chancel was partly rebuilt upon the old foundations when the Dean & Chapter of Lincoln were ordered to repair it in 1432". (http://southwellchurches.nottingham.ac.uk/edwinstowe/hhistory.php -accessed 21/07/2017).

These in situ Norman elements (including re-building of the chancel on the earlier footprint in the 15th century); helps suggest that the church tower, nave and chancel have stood on this basic footprint and alignment since at least the rebuild of the later 12th century.

Gill suggest that the church was rebuilt in stone in the second half of the 12th century by Henry II, and seems to attribute this rebuilding of the church to a possible change in the dedication to St. Mary *"About a century after Domesday Survey was made—probably during the long and peaceful reign of Henry II, of whom a contemporary did write: 'a huge lover of woods is he, & when he ceaseth of war he haunteth places of hawking & hunting,'—when Sherwood Forest had become the royal hunting ground of the Angevins, and while the king was still in a mood to propitiate the murder of Becket by church building, the Saxon church, which in a forest district like this would surely have been constructed with oak posts on a stone foundation, gave place to a pretentious stone-built church as being more becoming on the demesne of a king, and this church was dedicated in honour of "St. Marie"* (Gill 1914).

In 1164 Henry II began developing the royal hunting lodge at neighbouring Clipstone (now known as King John's Palace) (Gaunt 2011 p7, Crook 1976), his interest in the area appears to have led to a rebuilding of the church in Edwinstowe in the year 1175.

"Edwinstowe and its Chapelries was given by William II to the Dean and Chapter of Lincoln and is listed in their earliest Charter of 1146". (http://southwellchurches.nottingham.ac.uk/edwinstowe/hhistory.php

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

-accessed 21/07/2017).

The Medieval parish included a large number of the surrounding villages including Clipstone, Carburton, Perlethorpe, Thoresby, Ollerton, Wellow, and Budby:

"*A Lincoln cathedral archives document dated 16 January 1422 records that activities continued in earnest within Clipstone as one of the Chapelries of Edwinstowe. It also clearly links the ecclesiastical parish of Edenstowe with its Chapelries of Carburton, Peveralthorpe, Thoresby, Allerton, Wellagh, Clypston and Budbye together"* (http://southwellchurches.nottingham.ac.uk/clipstone/hhistory.php - accessed 21/07/2017).

It is just possible that these chapelries situated in the villages surrounding Edwinstowe formed a fossilised Anglo-Saxon '*parochia*' centred on Edwinstowe, with the church there acting as a 'mother house'. This could have been a central '*superior church'* linked to the King's Manor of Mansfield. The Multiple Estate centred on Mansfield was an extremely extensive entity across northern Nottinghamshire (Bishop 1981).

The first phase of the *East Midlands Historic Environment Research Framework project: 'ANGLO-SAXON NOTTINGHAMSHIRE'* discusses the subject of possible Parochia in Nottinghamshire and possible links of '*superior churches'* to '*multiple estates'* of the King. Although this discussion does not directly list Edwinstowe as one such parochial, it does state the following on page 7:

"*No Middle Saxon church or monastic sites are known with certainty from Nottinghamshire. However, the association of these with royal centres or estates may provide some clues for future research. Mansfield, Dunham, Southwell and Orston may be particular targets for this, along with Edwinstowe because of its claimed association with Edwin and the battle of Heathfield*"

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

(http://archaeologydataservice.ac.uk/researchframeworks/eastmidlands/attach/County-assessments/NotAngloSaxon.pdf - Accessed 21/-7/2017).

4. Research Aims and Objectives

The project was designed to answer questions raised as part of the Sherwood Forest Archaeology Project.

Mercian Archaeological Services CIC have been researching the Battle of Hatfield in the nearby village of Cuckney alongside *The Battle of Hatfield Investigation Society*. Mercian are also undertaking long term research at the neighbouring site of King John's Palace on behalf of the site owners there. Andy Gaunt identified the landscape of Clipstone as a designed romantic medieval royal landscape (Gaunt 2011). Part of this landscape includes a chapel dedicated to St. Edwin. The chapel site is under continuing fieldwork investigation by Mercian Archaeological Services CIC. Mercian are also undertaking excavation and long-term investigations into settlement development in the village of Edwinstowe, and long-term research into the medieval landscape of the wider Sherwood Forest.

The above research as part the Sherwood Forest Archaeology Project has led to observations regarding the orientation of the church in Edwinstowe.

The combined knowledge gained from long term research in the area has led to the hypothesis that the church in Edwinstowe may have been orientated on the sunrise on October 12th in medieval times due to associations with King Edwin of Northumbria and the Battle of Hatfield.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

This project was designed to investigate that hypothesis.

The project is also designed to cast light upon the possible origin of Edwinstowe church (possible 7th century? Parochia) to tie in with the following research agendas as listed in the *East Midlands Heritage, An Update Research Agenda and Strategy for the East Midlands*:

"*6.6 Early Medieval (c. AD 210 – 1066): Updated Research Agenda's*

"6.2 Ritual and Belief

6.2.6. How can we enhance our understanding of the development of pre-Viking churches, cathederals and monasteries?"

"6.4 Rural Settlement Patterns (Knight, Vyner & Allen 2012, p 82).

If an early origin for the church can be suggested then this could provide information relating to:

6.4.3. Can spatial and temporal variations in the morphology, functions and status of settlements be defined more precisely?

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

5. Methodology

5.2.1. **Topographic survey methodology**

5.2.1.1 **Equipment**

The survey was undertaken using differential survey grade Global Positioning System (GPS), combined with Electronic Distance Measuring Total Station. The GPS system used was a Leica GPS Viva enabled to use Smartnet technology. This GPS system operates using Differential GPS (DGPS), where corrections are made to errors in the location data received from the satellites. The GPS rover was set to record static points, and the Total Station was used to allow recordings where satellite link was absent as recommended in Ainsworth, S. & Thomason, B. (2003). The DGPS device is mounted on a 2-metre-high carbon fibre pole. The height of the pole is entered into the DGPS. The DGPS is therefore held by the operator 2m above the ground to help improve communication with satellites and mobile phone signals. The DGPS records its location in 3D, receives corrections from a remote source to correct its location, and then removes the 2m staff height before recording and storing its location in a data logger.

The Total Station used was a *Leica TS06 plus*.

5.2.2.2. **Control of survey**

'Control is the accurate framework of carefully measured points within which the rest of the survey is fitted' (Ainsworth, et al. 2007). Section 2.1 Control of Survey in Metric Survey Specifications for English

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

Heritage (Lutton 2003) states that metric survey 'must provide reliable and repeatable control capable of generating the required coordinates within the tolerances stated' (Lutton 2003). As well as falling within the accepted tolerance levels, this technique also fulfils the requirement that the control must be repeatable.

5.2.2.3. **Topographic survey method**

The survey was undertaken using subjective survey techniques. Static points were recorded by Differential GPS around the site to act as control points and station locations for subjective survey using Total Station (see figure 4). The outline of the church building was then recorded using the Total Station.

5.2.2. **Data preparation and analysis.**

All survey data was processed in QGIS Geographic Information Systems (GIS) software.

Horizon software version 0.11b, "*a GIS tool designed for archaeoastronomers investigating alignments of prehistoric monuments with astronomical phenomena (e.g. rising and setting of the Sun, Moon and stars)*" (http://www.agksmith.net/horizon/ accessed 15/05/2017), was used to accurately calculate the horizon profile for Edwinstowe using DTM (Digital terrain Model)/ DEM (Digital Elevation Model) mapping data.

This software created a 3D Horizon using CGIAR-CSI (Consultative Group for International Agricultural Research - Consortium for Spatial Information) SRTM (NASA Shuttle Radar Topographic Mission) 90m version 4.1 dataset (Jarvis, A., H.I. Reuter, A. Nelson, E. Guevara,

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

2008, Hole-filled SRTM for the globe Version 4, available from the CGIAR-CSI SRTM 90m Database (http://srtm.csi.cgiar.org).

This data was centred on the Longitude and Latitude co-ordinates for Edwinstowe church, and the resulting dataset was exported to Stellarium Software version 0.15.2.

Stellarium software is a free open source computer based Planetarium software package that shows a 3D simulation of the night sky. Stellarium renders 3D photo-realistic skies in real time with OpenGL. It displays stars, constellations, planets, nebulae and others things like ground, landscape, atmosphere, etc. (https://sourceforge.net/projects/stellarium/ accessed 20/07/2017).

Stellarium software automatically accounts for the change from the Julian to Gregorian Calendar in 1582.

(http://aa.usno.navy.mil/data/docs/JulianDate.php accessed 15/05/2017).

5.2.3 Solar Astronomy

"*With the advance in astronomical software it is possible to see the sky as it would have appeared for any date in antiquity. This is because the heavens are governed by physical laws so the solar, lunar, planetary and stellar movements can be predicted retrospectively with a high degree of accuracy*" (Henty 2015, p27). Visual reconstructions can now be produced for any latitude and longitude and any azimuth in the world (Henty 2015, p27).

The movement of astronomical objects is accurately recorded, and can be displayed from any location on Earth, with their apparent movements in relation to the movement of the Earth being tracked. The Earth travels around the Sun yearly, and spins on its axis daily.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

From the position of the Earth the Sun appears to move through the sky in a predicable motion. This is of course caused by the movement of the Earth and not the other way around. This results in a phenomenon where the Sun appears to rise towards the east and set towards the west each day.

The Earth is tilted on its axis at an angle of 23.5° with respect to the Ecliptic (the Ecliptic is the apparent path of the Sun's motion on the celestial sphere as seen from Earth). As a result, the Sun appears to follow an arc through the sky when observed from Earth. Due to this tilt of the axis, the Earth's movement around the Sun over the course of the year results in the seasonal variations experienced. This results in the northern hemisphere summer being the time when the northern hemisphere is orientated towards the Sun, and the northern hemisphere winter being the time when the axis is orientated away from the Sun.

As a result of the Earth's axis tilting towards the Sun in the northern hemisphere summer and away from it in the winter; the Sun appears to move from north to south and back again over the course of the year, as well as the apparent movement from east to west on a daily basis. The Sun reaches its highest altitude (the angle above the line of the equator) in the northern hemisphere during the summer and the lowest altitude in the winter.

At the point at which the northern axis of the Earth is pointed towards the Sun, the Sun rises at its most north-easterly location, and reaches the most northerly point in the sky overhead (altitude), before setting at its most north-westerly location. This is the northern hemisphere summer solstice. It is conversely the southern hemisphere winter solstice. The point at which the northern axis of the Earth is pointed away from the Sun, the Sun rises at its most south-easterly location, and reaches the most southerly point in the sky overhead (lowest altitude), before setting at its most south-westerly location. This is the

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

northern hemisphere winter solstice. It is conversely the southern hemisphere summer solstice.

At these two times, the Sun's motion from north to south and vice versa appears to slow to a standstill. This is where the name Solstice comes from the Latin *'solstitium'*, from sol 'sun' + stit- *'stopped, stationary*' (https://en.oxforddictionaries.com/definition/solstice accessed 15/05/2-17).

Following the summer solstice, the Sun appears to begin progressing southwards across the sky, progressively rising and setting further to the southeast and southwest respectively, and following the winter solstice the pattern is reversed with the Sun appearing to move northward, progressively rising and setting further northeast and northwest respectively.

When the Earth is either quarter or three quarters of its yearly journey around the Sun (or half way between the solstices), the Earth's axis is orientated parallel to the Sun, and day and night are both 12 hours long. These two dates in March and September are known as the Vernal (Spring), and Autumnal equinoxes respectively. Following the equinoxes, the Sun appears to continue its march toward the solstice.

This pattern means that the location of the sunrise for any day of the year can be predicted on the eastern horizon. In the northern hemisphere, all dates before the Vernal equinox (currently March 20th) will see the Sun rise south of east, and all days after the Vernal equinox up until the summer solstice will see the sunrise to the north of east. The relative distance each way is dependent on the date. The same is apparent for sunset, with the Sun setting towards the south of west on dates prior to Vernal Equinox and to the north of west on dates after.

