



ST GILES CHURCHYARD

**ARCHAEOLOGICAL
INVESTIGATION 2016**

PN16-06

Project No. 16-06**05/2017****ST GILES CHURCHYARD**

Church Street


Newcastle-under-Lyme

Staffordshire

ST5 1QS

ARCHAEOLOGICAL INVESTIGATION**By****William Mitchell**

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St Giles Churchyard, Newcastle-under-Lyme
Archaeological Investigation, 05/2017

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St Giles Churchyard, Newcastle-under-Lyme

Archaeological Investigation, 05/2017

SUMMARY

The Centre of Archaeology was commissioned in January 2015 by the St Giles Community Heritage Project, to undertake archaeological investigations in advance of the redevelopment of the church graveyard. The investigation formed part of a Heritage Lottery Funded (HLF) project at the parish Church of St Giles, Newcastle-under-Lyme, ST5 1QS (NGR 384678 3460050). The aim of these investigations were to archaeologically observe the removal of a large 19th century spoil mound and to undertake an associated community heritage project around this.

The results of the archaeological investigations and research of St Giles Church have significantly increased the understanding of the developments that went into the formation of both the church and its associated churchyard. In removing the mound archaeologically it has been possible to recover and interpret a large amount of artefactual information. This has been supplemented by the discovery of in situ inhumation burials, burial cuts, a brick crypt structure, foundation trenches and additional evidence. It has become clear through analysis of the recovered evidence that the documentary sources are largely accurate and can be supported by the archaeology.

Analysis of the pottery recovered from secure deposits and the mixed spoil mound deposits found that there has been occupation of the site from at least the 13th century. Most of the medieval pottery recovered, belonged to the 13th to 14th centuries with occasional sherds dating to the 15th to 16th centuries. Analysis of the disarticulated human remains recovered from both the spoil mound, the brick crypt structure and the disturbed inhumation burials found evidence of at least 182 individuals of all ages and both males and females. Analysis showed that, in general, the local population of Newcastle-under-Lyme had high rates of degenerative diseases indicative of heavy manual labour, old age, poor oral hygiene and a diet rich in tooth decaying foods.

St Giles Churchyard, Newcastle-Under Lyme

Archaeological Investigation, 09/2016

1. INTRODUCTION

- 1.1. The Centre of Archaeology was commissioned by the St Giles Community Heritage Project to undertake a watching brief and programme of targeted excavations ahead of the redevelopment and landscaping of the church grounds at St Giles Parish Church, Newcastle-under-Lyme (hereinafter referred to as the site). This work constitutes the third phase of an approved planning application (Planning Application Number 12/00111/FUL). The planning application was submitted to Newcastle-under-Lyme borough council. In accordance with government advice contained within the NPPF (National Planning Policy framework; Department for Communities and Local Government 2012), requirements of further archaeological investigation were placed upon the project.
- 1.2. This report outlines the results of the watching brief, the programme of targeted excavations and the interpretation of the recovered osteological and architectural finds carried out between 26th April and 30th June 2016. It has been prepared in accordance with the Institute for Archaeologists Standards and Guidance for Archaeological Evaluations (IFA 1999).
- 1.3. Prior to these investigations the St Giles Churchyard was subject to several archaeological interventions, documentary research and gravestone cataloguing, further details of which shall be outlined below. The first stage of archaeological activity comprised a watching brief which was carried out in August 2014. This archaeological watching brief took place during the excavation of exploratory geotechnical test pits in the car park of the site (Sturdy Colls 2014). A second stage of archaeological activity was undertaken in February 2015. An evaluation was undertaken with the purpose of establishing the materiality of the 19th century spoil mound present on the site and confirm the belief that this earthwork was formed from debris from the previous church which stood on the site, and to assess the likelihood of burials within the upper surface deposits of the mound.
- 1.4. The programme of archaeological investigations conformed to the tender document proposals issued by St Giles Parish Parochial Council and a written scheme of investigation (The Centre of Archaeology 2016; Appendix 1) which was approved by the Local Planning Authority (Staffordshire

County Council) prior to implementation in accordance with the Standards and Guidelines for archaeological fieldwork set out by the Chartered Institute for Archaeologists (CIfA 2013).