The pattern is reversed for the following six months with dates before the Autumnal equinox seeing the sunrise north of east and sunset

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

north of west, and dates after the Autumnal Equinox seeing the sun rise to south of east and set south of west.

5.2.4. Problems inherent in analysing the Alignment of Churches

The orientation of medieval churches has been discussed on many occasions (Hoare 2014; Hoare & Sweet 2000; Hinton 2010, Hinton 2006) and historically many aspects have been suggested including orientation to the east for liturgical reasons, or reasons of Christian religious belief; that they faced Jerusalem; that they faced the sunrise on the date of construction; or that they faced the sunrise on the patron saints' day (Hinton 2010 p2). Hoare and Sweet state in their 2000 paper '*The orientation of early medieval churches in England*' that "*Christian churches in western Europe, with notable exceptions, chiefly in Italy, are broadly in alignment with east. It has been asserted that the many buildings which are not oriented sensu stricto are aligned with sunrise on the feast day of the saint to whom they were originally dedicated, one of the solstice days, the day the foundations were prepared or on 1 May. Rodwell, however, believed that these structures were accommodated within the existing townscape or landscape*" (Hoare & Sweet 2000 p162).

Their study of Early medieval (seventh to early twelfth century) churches in central and southern England showed that Early Medieval Churches "*display an average alignment which is close to true east ($\bar{x}$=88°T, n=183). This near liturgically-correct orientation can only have been achieved by astronomical means. Sixty-two per cent of the measured buildings lie within the range 80°–100°T; such relatively minor discrepancies may be due largely to foundation setting-out errors. A considerable proportion of those churches which*

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

deviate significantly from true east were probably established on sites which were constrained by older structures in towns, and perhaps by the natural topography in rural areas" (Hoare and Sweet 2000, p162).

There are usually many complications and problems associated with determining the reasons for the orientation of churches including calendar drift, horizon elevation, problems determining the date of construction of the church, and problems with the historiography of church dedication (Hinton 2010).

Calendar drift is caused by the Julian Calendar and the difference between the calendar date and the solar date, which progressively increased over time. This was corrected by the change to the Gregorian Calendar introduced in the 16th century in Catholic countries. By 1582 the Julian Calendar had created ten days of drift, and so in order to fix this problem Pope Gregory declared that the day after the 4th of October 1582 should be the 15th of October 1582, thus correcting the error. This change was not universally applied across countries, and Britain did not adopt the changes until the 18th century (https://www.nottingham.ac.uk/manuscriptsandspecialcollections/researchguidance/datingdocuments/juliangregorian.aspx - accessed 26/08/2017, the webpage provides a succinct description of the phenomenon and is worthy of viewing).

The following table is taken from the University of Nottingham Manuscripts and collections page on their website (https://www.nottingham.ac.uk/manuscriptsandspecialcollections/researchguidance/datingdocuments/juliangregorian.aspx - accessed 26/08/2017) it provides the calculations applicable for the number of days that had to be added to the Julian Calendar dates when different countries moved at different dates to using the Gregorian Calendar:

- *"After 5th October 1582 add ten days to the Julian Calendar*

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

- *After 28th February 1700 add eleven days to the Julian Calendar*
- *After 28th February 1800 add twelve days to the Julian Calendar*
- *After 28th February 1900 add thirteen days to the Julian Calendar"*
  (https://www.nottingham.ac.uk/manuscriptsandspecialcollections/researchguidance/datingdocuments/juliangregorian.aspx -accessed 26/08/2017).

"*In Great Britain, the new calendar was adopted in September 1752. In order to deal with the discrepancy of days, which by now had grown to eleven, it was ordered that 2nd September 1752 would be immediately followed by 14th September 1752. This led to crowds of people on the streets demanding, 'Give us back our 11 days!' It also explains why our financial year begins on 6th April. The official start of the year used to be Lady Day (25th March), but the loss of eleven days in 1752 pushed this back to 5th April. Another skipped day in 1800 pushed it back again to 6th April*" (https://www.nottingham.ac.uk/manuscriptsandspecialcollections/researchguidance/datingdocuments/juliangregorian.aspx -accessed 26/08/2017).

By this rule the 12th of October eventually became the 24th October in the Gregorian Calendar.

However, to complicate things further, when searching for possible alignments in a building it is necessary to know when a structure was built. When Britain adopted the Gregorian Calendar, this effectively put the dates back to where they would have been if the Julian Calendar had been correct. However, by the date of construction in the 12th century the calendar had already drifted by seven days. As a result, a building aligned on the 12th of October in the 12th century will

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

have a seven-day variance with the date following the correction, and will therefore align with the 19th October in modern times. The seven days of drift which had accumulated by the 12th century is therefore fossilised in the alignment of the building. This alignment variation is only in relation to the calendar date, and not to astronomical events themselves. It only affects alignments based on a particular date, such as sunrise on a particular saint day. It does not affect Solstice or Equinox alignments.

"*The calendar change has a particular impact when sunrise on a specific date, such as a saint's feastday, is considered, as the sun appears at a different place on the horizon today from where it did on the same calendar date in the year that the church was set out. During the period between the middle of the tenth century and the middle of the fourteenth century, when most churches were being built, the error grew from six days to nine days (Duncan 1999, 41-52). The difference between a specific date in the twelfth century, a period of much church building, and the same date today, is approximately seven days – sunrise, according to the calendar date, occurring effectively seven days earlier then*" (Hinton 2010 pp15-16). This is discussed further in section 7.1 below, in relation to the Orthodox calendar dates for St Edwin's saint day, and the difference to the Gregorian Calendar.

As stated previously Stellarium software automatically accounts for the change from the Julian to Gregorian Calendar in 1582. (http://aa.usno.navy.mil/data/docs/JulianDate.php accessed 15/05/2017).

There is a possibility that the church at Edwinstowe was orientated on magnetic East. Hoare and Sweet demonstrate that the magnetic declination (the difference between true north and magnetic north) increased from 8°E to 28°E between 800AD and 1000AD, and then slowly decreased to 20°E by 1100AD. However, they also

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

demonstrate in their examination of the orientation of 181 churches in central and southern England that the churches in their study were centred on true, rather than magnetic, east. They go as far as to suggest there is no evidence for the use of magnetic east in their survey data (Hoare & Sweet 2000).

Other explanations include Hinton's findings which show that where churches are built on sloping sites, their chancels are found to be downhill-facing (Hinton 2008).

In relation to church *Alignment with the position of sunrise on a particular day,* Hoare and Sweet list the following (which they refer to as) '*imponderables*':

(1) In only a very few cases can the early medieval dedication of a church in our survey be verified. Furthermore, certain saints have several feast days, although one is usually more highly regarded than the others.

(2) Calculation of the sunrise position is only reliable for level sites with an unimpeded view of the eastern horizon. Intervening land masses, woods and buildings will delay the (apparent) sunrise, perhaps by as much as 20°. Conversely, the sun will appear earlier than is indicated in tables, and thus farther to the north, on hill-top sites with a low, distant horizon.

(3) Relatively minor differences in the position of sunrise are given by the various 'proper moment of observation' strategies: 'first flash' (when the upper limb of the sun just appears above the horizon), exposure of half the sun or 'whole orb'. (Hoare & Sweet 2000 p168).

They conclude that: *"Despite these considerable uncertainties, a general test of the sunrise proposals may still be undertaken. The festival dates of saints known to have been favoured by early medieval dedications are distributed throughout the year; more significantly, several occur when sunrise is close to the limits of the*

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

solar arc. Thus, we would have recorded a much more widely dispersed set of data if the measured churches had been aligned with sunrise on the patronal festival day. Similarly, we may reject the suggestion that sunrise positions at the summer (>21 June) and winter solstice (>21 December) and on 1 May are preserved in the orientation of the buildings in our survey. We therefore contend that the widespread and time-honoured support for the various sunrise models is misplaced (although an occasional building may have been so aligned)" (Hoare & Sweet 2000, p 168).

These points raised by Hoare and Sweet and others have helped to shape the methodology of this project in order to eliminate many of the problems associated with understanding potential church orientation.

The methodology used Differential GPS and EDM Total Station to record terrestrial points onsite. These were tied into Ordnance Survey Grid Reference and orientated on grid north. This removes any problems inherent in earlier survey methods used in the past for determining church orientation which often consisted of the use of holding a liquid-filled magnetic compass against the wall of a church, (Hoare & Sweet 2000 p164).

Point 1 above regarding the dedication of the church is not seen to be problematic, as the medieval dedication of the church of St Mary can be ignored. It is presumed here that if the orientation were deliberate then the dedication to St Edwin dates back to the formation of the church and his death on the 12th October 633 or to a later date (pre-1175) when the date was recognised as his saint day and the church was built.

It is likely if the orientation is deliberate that the angle could have easily been achieved in Saxon times as *"It is evident from Bede's (672/673–735) writings that early medieval folk in England possessed a significant knowledge of astronomy"* (Hoare & Sweet 2000, p166).

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

The methodology includes the local horizon to allow accurate astronomical predictions and also includes a number of the phases of sunrise to address points 2 and 3.

Edwinstowe is likely to have developed around the church and was only a small settlement of a few houses by the time of Domesday Book and so the alignment of the church is unlikely to have been affected by surrounding buildings.

The effects of Calendar drift have been countered through the use of Stellarium software.

In order to test the likelihood that the church at Edwinstowe is orientated on the saint day of St Edwin on the 12th October on the anniversary of his death, at the time of the rebuilding of the church in the year 1175, it is important to state that Hoare and Sweet do suggest that *"an occasional building may have been so aligned"* (Hoare & Sweet 2000, p 168).

Peter Hoare states that "*the arrangement of relatively few structures has been explained beyond reasonable doubt, and tests of the overwhelmingly popular festival orientation theory are often insufficiently rigorous to provide convincing answers*" (Hoare 2014, p1712). The aim of the methodology created for this project is to provide the sufficiently rigorous data collection and testing called for by Hoare to enable a serious discussion regarding the popular festival orientation theory to which he refers.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

5.3. **Archiving and reporting:**

5.3.1. **OASIS**

An OASIS entry pertaining to the work has been created. The OASIS identifier for the project is OASIS ID - merciana2-293805.

5.3.2 **Historic Environment Record**

A copy of the report has been logged with the Nottinghamshire Historic Environment Record (HER).

5.3.3. **Public Dissemination online**

Mercian Archaeological Services CIC also publish free downloadable versions of this report via our website at http://www.mercian-asco.uk/publications.html

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

6. Results

The results from the Total Station and DGPS survey of the outline of the church can be seen in figure 3 below. The survey has shown the church to be orientated at an azimuth of 106.5˚. This confirms approximate observations by the author regarding the azimuth of the church orientation as seen in aerial photography (see figure 4).

Figures 5 to 12 show the past and predicted sunrises on certain days in the past; October 19th 2017 (figures 5 and 6), October 12th 2017 (figures 7 and 8), October 12th 1175 (figures 9 and 10), and October 12th 633 (figures 11 and 12).

These figures were produced in Stellarium Software version 0.15.2., with Horizon software version 0.11b.

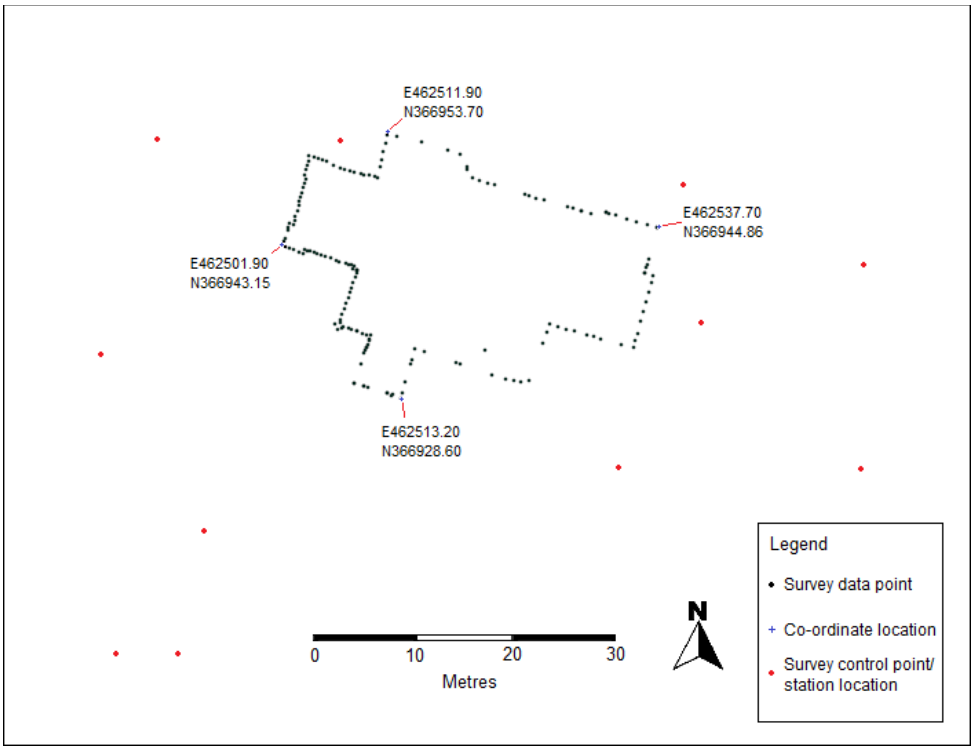


Figure 4: Results from topographic survey

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

Figure 5: The alignment of Edwinstowe church at an Azimuth of 106.5°. Imagery ©2017 Getmapping plc. Map data ©2017. Google.

Taking a line through the centre of the nave on the long axis, the church has an orientation (deliberate or otherwise) at an azimuth of 106-7°. The western end of the church is orientated at 286-7°.

Figure 6: Stellarium Software predicted sunrise centred on Edwinstowe showing local horizon from 3D DTM, Sun breaking the horizon at 106° on 19th October 2017 at 6:40am on alignment of Edwinstowe church.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

Figure 7: Stellarium Software predicted sunrise centred on Edwinstowe showing local horizon from 3D DTM, Sun clearing the horizon at 107° on 19th October 2017 at 6:44am on alignment of Edwinstowe church.

Figure 8: Stellarium Software predicted sunrise centred on Edwinstowe showing local horizon from 3D DTM, Sun breaking the horizon at 102° on St Edwin's Day 12th October 2017 at 6:27am.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

Figure 9: Stellarium Software predicted sunrise centred on Edwinstowe showing local horizon from 3D DTM, Sun clearing the horizon at 103° on St Edwin's Day 12th October 2017 at 6:32am.

The figures above show the current sunrise date on the alignment of Edwinstowe church, and the azimuth for the current sunrise on St Edwin's Day. The sunrises 7 days later than St Edwin's day on the alignment of Edwinstowe church (see section 5.2.4 on church alignment and calendar drift above).

Edwinstowe is an interesting church to study, because we know when the church was rebuilt in stone (see above) in Norman times (circa 1175) and we know that the church was dedicated to St Mary, but there is a possibility that the name dedication began in circa 1175 (Gill 1914).

We also know that there is a link to St Edwin of Northumbria in the village dating back to the origin of the place-name, and a possible cult of St Edwin with references from medieval times to the practice of keeping vigils and honouring the saint day of St Edwin on the 12th October (discussed in section 7 below).

The following figures show the reconstructed sunrise for the 12th of October 1175. The Sun breaks the horizon at 106° azimuth on the local horizon at approximately 6:35am (see figure 9) and clears the horizon at 6:39am at 107° azimuth.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

Figure 10: Stellarium Software reconstructed sunrise centred on Edwinstowe showing local horizon from 3D DTM. The Sun breaks the horizon at 106° at 6:35am on 12th October 1175.

Figure 11: Stellarium Software reconstructed sunrise centred on Edwinstowe showing local horizon from 3D DTM. The Sun clears the horizon at 107° at 6:39am on 12th October 1175.

It would appear from the reconstructions above that Edwinstowe church has an orientation (deliberate or otherwise) on the sunrise of the 12th of October in 1175. With the sunrise on that date occurring between 106° and 107° Azimuth.

The following figure shows the reconstructed sunrise for the 12th of October 633AD. The Sun breaks the horizon at 104° Azimuth on the local horizon at approximately 6:31am.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

Figure 12: Stellarium Software reconstructed sunrise centred on Edwinstowe showing local horizon from 3D DTM. The Sun breaks the horizon at 104° at 6:31am on 12th October 633.

Figure 13: Stellarium Software reconstructed sunrise centred on Edwinstowe showing local horizon from 3D DTM. The Sun clears the horizon at 105° at 6:35am on 12th October 633.

Problems caused by differences in the passage of time in the Julian Calendar in relation to astronomical time, resulted in calendar drift that saw eleven days of error between calendar dates and astronomical dates by the time the problem was addressed in Britain in the 18th century with the adoption of the Gregorian Calendar (see methodology section above). The angle of sunrise observed on the 12th October 2017 of 102˚-103˚ is the same angle of sunrise that would have occurred on the 12th October when the Julian Caledar was introduced in 43BC. Subsequent drifting occurred over the following centuries, with the calendar time moving ahead of the

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

astronomical time. As a result, by the year 633AD the angle of sunrise observed from Edwinstowe on the 12th October would have been at 104˚-105˚. By 1175 the above measurements show the angle of sunrise was observable at 106˚-107˚, as by this time the calendar had drifted by 7 days. By circa 1750 the calendar had drifted by eleven days resulting in an angle of sunrise on the 12th of October of 108˚-109˚. The calendar was subsequently reset in 1752 (see methodology section above) with the addition of eleven days. This effectively reset the calendar dates to their original position in relation to astronomical orientations, and future-proofed those alignments. The results in figure 8 and 9 therefore show not only the current angle of sunrise on the 12th October in the Gregorian Calendar, but also the angle of sunrise before the problems of calendar drift in the Julian Calendar. The church at Edwinstowe has an orientation on the sunrise on the 12th October in the year 1175, which at that time was located at 106˚-107˚. With the calendars and angles reset with the implementation of the Gregorian Calendar, the church at Edwinstowe still points at the sunrise at 106˚-107˚, but instead of this being the 12th of October as it was when the church was built in 1175, it is now the angle of sunrise on the 19th of October. This is in effect a fossilisation of the seven days of drift which had occurred when the church was constructed.

7. Discussion

The results of the survey, undertaken as part of this project, has shown that St Mary's church of Edwinstowe has an orientation (deliberate or otherwise) at an azimuth of 106.5˚. Astronomical calculations have shown that this orientation results in the church facing towards the sunrise on the 19th October at the current time (2017). Archaeoastronomical calculations have shown that an orientation of 106˚-7˚ would have resulted in the church pointing towards the sunrise between 106˚-7˚ on the 12th October in the year 1175 (and the years either side of this).

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

These results may, of course, be entirely co-incidental.

Hinton's findings (Hinton 2008) show that where churches are built on sloping sites, their chancels are found to be downhill-facing. It is possible that the overall slope of the site is slightly towards the southeast. The site of the church drops by 3 metres from west to east over a distance of 60 metres, and by 1 metre from north to south across a distance of 40 metres. This is a slope of 1 in 20 metres (1:20m) from west to east and 1 in 40 metres (1:40m) north to south. If the site sloped at 1:20m north to south and 1:20m west to east then the site would have a slope orientated to the southeast (135˚). A slope of 1:40m north to south by 1:20m west to east will result in an overall slope orientation of 112.5˚. If the preference for a downward facing chancel is the reason for the orientation, there is a possibility that the church orientation is responding to this slight drop in elevation, but it does not account for the exact angle of the slope at 106.5˚.

There is of course no way of ascertaining a deliberate orientation without written records of such a decision, and ascribing meaning to an orientation is fraught with difficulties. Much recent work has thrown doubt on the alignment of churches on saint day sunrises (Hinton 2006 & 2010), see above discussions in the methodology section above).

However, the village of Edwinstowe can be suggested to be a possible exception to such rules. The amount of evidence, documented and circumstantial, combined with place-name evidence makes the chance of an accidental or unintended orientation seem extremely unlikely.

These factors are therefore discussed below alongside their potential importance.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

7.1. Evidence of a Medieval Cult of St Edwin in Edwinstowe

This report presents evidence in support of a medieval cult of St Edwin, in Edwinstowe in medieval times. The first clue to this cult is seen in the 14th century in the form of the keeping of a vigil and subsequent saint day for St Edwin, and an annual fair on these days.

The Calendar of the Charter Rolls preserved in the Public Record Office: 1226-[1516] Volume v. 5. 15 Edward III - 5 Henry V, A.D. 1341-1417, states that on the 29th of November 1380 King Richard II while at Northampton issued a: "*Grant, of special grace, to the tenants of the king's town of Edenestowe within his forest of Shirwood, which town the said tenants hold at fee farm, that they and their successors, farmers of the said town, shall have yearly a fair there on the vigil of and the day of St Edwin the King, in aid of their said farm*."

This reference shows that the villagers of Edwinstowe held a vigil and fair in the village over the night before St Edwin's day from at least the year 1381.

St Edwin's day is celebrated on the 12th October by the Catholic Church (http://www.catholic.org/saints/saint.php?saint_id=625 accessed 15/05/2017). It should be noted, that the Orthodox Church celebrates the saint day of Edwin on the 25th October, apparently contradicting the Catholic Church's date of the 12th October. However, this difference is yet another example of calendar drift, and is not, in fact, a contradiction regarding the original dating of Edwin's saint day.

The Orthodox Calendar is linked to the Julian Calendar, which originated in 43BC with Julius Caesar. It was later corrected during the sixteenth century by Pope Gregory XIII in order to address the

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

ever-increasing difference between calendar time and calculated astronomical time. Britain adopted the Gregorian Calendar in the 18th century by which time 11 days of drift had occurred. By the time it was adopted by the Orthodox church 13 days of drift had accumulated (https://www.goarch.org/-/the-calendar-of-the-orthodox-church accessed - 20/08/2017). The Orthodox calendar is 13 days behind the Gregorian Calendar, hence the 25th October in the Gregorian calendar is the date that correlates to the 12th October in the Orthodox calendar. The 'New' Orthodox Calendar which came into being in the 20th century, to recognise the Gregorian Calendar, states St Edwin's day is the 25th October in the Gregorian Calendar, which is the equivalent of the 12th October in the Old Orthodox Calendar. A detailed account of the difference between the Gregorian and Orthodox calendars can be seen at *the Greek Orthodox Diocese of America* website at https://www.goarch.org/-/the-calendar-of-the-orthodox-church).

In short, the Orthodox Church also recognises the saint day of Edwin as being the 12th October according to the Julian Calendar. The Catholic Church now uses the adjusted dates in the Gregorian Calendar instead of their equivalent dates in the preceding Julian Calendar.

The assumption therefore is that by the time a church was established in Edwinstowe the date of the 12th of October in the Julian Calendar was recognised as his saint's day.

An annual fair was therefore held on the 12th October, and on the preceding vigil night at least until the year 1420, where it is confirmed. (http://southwellchurches.nottingham.ac.uk/edwinstowe/hchyard.php - accessed 21/07/2017).

The 12th of October is of significance regarding St Edwin, as this is ascribed by Bede in his great work: '*A History of the English Church and People'* as the date of King Edwin's death "*In a fierce battle on*

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

the field called Haethfelth on the twelfth of October 633" (Sherley-Price & Latham, p 138). This is slightly contradicted by the Anglo-Saxon chronicle which gives the date as 14th October (Garmonsway 1975, p25), however the date given by Bede is the one recognised as the official date for St. Edwin's saint day.

The saint day of St Edwin therefore is celebrated to coincide with the date given by Bede for his death as the Battle of Hatfield in the year 633 (Sherley-Price & Latham 1979, p138).

The Grant of Special Grace from 1381 suggests that the people of Edwinstowe believed that there was a link between their village and the 7th century Northumbrian King, and the saint day celebrating his death, by at least as early as the year 1381. This is significant for a number of reasons, which are outlined below.

Firstly, the place-name of Edwinstowe has not always been ascribed with certainty by modern scholars to a derivation relating to King Edwin. Edwinstowe has been written in a number of ways since its first appearance as *Edenestou* in the Domesday Book of 1086 (Morris 1977, 281b). Various early spellings include *Edenestoua* in 1146, 1163, and 1168, *Edenestowa* 1194, *Ednestowe* 1230, *Edenstow* 1275, *Ednestou* 1276, *Edenstowe* 1287, *Edwynstow* 1300, *Eduinstowe* 1316, *Eddynstowe* 1421, *Edinstow* 1576, and *Edwynstoe* 1625 (Gover, Mawer & Stenton 1940 pp75-6).

The place-names of Nottinghamshire book lists the possible derivation of the name Edwinstowe to the personal name '*Edin'* or '*E(a)din'*. However due to the proximity of a *St Edwin's chapel* in the neighbouring lordship of Clipstone, the authors go on to say:

"*This may well be correct but in the case of Edwinstowe the matter is somewhat complicated by the presence of a chapel of St Edwin. Unfortunately, we do not know how old this foundation is but stow-names are very often compounded with saints' names and it would*

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

be an improbable coincidence if a place first named after one Eadin came quite by chance to be associated with St Eadwine. The chapel of St Edwin is probably a trace of the cult of Edwin, King of Northumbria, killed in the battle of Hatfield in 632. The cult, which was never general, probably arose very early, and the compound Edenestow may well preserve an ancient hypocoristic form of the King's name" (Gover, Mawer & Stenton 1940, p76).

Gover, Mawer & Stenton come to the assertion that the place name relates to King Edwin, via the fact that St Edwin's chapel is located in the neighbouring lordship of Clipstone, and the possibility that this represents the presence of a cult of St Edwin in the area centred on Edwinstowe.

The 1381 grant provides further compelling evidence to support this theory of a cult of St Edwin in Edwinstowe in the medieval period.

As stated, the evidence for a medieval cult is suggested by Gover, Mawer & Stenton due almost entirely to the presence of a *Chapel of St Edwin* in the neighbouring lordship of Clipstone. St Edwin's Chapel was endowed by King John in 1205: where a *"Capella Sci Edwini in Haya de Bircwde"* is mentioned (Rotuli Litterarum Clausarum, vol. 2, 1833-44, from Gover, Mawer & Stenton 1940, p75). The chapel and its associated hermitage are subsequently mentioned in a list of repairs in the 1315 Calendar of the Close Rolls AD 1313-1318 (EDWARD II) [1893]), in 1350 (Calendar of the Close Rolls, Edward III, Vol. 12. 1364-1368 [1910]), and in 1360 (Colvin Vol II p 920). The location of the chapel was marked on the northern edge of Clipstone lordship on the 1630 map of Clipstone made by William Senior of William Cavendish Earl of Newcastle (photographic copy Nottinghamshire Archives CS/1/S) and in a sketch map of c1606 (photographic copy Nottinghamshire Archives WP/5/S) (A discussion of the maps which include the location of St Edwin's chapel can be

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

seen in Gaunt 2011). St Edwin's chapel will be discussed further below.

There is of course a chance that this cult is a high medieval construct, but it is argued here that the Grant of 1381, and the location of the nearby chapel is extremely strong evidence in support of Edwinstowe meaning Edwin's "*Holy Place*". This would suggest a direct link to the name to King Edwin of Northumbria, which makes the Oxford Dictionary of English Place Names entry for Edwinstowe: "*Edenestou 1086 (DB) 'Holy place of St Ëadwine'. OE pers name plus stõw*" proven beyond any reasonable doubt.

All of the combined evidence now linking King Edwin of Northumbria to Edwinstowe in Nottinghamshire, including; the place-name Edwinstowe meaning of "*Edwin's Holy Place*", the presence a cult of St Edwin in Edwinstowe in medieval times, the keeping of a vigil and the celebration of the saint day of St Edwin of Northumbria on the 11th (vigil) and 12th of October (saint day, and anniversary of King Edwin's death at the battle of Hatfield in 633), the presence of a Chapel of St Edwin in the neighbouring lordship of Clipstone, and the orientation of the 12th century church suggested by this report; now make the area of Edwinstowe and its surroundings the only realistic candidate for the location of the 7th century Battle of Hatfield.

7.2. Edwinstowe, King Edwin and the Battle of Hatfield

It should be noted that at the present time the battle of Hatfield is still suggested to have taken place in or around the village of Hatfield in Yorkshire. However, the tradition linking the battle with the Yorkshire village seems to date back to Camden in the 16th century (Revill 1975,

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

p41). Revill suggests Camden was merely making an intelligent guess based on place-names (John Leyland writing before Camden made no mention of the battle there) which was subsequently built on by 17th and 18th century antiquarians (Revill 1975, p41-43). Revill discusses the contributions in particular of the 17th- 18th century antiquarian parson of Hatfield (Yorkshire) Abraham de la Pryme, who despite his support for the link of Hatfield in Yorkshire with the battle actually ceded in a letter to a Leeds Historian Ralph Toresby, that the battle was in fact staged in Edwinstowe; "*the pretended battle of King Edwin at our Hatfield which I have since found belongs to Edwinstowe [sic] in Nottinghamshire*" (Revill 1975, p43).

Clearly the belief that Edwinstowe was a contender for the Battle of Hatfield goes back to at least the 17th century. In fact, the idea that the Battle of Hatfield or *Heathfield* took place in Nottinghamshire has been put forward a number of times over the years including by Stapleton (1890), White (1904), Gill (1914), and Wood (1947) who unfortunately provided little supporting evidence for their suggestion.

As early as 1890, Stapleton in his book "*History of Kings' Clipstone*" linked the Battle of Hatfield and Edwinstowe, in order to suggest indirect evidence for a theory that was apparently current in his time that the King's Houses (later King John's Palace, former palatial hunting complex of the Plantagenet Kings in Clipstone) was founded by one of the early Kings of Northumbria. He states: "*Doubtless many readers have come across the statement that the House is said to have been founded by one of the early kings of Northumbria. Such reports appear to have had their origin in the following passage from Laird's Nottinghamshire, 1813, taken from a harlein manuscript, the veracity of which we have no means of determining: - "The water of Man* [Maun] *descendeth northward from the town of Mansfield through Clipstone Park, and so by the town of Clipstone, where was an ancient house of the princes of this realm, but (built?) before the conquest by the king of Northumbria"* (Stapleton 1890 p3).

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

This reference is itself of interest. It is possibly the result of confusion relating to legends of King Edwin, that have become, here, associated far later with the royal palatial hunting complex of Clipstone. At the time of the conquest the estate of Clipstone was not in crown hands, and there were two landowners Osbern and Wulfsi listed in the Domesday Book for the time of the conquest. The entry shows that by 1086 Clipstone was in the ownership of Roger de Busli (Morris 1977, 285 a,b). There is no indication of a royal connection or residency at or around 1066-1086. However recent excavations by Mercian Archaeological Services CIC has discovered Early Saxon, Middle Saxon, Late Saxon, and Saxo-Norman pottery (Budge 2015, Budge 2016) in Kings Clipstone in and around the site of the royal palatial hunting complex. These include "*a number of sherds of early to middle Saxon pottery, including a hand made jar rim. Jane Young, who kindly examined these sherds along with the Saxon pottery from the Discover King John's Palace project (Budge 2015), noted that the range of fabrics and wide dating span of the material suggest it is more likely to come from occupation than isolated and short term activities"* (Budge 2016). So, the possibility of a Palace founded by the Northumbrian Kings at Clipstone cannot be entirely ruled out at this stage. For a full analysis of these finds and their possible interpretation see Budge 2017.

Of more relevance is that Stapleton cites the Battle of Hatfield to support this claim: "*There is now every reason to believe that the battle of Hatfield, A.D. 633 took place, not as has generally been supposed at Hatfield, near Doncaster, Yorkshire, but at or near Hatfield in this neighbourhood, a short distance from Edwinstowe.*" He suggested that when he wrote in 1890 *"There is nothing more than theory to support this idea, yet a degree of presumptive evidence appears in the circumstance that the chapel within the Manor House was dedicated to St. Edwin"* Stapleton 1890, p4). Stapleton was referring to the chapel of St. Edwin which as stated above is located

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

on the northern boundary of Clipstone lordship. Even if no link could be proven of Clipstone to the Northumbrian Kings, the reference can likely be seen as a folk memory relating to Edwin King of Northumbria and the area. This could perhaps be seen as further corroborative evidence in support of that link.

In a similar way to Gover, Mawer & Stenton, Stapleton also comes to his conclusion that the Battle of Hatfield was fought in the area around Edwinstowe due to the presence of the Chapel of St Edwin in Clipstone.

7.3 St Edwin's Chapel and the designed romantic Arthurian parkland landscape of Clipstone

The chapel of St Edwin, located at the northern edge of the lordship of Clipstone has long been the single strongest indicator of the presence of a cult of St Edwin in the area around Edwinstowe.

However, if as this report suggests, the focus of the cult was on the church of Edwinstowe itself, with the orientation of the church on the sunrise of the anniversary of the death of King Edwin on the 12th of October, and the vigil and feast celebrated on that date during the medieval period; what was the origin and function of the chapel bearing his name in Clipstone?

Was the chapel an indicator of a mass grave or the location of the battle itself?

Battle chapels or crosses survive which mark the general location of many fields of battle: "*At least nine medieval chapels or religious houses stood upon battlefields or were associated with battles.*

"The earliest of known is associated with the action at Assandun in 1016, although the site of both the battle and chapel is disputed

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

(Rodwell 1993). The Greatest is Battle Abbey, constructed by William I on the site of the battle of Hastings in memory of those killed… Lesser chapels are documented at Towton, Barnet, Wakefield, and (probably) Evesham. That at Wakefield (1460) still stands, on the bridge to the north of the battlefield. The Towton chapel must have lain close to the mass grave excavated in the village in 1996" (Foard & Morris 2012, p13).

It is certainly possible that the chapel of St Edwin marks the location of a part of the battle, or a location where the body of King Edwin was temporarily lain (Peters 1990, p47), local legend states that Edwin was transported from the battlefield to be buried at the spot that became Edwinstowe church now stands (more below) (Pickles 1960, p7). Everson & Stocker quote a tradition stating that "*Edwin is said to have been buried at St Edwin's chapel in the hay of Birkwood* [Birklands], *in Edwinstowe parish, deep within Sherwood*" (Everson & Stocker 2015, p25). They do not however provide any source for this tradition.

Another possibility, suggested here, is that the chapel was not created following the battle, but instead represents a later foundation which adopted the association with St Edwin, due to the presence of his cult in Edwinstowe. In 1175 Henry II began the rebuilding of the church at Edwinstowe. 11 years earlier (Gaunt 2011, Crook 1976) he had begun developing the hunting lodge that would develop into the palatial complex of the King's Houses at Clipstone (now known as King John's Palace).

In1164-5, the first reference to Clipstone as a royal residence occurs in the Pipe Roll for 1164-5, when *"£20 were spent out of the farm of the honour of Tickhill 'on the work of the King's Houses of Clipstone'* (Pipe Roll II Henry II, p 53) (Colvin, Brown & Taylor 1963 Vol II p 918). In the following year; *"1165-6, the Sheriff, Robert fitz Ralph, rendered an account of 44 shillings of the ferm of Clipstone. In stocking the*

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

same Manor—for six oxen 18s., ten cows 20s., ten sows 6s. 8d., ten bee-hives 6s. 8d., twelve sheep 4s" (Stapleton 1890, p10-11).

Stapleton lists the following expenditure at the site between 1170 and 1179: In 1170-1 46s. 8d were expended on works at Clipstone, and in 1171-2 20s. was spent on enclosing the Hays around the Kings' House at Clipstone. In 1176-7: Expended at Clifton, with the vivarium (fish-pond), £210. This may be a mistake for Clipstone, judging by subsequent references. The outlay was an enormous one. In 1177-8: "*Operations upon the vivarium of Clipstone £20; the chapel £20; the House £36 6s. 8d. This fish-pond may or may not have been the mill-dam as in after years. This is the earliest reference to the chapel; such an expenditure conveys the impression that it must have been connected with the cost of building the structure*". The deer park at Clipstone was first enclosed in 1179-80 at the cost of £30 (Stapleton 1890). 1176-80: According to Colvin the above works mentioned by Stapleton equate to over £500 spent on works at Clipstone which included: building of a chamber and a chapel, construction of a fishpond, and the formation of a deer-park (Colvin, Brown & Taylor 1963 Vol II p918).

In 1178 – 80, £89 was spent on the works of enclosing of the park (Crook 1976, p35), and in 1186-7, '*for breaking up the vivarium at Clipstone 50s., and for carrying the fish from the same to another vivarium'* (Stapleton 1890). This may represent the creation in the late 12th of the "*Great Pond of Clipstone*" which encircled the site to the south and east (Gaunt & Wright 2013).

In 1205, King John endowed the Chapel of St Edwin in the landscape of Clipstone: (as stated above); a *"Capella Sci Edwini in Haya de Bircwde"* is mentioned (Rotuli Litterarum Clausarum, vol. 2, 1833-44, from Gover, Mawer & Stenton 1940, p75).

In 1208-9 King John spent £42 on the house and fish pond (Colvin, Brown & Taylor 1963 Vol II.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

The above show an investment in the landscape of Clipstone in the later 12th century and early 13th century which included a Deer Park, flooded landscape, and a chantry chapel linked to St Edwin of Northumbria.

These are all elements associated with designed medieval landscapes (Creighton 2013). The designed landscape of Clipstone was identified by Gaunt in 2011, and was developed by Gaunt in 2013 (Gaunt & Wright 2013). It was suggested by Gaunt that the landscape of Clipstone was deliberately designed with the intention of creating a romantic royal retreat in the heart of Sherwood Forest (Gaunt 2011, p46-48). The designed landscape included extensive '*deer launds'* (cleared areas of grassland) which provided views to and from the palace (Gaunt 2011, pp 27-28, 47-48 & 77). Gaunt suggested that the landscape of medieval Clipstone reflected landscapes present in medieval romance literature such as Arthurian legend, referencing the Gawain and Green Knight poem (Gaunt 2011, 48-49). This was based on the work of Amanda Richardson at Clarendon (Richardson 2007).

As stated by Gaunt*: "It seems likely that the park, palace and landscape developed in unison in a piecemeal fashion through the medieval period"* Gaunt 2011, p48).

As early as the later 12th century elements of this designed landscape were already beginning to take shape with the creation of the deer park, and the imposition of an aquatic landscape with the creation of the "*Great Pond*".

"*The properties of water, in particular its reflective qualities, ensured that it had a unique ability to transform the human experience of landscape… where the circumstances of the site allowed, ornamental water features were common within the medieval designed landscape. Both in reality and in pictorial depictions. In several of the famous calendar miniatures in the Tres Riches Heures du Duc de*

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

Berry, for instance, lakes form visual links between palatial residences in the background and ordered estate landscapes in the foreground … The perception of buildings across water was also a recurring theme in medieval Arthurian literature, for example" (Creighton, 20133, p77).

The lake at Clipstone would have provided views and reflections of the palace site which would have been *seen* reflecting in the Great Pond (Gaunt & Wright 2013, p49).

This pond was in place by the late 12th century. But even by this time watery landscapes were part of designed landscapes and part of medieval literature: "*In romances, images of hunting parties crossing water via bridges and fords or traversing moats were recurring motifs that signified movement into deeper more mystical hunting landscapes. In Cretien de Troyes late twelfth-century Le Chevalier de la Charrete, for example, the episode of the castle of the flaming lance involves the hunting party processing from managed meadowland immediately around the castle into a park provided with a metaled road before plunging into the forest, which sees a transformation from the social spaces of a managed world to the realm of the supernatural*" (Creighton 2013, p150).

One major, but less obvious element of designed romantic parkland hunting landscapes were chapel and hermitages. Hermits were well served by the remote landscapes provided by forests (Creighton 2013, p139). As well as the site on the edge of Clipstone park, a hermitage was present on the edge of Nottingham Castle Park, the earliest of the royal parks in Sherwood Forest. Lenton Hermitage known in medieval times as the chapel of *St Mary de la Roche* was probably founded in 1106 as a cell of Lenton Priory, and was presented to the priory by William Peveril (Trent and Peak Archaeological Unit 2000, pp3-4). The site occupied caves cut into the sandstone on the southern side of the park, and may have been

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

occupied originally by a hermit. By the "*reign of Henry III two monks described as at 'Roche' or 'dwelling in the rock under the castle' were maintained at 2d per day"* (Trent and peak Archaeological Unit 2000, p4). The site was later adapted into a hunting lodge in 1474 (Trent and Peak Archaeological Unit 2000, p4).

"*Medieval romances and saints' lives provided one source of inspiration for the association between hermits and hunting landscapes. The popular medieval saint St Giles was hermit accidentally injured by an arrow from a hunting party, while Eustace and Hubert were among several hermit saints converted while engaged in hunting. In addition, hermits were encountered by hunting parties in contemporary romances, in early-thirteenth-century Morte D'Arthur for instance, Sir Lancelot visited hermitages on his journeys through forests and stayed with a hermit having sustained an injury caused by a huntsman. As well as transplanting the eremitical tradition of the desert fathers to the designer wildernesses of medieval parks, hermitages were presumably built and sponsored by wealthy patrons in order to add to the mystique of the hunting landscape. The isolated locations of these sites also reflect the liminal status of medieval solarities within society more generally. It is quite clear that even if hermitages were less publicly visible than other lordly expressions of piety, to the medieval mind they were no less important and evocative features of the elite landscape*" (Creighton 2013, p140).

In the above passage Creighton shows clearly how the chapel of St Edwin at Clipstone could have been developed by King John to form part of the emerging Arthurian romance parkland hunting landscape of Clipstone that was being developed as early as the late 12th century. By linking to the local legend and cult of St Edwin the chapel would have been an expression of piety, but would also have had a special level of romance that resonated from the site and the association.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

If, as suggested here, the Chapel of St Edwin is one such parkland chapel, founded to reference the local cult of St Edwin, this suggests a deliberate romantic theme, and it also takes the origins of the designed romantic Arthurian parkland landscape of Clipstone back to the late 12th to early 13th century.

Research by Mercian Archaeological Services CIC is investigating the chapel site to see if the date of origin can be established. To date, the results of fieldwalking have helped to confirm the location of the chapel, and have yielded medieval pottery sherds in the vicinity of a spread of stone rubble. "*The pottery discovered included a 13th or 14th century Nottingham type jug and two glazed sherds of Brakenfield (Derbyshire) manufacture*" (Budge 2014, pp13-14). No Medieval pottery pre-dating the early 13th century date for the endowment of the chapel was discovered.

These results could be suggested to corroborate the origin of the chapel to the early 13th century as part of the designed parkland landscape of Clipstone. The linking of the chapel to St Edwin of Northumbria by the Kings at Clipstone strengthens greatly the probability of a cult of St Edwin in neighbouring Edwinstowe, and the date of 1205 helps to bridge the gap there between the 1381 reference to the vigil and saint day feast, and the 1175 orientation of the church.

It should be noted, as stated above, that Everson and Stocker suggest that St Edwin's chapel is the original burial site of Edwin (but give no source for the tradition), and state that the tradition persists, but has become identified with the church, citing Woodhead 2004 (Everson & Stocker 2015, p25). They continue: "*if the tradition that Edwin was buried at Birkwood hay is correct, presumably it would have been the site mentioned in the early eighth century by the author of the 'Life of Gregory the Great', who reported that, during the reign of the Mercian king Æthelred (675-704), the remains of King Edwin*

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

were recovered by a priest called Trimma and taken to Whitby (Colgrave 1968, 103; Sawyer 1998, 71-2)" (Everson & Stocker 2015, p25). They further suggest that: "*Sawyer is surely correct to suggest that Trimma had originally intended to found a monastery dedicated to St Edwin at his burial site, but had relocated the saintly relics to Whitby because a cult to a Northumbrian king would no longer have been welcome in what was now Mercia (ibid.* [Sawyer 1998]*). Further evidence for the presence of some sort of early church at Edwinstowe, in fact might also be deduced from its location, as it lies only five miles down-river from the known villa regalis at Mansfield; a comparable distance to that which separates Leverton and Wheatly (Crook, D. 1984; 2000)"* (Everson & Stocker 2015, p25).

This report agrees with Everson and Stocker that the battle of Hatfield took place in the vicinity of Edwinstowe, but suggests an alternative theory that the centre of the cult is at the church in Edwinstowe (using all the combined evidence, as presented in this report), not St Edwin's chapel. It is suggested here that the original burial site of Edwin mentioned in the 'Life of Gregory the Great' was at the site of the church in Edwinstowe, and that despite being in Mercian territory, a cult does seem to have survived.

Perhaps the most obvious question relating to whether St Edwin's chapel or Edwinstowe church is the likely site of the original burial site of Edwin, if indeed the legends are to be believed, would have to be, the place-names themselves. If St Edwin's chapel is the original centre of the association with a cult of St Edwin, and was the site of his burial, surely the site would have grown to be the site of 'Edwin's Holy Place', and Edwinstowe itself would not? The fact the Edwinstowe has that place-name attached to it does seem to make a strong case for the church there being the site of his original burial.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

7.4 Cuckney and the Battle of Hatfield.

With regard to the Battle of Hatfield, perhaps the most intriguing case to date for linking the Battle of Hatfield to the area around Edwinstowe, Nottinghamshire, comes from the discovery of up to 200 skeletons under the church in the village of Cuckney, 4 miles to the northeast of Edwinstowe. The skeletons were discovered by builders during underpinning works, undertaken in 1951 in advance of potential coal mining operations in the area. Professor Maurice Barley reported the find in the Transactions of the Thoroton Society journal, however his interpretations and descriptions were not based on first hand evidence, but on the testimonies of the workmen and others. It was estimated that burial pits under the church could hold up to 200 burials. These burials were believed to have pre-dated the building of the church in the later 12th century and early 13th century, and Professor Maurice Barley suggested a possible date for the burials relating to the Anarchy of Stephen and Matilda in the second quarter of the 12th century (Barley 1951).

"*During the underpinning of the church in 1951, up to 200 burials were found which antedate the building of the church in c.1200. They occupied three or four communal graves; that is, trenches dug north to south so that the bodies could be laid with their feet to the east. No associated finds have been recorded; neither have the remains undergone scientific analysis. However, it is assumed that the bodies were casualties from a skirmish associated with the Maudian rebellion. After their discovery, the skeletons were reinterred in a fresh communal grave.*" (https://historicengland.org.uk/listing/the-list/listentry/1010909, accessed 31/03/2016).

Stanley Revill, in his 1975 paper on *King Edwin and the Battle of Hatfield*, reassessed the evidence for the burials, and using place-names among other arguments, he suggested that the burials might

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

have dated from the 633AD Battle of Hatfield, where Edwin of Northumbria was defeated and killed by the combined forces of Penda of Mercia and Cadwallon of Gwynedd. Revill referenced the local existence of a *Hatfield Grange*, a *High Hatfield Farm*, in the Norton Cuckney Parish. He also discussed the location of Cuckney in the District of Hatfield (see below), the proximity to Edwinstowe, and the presence of St Edwin's chapel in Clipstone. These were all listed as geographical indicators pointing to the memory of the battle of Hatfield and death of King Edwin in the local area (Revill, 1975, pp40-49).

The Battle of Hatfield, and its link to Cuckney is currently being investigated by *The Battle of Hatfield Investigation Society*, alongside Mercian Archaeological Services CIC.

As part of a Heritage Lottery Funded project: *Does the Heritage of the Welbeck Estate Include a King Killed at Cuckney?* The Battle of Hatfield Investigation Society employed Mercian Archaeological Services CIC to lead an archaeological investigation to locate the possible re-interments from 1951, and to further interpret the site, earthworks and landscape; which includes the possible medieval castle of Cuckney.

Fieldwork from the project, led by Mercian Archaeological Services CIC included a geophysical magnetometer survey and a topographic earthwork survey, alongside a ground penetrating radar survey by RSK Geophysics.

The Ground Penetrating Radar survey detected anomalies under the church which could represent the first primary evidence ever recorded of the burial pits, and also found anomalies in the eastern part of the churchyard which could represent the re-interments from the 1950s (Stringfellow 2015, Gaunt & Crossley 2016).

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

Magnetometer survey and topographic survey detected banks and ditches throughout the survey area, increasing the knowledge of the scheduled area and surroundings.

During the surveys two late Saxon pottery sherds were recovered and recorded by David Budge of Mercian Archaeological Services CIC under agreement of Tim Allen of Historic England (see Gaunt and Crossley 2016), one just to the east of the present church and the other approximately directly 215m west of the first, close to where the A60 road crosses the River Poulter. These sherds represent the first archaeological evidence for late Saxon activity in Cuckney, pushing evidence of occupation in the area back to the late Saxon period.

The investigation of the possible battle site in and around Cuckney by the *Battle of Hatfield Investigation Society* with Mercian Archaeological Services CIC continues.

7.5 The District of Hatfield

In addition to the place-name evidence linking Cuckney to Hatfield in the form of a number of farms in the parish carrying the name; Cuckney and the village of Edwinstowe to the southeast were both within a large district which was known as Hatfield.

A Perambulation of Sherwood Forest from the early 13th century (listed by Boulton as dating from 1232, but corrected to 1227 (Crook 1979)) locates Hatfield as the western part of Bassetlaw:

"*ita quod illa pars de Notynghamschire que est inter aquam de Conyngeswath' et predictum villa de Blithe scilicet que vocatur Hatfeld est deafforestata*" (Boulton 1964, p37).

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

The entry suggests that the area known as Hatfield (*Hatfeld*); north of the river at Conyngeswath, up to the town of Blyth; is disaforested.

'*Conyngeswath*' is a purely Scandinavian compound of '*Konungr*' and '*Vaðr*', hence '*King's Ford'.* The ford carried the ancient road from Nottingham to Blyth across the Maun just after it has been joined by the Meden. The ford is now replaced by '*Conjure Alders'* Bridge (Gover, Mawer & Stenton 1940, p70).

This means the area north of the river Meden was taken out of Forest Law in the early 13th century, but more important for the Battle of Hatfield theory, it confirms that the area of northwest Nottinghamshire was known as Hatfield all the way to the northern county boundary.

The Hatfield District was the western part of the Wapentake of Bassetlaw. Hatfield is depicted on Chapman's map of Nottinghamshire dating to 1774, as covering an area; 15 miles long from Edwinstowe in the south, to Bawtry in the north, by 9 miles wide stretching from the Derbyshire border in the west to the Great North Road in the east. This area is roughly concordant with the area of the Sherwood Sandstone Geology (BGS.ac.uk), within Nottinghamshire, and as suggested below this area may have extended to the north to include the area in Yorkshire known as Hatfield Chase in Saxon times.

The Hatfield Division is recorded as *Hatfeld* in 1232, *Hadfeld, Hethfeld*' 1232, *Haytfeld* 1275, *le Hattefeld* 1343 (Gover, Mawer & Stenton 1940, p36). Hatfield Grange in Norton (Revill 1977), and High Hatfield Farm in Cuckney may preserve this name. The derivation of the place-name for Hatfield (Grange) is given as "*heath or open land*". It is spelled *Haytefeld* in 1316, and *Hatefelde* Grange in 1539. This form seems to show "*influence of the cognate Scandinavian word heiðr*" (Gover, Mawer & Stenton 1940, p 88).

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

The place name for the Wapentake of Bassetlaw has been spelled *Bernesedelaue, Bernedelawe, Bernedeslaue,* in Domesday Book of 1086, *Dersetelawa* in 1157*, Bersetalawa* 1165, *Bersetelaw*(e) 1219, *Bersetlaw* 1298, and *Bersettelowe* 1305. A possible interpretation of this place-name is "*a compound of bærnet, 'land cleared by burning' and sæte, 'settlers, inhabitants' hlaw".* The first element being some lost Mercian tribal name in *sæte* (Gover, Mawer & Stenton 1940, p22). This interpretation could further explain the name Hatfield in this area, as it is possible that the earlier settlers of this part of Nottinghamshire maintained a landscape of heath land clearances through controlled burning: "*If the Hatfield division of Bassetlaw was the core of the territory of the Bernet-seatte, then it will have covered the Sherwood Sandstones, an area of wood and perhaps more substantially heath. Summer parching of vegetation on the "droughty" sandstones, or the seasonal burning of scrub, gorse and ferns, to maintain pastures, could give a context to "burnt land*"
(Anglo-Saxon Nottinghamshire – East Midlands Historic Environment Research Framework project p10 http://archaeologydataservice.ac.uk/researchframeworks/eastmidlands/attach/County-assessments/NotAngloSaxon.pdf - accessed 24/07/2017).

7.6 Hatfield District and the Heathfelthland

It is possible that the Hatfield district in Nottinghamshire may have formed part of an early Anglo-Saxon regio or sub-kingdom, known as '*Haethfelthland*'. Everson and Stoker state that "*part of what was to become north Nottinghamshire was within an intermediate or border territory called Hatfield (Heathfeldland)*" (Everson & Stocker 2015, p23).

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

This mysterious name is mentioned in the '*Tribal Hidage*', a document (7th or 8th century in date depending on who it was written by, and what for) which was either a "*list of tribute assessments which one of the major kingdoms was able to extract from its subordinate territories, or a general register of hideage. There is much disagreement about whether the list originated in Mercia or Northumbria*" (Zaluckyj 2011, p17). The document was likely to have been written in the 8th century (Everson & Stocker 2015, p23) for the great King Offa of Mercian, or in the 7th century, possibly for Edwin of Northumbria (Zaluckyj suggests the '*Tribal Hideage*' was produced as a Northumbrian tax assessment during the 7th century (Zaluckyj 2011, p 17-18)).

The '*Tribal Hideage'* lists a series of places presumed to be territories within a larger 8th century Kingdom of Mercia, (or 7th century kingdom of Northumbria) which include*: 'Myrcna lands'* (Mercian Lands), '*Pecsaete*' (Settlers of the Peak), *'Wreocensaete'* (Settlers of the Wrekin), '*East Engle'* (East Anglia), '*East Sexena'* (East Sussex), '*West Sexena'* (West Saxons, Wessex) '*Cantwarena*' (Kent) and also: *"Lindes farona and Heath feld land*" (Lindsey Folk, Lindsey and Hatfield) (Zaluckyj 2011 p19).

The *'Heath feld land'* is grouped in the Tribal Hideage alongside the Kingdom of Lindsey (modern day northern Lincolnshire), and it is probable that the sub-kingdom of Lindsey was adjacent geographically to '*Haethfelthland*' at this time (7th or 8th century) (Zalucky 2011, p18).

The district of Hatfield (as mentioned above) sat to the west of the county on the Sherwood Sandstones, and Lincolnshire was separated from Hatfield by the eastern half of Bassetlaw.

In the time of Domesday Book (1086) the area between the Hatfield District and Lincolnshire was occupied by the *Oswalbeck Wapentake* (Morris 1977) which occupied the north-eastern part of

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

Nottinghamshire (this was later absorbed into the Wapentake of Bassetlaw as the North Clay Division (Gover, Mawer & Stenton 1940, p24).

It is possible that Oswaldbeck was once part of an extension of the Saxon Kingdom of Lindsey to the west of the Trent:

"*It may be then, that in Oswaldbeck and the South Clay we may be looking at a westward extension of the kingdom of Lindsey. This would fit with the strategic significance of Tillbridge Lane, the Roman road from Lincoln to Doncaster, and the later distinctiveness in customs of inheritance and land tenure of Oswaldbeck. It would also explain Edwin of Northumbria's choice of the Trent, at Tiowulfingacaester for the baptism of the people of Lindsey by Paulinus in 627 A.D"* (Anglo-Saxon Nottinghamshire – East Midlands Historic Environment Research Framework project p11, http://archaeologydataservice.ac.uk/researchframeworks/eastmidlands/attach/County-assessments/NotAngloSaxon.pdf - accessed 24/07/2017).

Everson and Stocker also suggest that Oswaldbeck was linked to Lindsey (Everson & Stocker 2015, pp23-24). However, they also present the argument that Oswaldbeck may have formed part of Hatfield: "*Additionally, as M.S. Parker has persuasively proposed, this northern part of Nottinghamshire – 'The Clays'… was associated with the adjacent low-lying parts of south Yorkshire and Lincolnshire to which the name 'Hatfield' has been more directly attached, in forming the early regio of Hatfield (Parker 1992). Parker reasoned that the regio was associated at an early date – in the time of Edwin and Oswald in the early and mid seventh century – with the southern Kingdom of Deira* [Northumbria] *and that it included part of both west Lindsey and north Nottinghamshire. By the time of the Tribal Hideage, however, Hatfield lay in Mercia, for that kingdom is the document's*

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

scope, and was linked with Lindesy, though perceived as a separate regio" (Everson & Stocker 2015, p24).

Whatever the origin of the Tribal Hideage, and whether or not Oswaldbeck formed part of Lindesy or Hatfield, the '*Haethfelth'* mentioned by Bede (Sherley-Price & Latham, p168), and the *Haethfelthland* of the *'Tribal Hidage'* (Zaluckyj 2011 p19, Everson & Stocker 2015, p23-25); was therefore be a large tract of land 30 miles from north to south extending deep into what would become modern day Nottinghamshire (Revill 1975; Everson & Stocker 2015, p25).

Edwinstowe sits at the southern end of the Hatfield District, and was therefore presumably part of *Haethfelthland* in the 7th century.

If Edwinstowe was founded following the battle then the absence of a village or settlement there at that time would explain why the battle was not given a more specific location name.

7.7. Sunrise, vigils and the cult of St Edwin

All of the above evidence can be used to argue that the orientation of the 12th century church in Edwinstowe facing the sunrise on the 12th of October; the anniversary of the death of St Edwin, which was subsequently honoured as his saint's Day, and was celebrated in the village with a vigil and feast in medieval times was anything but deliberate, is extremely unlikely.

If the orientation is deliberate it pushes the origin of a '*cult of St Edwin'* back to at least 1175, 30 years earlier than the earliest reference to the chapel of St Edwin in 1205, and 206 years before the first mention of the vigil and saint's day activities in the village.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

If the alignment of the church, rebuilt in stone by Henry II in 1175 is deliberate, and the alignment is designed to orientate to the sunrise on St Edwin's saint's day and the anniversary of his death on the 12th October, it seems likely the orientation comes from at least the preceding church mentioned in Domesday, and more likely to the origin of the place-name of '*Edwin's Holy Place'* of Edwinstowe, and an already existing understanding of the importance of this alignment.

It seems improbable that the cult is an imposition on the part of the monarchy, with neither Henry II or King John having any apparent link to Edwin of Northumbria, and the place-name at that time being *Edenestoua* (Gover, Mawer & Stenton 1940 pp75-65), which unless the link was already understood would not have made a link apparent to any recently incoming Angevin King.

The origin of an association with King Edwin of Northumbria and the 12th October would naturally be his death at the Battle of Hatfield in the year 633AD. This points to a tantalising possibility that the tradition of aligning the church in Edwinstowe on the 12th October sunrise on St Edwin's saint's day originated in Edwinstowe in the 7th century, either immediately following or sometime shortly after the Battle of Hatfield and his death there.

Archaeoastronomical measurements show that in the year 633, the sunrise was between 104˚ and 105˚ on October 12th (see figures 12 and 13), which suggests that if the alignment on the saint day originated at this time, with regard to the shrine of a recently deceased Saxon-era King, the alignment may have been adjusted later, by a few degrees having drifted slightly over that time. The orientation may have begun in the 7th century and become cemented on the 106.5˚ azimuth for the 12th October somewhere pre-dating the 12th century rebuild, having originated from orientations related to a direct link to the possible burial of the King there in the year 633. The

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

orientation of 106.5˚ can be shown to have been correct for the sunrise on the 12th of October at least as early as circa 1000.

When looking for possible activity associated with the origin of any cult based around the death of King (later Saint) Edwin, it is possible to find a reference to a near contemporary situation around the death of Edwin's nephew King Oswald (later Saint Oswald- with a widespread medieval cult). Bede records that following the death of King Oswald at the battle of Masersfelth on the 5th August 642, the Monks of Hexham would visit the site of the preceding Battle of Heavenfield which Oswald had famously won:

"*The brothers of the church of Hexham, which lies not far away, have long been accustomed to make a yearly pilgrimage here on the eve of the anniversary of Oswald's death in order to keep vigil for the welfare of his soul, to recite the psalter, and to offer the Holy Sacrifice for him at dawn. By a further development of this good custom, the brothers have recently built a church on the spot, which has made it honoured and hallowed above all others"* (Sherley-Price & Latham 1979 p156).

The requirement to offer the Holy Sacrifice at dawn suggests that the observance of the sunrise was of significance at this time.

7.8. A Minster at Edwin's Holy Place, and the origins of Edwinstowe.

As stated above the Medieval parish of Edwinstowe included a large number of the surrounding villages including Clipstone, Carburton, Perlethorpe, Thoresby, Ollerton, Wellow, and Budby (see Historic Background section above).

It is just possible that these chapelries situated in the villages

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

surrounding Edwinstowe formed a fossilised Anglo-Saxon '*parochia*' centred on Edwinstowe, with the church there acting as a '*mother house*'. This could have been a central '*superior church'* linked to the Kings' Manor of Mansfield. The Multiple Estate centred on Mansfield was an extremely extensive entity across northern Nottinghamshire (Bishop 1981).

The first phase of the *East Midlands Historic Environment Research Framework project: 'ANGLO-SAXON NOTTINGHAMSHIRE'* discusses the subject of possible Parochia in Nottinghamshire and possible links of "*superior churches*" to '*multiple estates'* of the King. Although this discussion to not directly list Edwinstowe as one such parochial, it does state the following on page 7:

"*No Middle Saxon church or monastic sites are known with certainty from Nottinghamshire. However, the association of these with royal centres or estates may provide some clues for future research. Mansfield, Dunham, Southwell and Orston may be particular targets for this, along with Edwinstowe because of its claimed association with Edwin and the battle of Heathfield*"
(http://archaeologydataservice.ac.uk/researchframeworks/eastmidlands/attach/County-assessments/NotAngloSaxon.pdf - Accessed 21/-7/2017).

All the evidence presented in this report suggests strongly that Edwinstowe was a centre of the cult of Edwin during the Medieval period (12th-15th centuries, and that the most likely origin for the link (including the place-name (Saxon origin) and the alignment of the church (12th century but presumed to be based on an earlier tradition)) was the death of King Edwin on 12th October in the year 633 at the Battle of Hatfield as stated by Bede.

If this is correct, as seems reasonable to suppose, then the church at Edwinstowe may well have had a 7th century origin.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

Excavations in the village by Mercian Archaeological Services CIC (Gaunt 2014) suggest that occupation pre-conquest and at the time of Domesday was focused around the church. Documentary evidence for medieval surnames (see historic background above) suggesting a *'top of the town'* area around the church, as well as evidence from Domesday Book (1086) with a Priest, church and four smallholders (but no mill) present, support this theory. The formation of the village of Edwinstowe around the church in the 7th century is an important theory regarding settlement development in the area.

Such an early foundation at Edwinstowe, and the chapels listed as part of its parish in medieval times could point to Edwinstowe being the centre of an early parochia, or minster in Saxon times. Later fossilised as a parish church and neighbouring chapelries.

7.9. Conclusion

In summary, there is now a large and convincing body of evidence linking King Edwin of Northumbria (later Saint Edwin) with the Nottinghamshire village of Edwinstowe including:

- The place-name of Edwinstowe meaning '*Edwin's Holy Place',*
- the alignment of the church detected in this survey on the sunrise on his saint's day on the 12th October (in the year of the rebuilding of the church in 1175 by Henry II) and the possibility that this suggests an earlier alignment with the saint day sunrise,
- the orientation of the church on 12th October which represents not only his saint's day but also the date of his death at the Battle of Hatfield in 633AD,
- the 1381 reference to a vigil and feast day in Edwinstowe churchyard on St Edwin's saint's day, and subsequent 15th

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

century confirmation,

- the presence of a chapel dedicated by King John to St Edwin (absorbing the local tradition of St Edwin and a possible cult) on the northern edge of the nascent designed romantic Arthurian parkland hunting landscape surrounding the royal hunting lodge (that would later develop into the palatial complex) of the Kings Houses at Clipstone in the early 12th century),

These all strongly link King Edwin of Northumbria to Edwinstowe, and in particular to the date of his death on the 12th October 633AD at the Battle of Hatfield. This connection is further corroborated by evidence in the wider landscape suggestive of the Battle of Hatfield being fought nearby including:

- The discovery of up to 200 skeletons under the nearby church at Cuckney,
- the references in the parish of Norton Cuckney to Hatfield such as Hatfield Grange and High Hatfield Farm,
- the location of both Cuckney and Edwinstowe within the former District of Hatfield.

Further to the above is the presence of a church in Edwinstowe at Domesday. This church and its medieval parish (which covered much of the surrounding villages and landscape) could represent the fossilisation of an early minster site at Edwinstowe (due to its early importance and direct links to St Edwin of Northumbria).

All this evidence combined makes it almost certain that Edwinstowe was the home to a medieval cult centred on St Edwin, whose former life as King Edwin of Northumbria came to an end near Edwinstowe in the year 633AD.

As stated above local legend states that Edwinstowe church is built

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

on the spot where Edwin's headless body lay after the Battle of Hatfield, his head was later buried in York Minster and his body finally buried at Whitby Abbey. Following his elevation to sainthood the spot where his body had lain became a hallowed place (Zalluckyj 2011, p30).

It is just possible that the church in Edwinstowe and its orientation on the sunrise on his saint's day, on 12th October (now 19th October), is in fact a very visible reminder of King Edwin of Northumbria (later St Edwin) and his death at the Battle of Hatfield in the vicinity of Edwinstowe in the 7th century.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

8. Bibliography

Anglo-Saxon Nottinghamshire – East Midlands Historic Environment Research Framework project.

A Short Guide to GPS. 2004. British Archaeological Jobs Resource.

Ainsworth, S., Bowden, M., McOmish, D. & Pearson, T. 2007. *Understanding the Archaeology of Landscape.* English Heritage.

Ainsworth, S. & Thomason, B. 2003. *Where on Earth are We? The Global Positioning System (GPS) in archaeological field survey.* English Heritage.

Barley, M. 1951. *Cuckney church and castle*. Transactions of the Thoroton Society of Nottinghamshire Vol. 55 p. 26-29

Boulton, H.E.1964. *The Sherwood Forest Book*. Thoroton Society Record Series XXIII.

Budge, D. 2017. *Discover King John's Palace Ploughsoil Test-pitting, Kings Clipstone, Nottinghamshire*. Mercian Archaeological Services CIC, MAS033, Archaeological Report.

Budge, D. 2016. *Kings Clipstone*. In King, C. (Ed.) *Archaeology in Nottinghamshire*, Transactions of the Thoroton Society Vol 120.

Budge, D. J., 2014. *Clipstone, Edwin's Chapel.* in Challis (Ed.) *Archaeology in Nottinghamshire*. Transactions of the Thoroton Society Vol 118.

Chapman, H. 2006. *Landscape Archaeology and GIS.* Tempus.

Colvin, H., Brown, R. A. & Taylor, A. J. 1963. *The History of the King's Works Vol. 2: the Middle Ages*.

Colvin, H. & Rahtz, P. 1960. *King John's Palace, Clipstone*. Transactions of the Thoroton Society of Nottinghamshire Vol. 64

Creighton, O.H. 2013. *Designs Upon the Land: Elite Landscapes of the Middle Ages.* The Boydell Press.

Colgrave, B. (Ed.). 1968. *The Earliest Life of Gregory the Great by an Anonymous Monk of Whitby.* (Lawrence KS).

Crook, D. 2015. *The Novelist, the Heiress, the Artisan and the Banker: The Emergence of the Robin Hood Legend at*

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

Edwinstowe, c.1819 to 1849. Transactions of the Thoroton Society Vol 119.

Crook, D. 2000. *Nottinghamshire and the Crown: the county and its institutions from its origins to the Black Death, c.900 to 1350.* Transactions of the Thoroton Society Vol CIV.

Crook, D. 1984. *The Community of Mansfield from Domesday Book to the reign of Edward III.* Transactions of the Thoroton Society of Nottinghamshire Vol LXXXVIII.

Crook, D. 1979. *The Struggle Over Forest Boundaires in Nottinghamshire 1218-1227.* Transactions of the Thoroton Society of Nottinghamshire Vol. 83.

Crook, D. 1976. *Clipstone Park and Peel*. Transactions of the Thoroton Society of Nottinghamshire Vol. 80.

Everson, P. & Stocker, D. 2015. *Corpus of Anglo-Saxon Stone Sculpture Volume XII. Nottinghamshire*. Published for the British Academy by Oxford University Press.

English Heritage, 1991. *Management of Archaeological Projects (MAP2).*

Foard, G. & Morris, R. 2012. *The Archaeology of English Battlefields: Conflict in the Pre-Industrial Landscape*. Council for British Archaeology, CBA Research Report 168.

Garmonsway, G.N. 1975. *The Anglo-Saxon Chronicle.* J.M.Dent & Sons Ltd. London.

Gaunt, A. 2014. *Edwinstowe*, in Challis, K. (ed.*) Archaeology in Nottinghamshire.* Transactions of the Thoroton Society, Vol 118.

Gaunt, A, 2011. *Clipstone Park and the King's Houses: Reconstructing and interpreting a medieval landscape through non-invasive techniques.* Institute of Archaeology and Antiquity. University of Birmingham. Unpublished Masters Thesis.

Gaunt, A. & Crossley, S. 2016. *An Integrated Archaeological Survey of Cuckney Churchyard, Castle, and surroundings. Cuckney, Nottinghamshire, 2016*. Integrated Archaeological Survey Report MAS021. Mercian Archaeological Services CIC.

Gaunt, A., & Wright, J. 2013. *A romantic royal retreat, and an idealised forest in miniature: The designed landscape of medieval Clipstone, at the heart of Sherwood Forest.* Transactions of the Thoroton Society Vol. 117.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

Gover, J. E. B., Mawer, A. & Stenton, F. M. 1940. *Placenames of Nottinghamshire.* English Placenames Society. Vol. XVII.

Henty, L. 2015. *An Examination of the Divide between Archaeoastronomy and Archaeology*, in Silva, S. & Campion, N. 2015. *Skyscapes: The Role and Importance of the Sky in Archaeology*. Oxbow Book.

Hinton, I. D. 2010. *Aspects of the Alignment and Location of Medieval Rural Churches.* Doctoral Thesis School of History, University of East Anglia.

Hinton, I. D., 2006. *Church Alignment and Patronal Saint's Days*. The Antiquaries Journal, 86, 206-226.

Hoare, P. 2014. *Orientation of English Medieval Parish churches.* In Ruggles, C. 2015. *Handbook of Archaeoastronomy and Ethnoastronomy.* Springer Science + Business Media, New York. pp 1711-1718.

Hoare, P.G. and Sweet, C. 2000. *The orientation of early medieval churches in England*. Journal of Historical Geography, 26, 2 (2000) 162–173

IFA, 2012, By-laws. *Code of Conduct*, Institute of Field Archaeologists, Reading.

Knight, D., Vyner, B. & Allen, C. 2012. *East Midlands Heritage- An Updated Research Agenda and Strategy for the Historic Environment of the East Midlands*. University of Nottingham and York Archaeological Trust.

Lutton, S. 2003. *Metric Survey Specifications for English Heritage*. English Heritage.

Morris, J. 1977. *Domesday Book. Nottinghamshire*. Phillimore.

Parker, M.S. 1992. *The Province of Hatfield*. Northern Hist. XXVIII, 42-69.

Peters, R. 1990. *Ancient Bassetlaw.* The North Trent Local History Series, No. 5.

Pevsner, N. 1951. *The Buildings of England, Nottinghamshire*. Penguin Books.

Pickles, H. 1960. *The Story of Edwinstowe and its Parish Church, 6th Edition*. Edwinstowe.

Revill, S. 1975. *King Edwin and the Battle of Hatfield*. Transactions

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

of the Thoroton Society Volume 79.

Richardson, A. 2007. *'The King's Chief Delights': A Landscape Approach to the Royal Parks of Post-Conquest England* in Lilliard, R. (ed.) 2007. *The medieval Park: New Perspectives*. Windgatherer Press.

Rodwell,

Ruggles, C.L.N., Appleton, P. N., Burch, S.F., Cooke, J.A., Few, R. W. and Morgan, J.G. (1984). *Megalithic Astronomy: A New Archaeological and statistical Study of 300 Western Scottish Sites*. Oxfordshire: Archaeopress.

Sawyer, P.H. 1998. Anglo-Saxon Lincolnshire. History of Lincolnshire, *Volume 3.* Society for Lincolnshire History and Archaeology, Lincoln.

Sherley-Price, L. & Laytham, R.E.: Bede- *A History of the English Church and People*. Translated by Sherley-Price, revised Latham, R.E. 1968. Penguin Classics.

Stringfellow, M. 2015. *Mercian Archaeological Services Geophysical Report St Mary's Church, Cuckney* Report 294920 R01(00). RSK Geophysics.

Stapleton, A. 1890. *A History of the Lordship of King's Clipstone or Clipstone in Sherwood, Nottinghamshire.*

The Calendar of the Charter Rolls preserved in the Public Record Office: 1226-[1516] Volume v. 5. 15 Edward III - 5 Henry V, A.D. 1341-1417. H.M.Stationary Office, London. 1927.

Throsby, J. 1796. *The Antiquities of Nottinghamshire by Robert Thoroton edited and enlarged by John Throsby, Volume III.* Published 1790-76. Republished 1972, EP Publishing Ltd with Nottinghamshire County Library.

Trent and Peak Archaeological Unit. 2000. *An Archaeological Desk-top Assessment of Lenton Hermitage, Nottingham*.

Woodhead, A. 2004. *St Mary's Church, Edwinstowe: history of the church and guidebook for visitors* (Edwinstowe)

Zaluckyj, S. 2011*. Mercia: The Anglo-Saxon Kingdom of Central England*. Logaston Press.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

9. Acknowledgments:

Mercian Archaeological Services CIC would like to thank Richard Neely and Graham Harley, Church Wardens, St Mary's Church, Edwinstowe.

Also, Diocese Archaeological Advisors Dr Christopher Brooke and Mike Hawkes, and Jonathan Pickett DAC Secretary & GIS Manager Diocese of Southwell and Nottingham for permission to undertake the survey.

Patrick Candler, Ian Major and the Sherwood Forest Trust.

Paul Jameson and the Battle of Hatfield Investigation Society.

Funding for this project has come from Mercian Archaeological Services CIC as part of the Sherwood Forest Archaeology Project, and the results help to show the value of a long term sustainable regional research project.

Also personal thanks from the author to Ruth Crook for discussions on alignment and calendar drift that were helpful in the shaping of my arguments.

10. Disclaimer:

©Mercian Archaeological Services CIC 2017.

Mercian Archaeological Services CIC and the individual authors retain copyright on all reports and documentation produced as part of the project under the Copyright, Designs and Patents Act 1988 with all rights reserved. However, they will provide license for the client to use the documents and reports for matters related to the project.

License is also granted for the document to be included in the County Historic Environment Record, where it will be publicly accessible.

Mercian Archaeological Services CIC should always be credited when references or images are used and permission to reproduce this document in whole or part can be sought from the author.

Mercian Archaeological Services CIC is a limited company registered in England and Wales. Company Registration No. 08347842.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

Appendix

Church alignments

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

The following aerial photographs contain some example alignments from churches in vicinity the of Edwinstowe, to show their alignments. It seems from this study that Edwinstowe Church's 106.5˚ azimuth is anomalous in relation to the orientation of the neighbouring churches. The churches of St Oswald's, Wall, in Northumbria and St Lawrence, Hatfield in South Yorkshire are included for comparison. Where notable alignments are apparent these are displayed (unproven) in Suncalc.net software to show basic potential alignment.

Aerial Photograph:	**Church Details:**
 Imagery ©2017 Getmapping plc, Map data ©2017 Google.	**St Mary's, Edwinstowe church,** Nottinghamshire. Orientation 106.5˚. 7 St Edwin's day 12th October alignment in 1175.
 Imagery ©2017 Getmapping plc, Map data ©2017 Google.	**St Peter and St Paul's, Warsop** Church, Church Warsop, Nottinghamshire. A Church is mentioned in Domesday, and was the property of three Saxon Lords. The tower is the oldest part of the church, the bottom two sections being late 11th or early 12th century, and extended in the 14th century. The

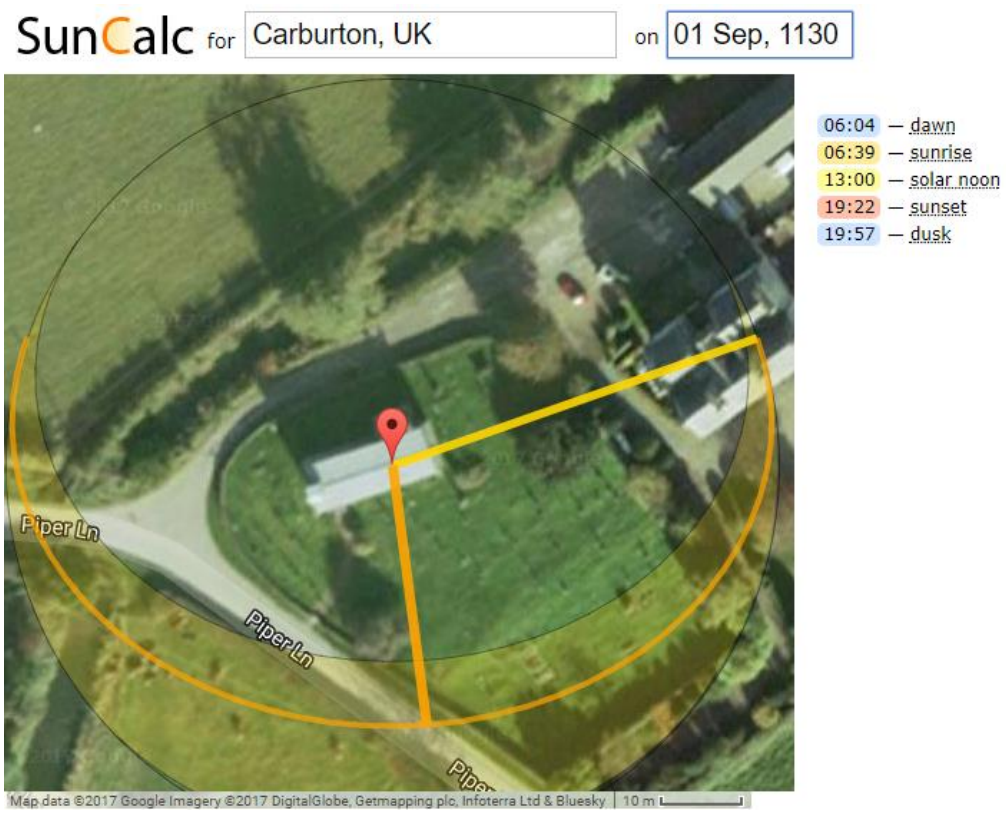
© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

	nave south arcade is 13th century and the nave north arcade is 14th century. The porch is 13th century, the chancel is 14th century and the clerestory is 15th century. (http://southwellchurches.nottingham.ac.uk/warsop/hintro.php - accessed 24/07/2017). Apparent Equinox alignment.
 Imagery ©2017 Getmapping plc, Map data ©2017 Google.	**St Mary's, Norton Cuckney,** Nottinghamshire. Parish church. C12, C13, mid C13, C15, C16, restored 1667, 1892 and 1907 (https://historicengland.org.uk/listing/the-list/list-entry/1206551 - accessed 24/07/2017) Apparent Equinox alignment.
 Imagery ©2017 Getmapping plc, Map data ©2017 Google.	**St. Giles church, Carburton**, Nottinghamshire. "Simple parish church of C12/C13 origins now consisting principally of a combined nave/chancel with bellcote to the west and mono-pitch vestry to the north side of the chancel. To the south side a series of infilled arcade arches indicate presence of a previous south aisle structure now lost"

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

	(https://www.historicengland.org.uk/advice/heritage-at-risk/search-register/list-entry/166104 - accessed 24/07/2017). Initial investigations using Suncalc.net suggest a possible sunrise alignment on St Giles Day of 1st September in the early 12th century circa 1130 (requires terrestrial measurements, horizon measurements and Stellarium software to confirm or deny). Prepared in http://suncalc.net/.

St Giles church alignment:



© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

 Imagery ©2017 Infoterra Ltd & Bluesky, Map data ©2017 Google.	**St Swithun's church, Wellow,** Nottinghamshire. Very restored. 12th century lower parts to tower, 13th century above, Perpendicular at top (Pevsner 1951, p199). Possible eastern alignment- with variation caused by local horizon.
 Imagery ©2017 Infoterra Ltd & Bluesky, Map data ©2017 Google.	**St Giles Old Ollerton,** Nottinghamshire. Built c1813 (Pevsner 1951, p143) 19th century church, medieval alignment unknown.
 Imagery ©2017 Getmapping plc, Map data ©2017 Google.	**St Mary of the Purification, Blidworth,** Nottinghamshire. 15th century tower survives. Remainder rebuilt 1739 (Pevsner 1951, p 37). Possible Easter alignment.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

Imagery ©2017 Google, Map data ©2017 Google.

St Peter and St Paul, Mansfield, Nottinghamshire.

"*Domesday Book for Mansfield mentions '2 churches and 2 priests' with St Paul & St Peter most likely being one of those and with the other being situated in Skegby. Most of the church was built by the Normans and although many alterations have taken place subsequently, there is still some evidence of the original church*" (http://southwellchurches.nottingham.ac.uk/mansfield-st-peter/hhistory.php - accessed 24/07/2017).

Presumed Equinox alignment dependant on local horizon.

Imagery ©2017 Infoterra Ltd & Bluesky, Map data ©2017 Google.

St Margaret, Bilsthorpe

Parish church. C13, C14, C15, C16, 1663, restored 1873 by T. C. Hine.

Possible Easter/ Equinox alignment.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

Imagery ©2017 Infoterra Ltd & Bluesky, Map data ©2017 Google.

Church of St Lawrence, **Hatfield**, Doncaster

Norman church of C12 origin with C13 arcades, the rest mostly C15.

https://historicengland.org.uk/advice/heritage-at-risk/search-register/list-entry/1945444 - accessed 24/07/2017

Possible sunset alignment suggested here for church on sunset August 10th circa 1150. St. Lawrence Day (requires terrestrial measurements, horizon measurements and Stellarium software to confirm or deny).
Prepared in http://suncalc.net/

St Lawrence Church orientation:

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk

Imagery ©2017 Infoterra Ltd & Bluesky, Map data ©2017 Google.

St Oswald's Church, Heavenfield. Wall, Northumbria.

Unfortunately, the church at the site of Heavenfield and the vigil of St Oswald attested to by Bede was rebuilt in 1737 with a possible Easter or Equinox alignment depending on local horizon.

Parish church; on medieval site, rebuilt 1737 and remodelled with addition of porch 1887 by W S Hicks. (https://www.historicengland.org.uk/listing/the-list/list-entry/1251034 - Accessed 24/07/2017)

Medieval alignment unknown.

© Mercian Archaeological Services CIC 2017.
www.mercian-as.co.uk