2. LOCATION AND GEOLOGY

- 2.1. St Giles Church is located in the churchyard of St Giles parish Church within the town centre of Newcastle-under-Lyme, and is centred on NGR 384678 346050 (Figure 1). St Giles occupies a parcel of land between Lower Street to the west of the site and High Street to the east. Church Street is located to the south of the site. The church is a Grade II listed building sitting on a sandstone ridge around which the upper section of Newcastle-under-Lyme is situated (PRN 06783 and Conservation area 050). The site is located on an area of raised ground which overlooks the flood plain of the Lyme Brook which flows to the west of the site and the location of the castle bailey.
- 2.2. The underlying geology of the St Giles Churchyard comprises red and grey mudstone, sandstone and thin deposits of coal (British Geological Survey). The town centre of Newcastle-under-Lyme is higher than its surroundings at about 140m AOD. The land slopes down to the valley of the Lyme Brook. North of the town centre the land rises up to about 160m AOD in the area known as The Bramptons.
- 2.3. The present character of the site is a large functioning 19th century church with its associated graveyard. An access road bisects the site and leads to the west of the site. The majority of the north of the site was occupied by a large spoil heap which originated in the Victorian period as a result of the reconstruction of the church buildings (Figure 2). Originally the churchyard continued further south, but this was truncated at the time of the construction of Church Street in the 19th century. A car park is situated to the north of the site and a road (Church Street), along with commercial businesses, is located to the south of the site. Commercial properties are situated to the west of the site and a dual carriage way is positioned to the east of the site (Figures 1 and 2). The proposal for redevelopment was for a complete landscaping of the churchyard (Appendix 4).

3. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

3.1. Historical Background

- 3.1.1. Newcastle-under-Lyme has a long and developed history and there is a wealth of cartographic and documentary research which can be used to support the archaeological information recovered from the site. A recent synthesis of the available information is reproduced in the Staffordshire Extensive Urban Survey by Staffordshire County Council (Shaw, M. and Taylor, D. 2011) which is not repeated in full here. What follows is a summary of this report with recent additions identified through the Archaeology Data Service database, the Historic Environment Record and the Church archive.
- 3.1.2. There is no evidence at present to suggest that Newcastle-under-Lyme is Roman or Prehistoric in origin and its name is not mentioned at the time of the Domesday survey (1086). However, it has been suggested that settlement in the Newcastle area may have been recorded in the entry for Trentham; the town later formed part of the Trentham manor. The place name Newcastle clearly originates with the building of a castle probably in the post-conquest period. The element 'under Lyme' probably relates to the Lyme Brook which is a significant feature in the landscape. Newcastle does not have a separate entry in the Domesday Book (1086), but as Trentham was the royal manor at this date and its entry seems to imply at least two settlements, then Newcastle may have been the location of a local trading centre (Blake and Langley, 2009, 15).
- 3.1.3. The castle was first recorded in a charter dated 1140-6 when King Stephen was restoring it to Ranulf de Gernon, the Earl of Chester. A motte and bailey castle was built during this time, originally from earth and timber, being rebuilt from stone from the late 12th century onward. The castle was at its height throughout the medieval period, during which time it was associated with a large castle pool which surrounded it. The castle continued to develop until around the 17th century, although by this time it had lost its influence and had deteriorated. The motte survives within the present Queen Elizabeth Park, however the full extent of the castle is not currently understood (Pape, 1928).
- 3.1.4. Soon after the castle was built in the late 12th century, the settlement of Newcastle came into existence developing from a planned market borough. This settlement began at the end of the causeway leading to the castle and extended along the section of Lower Street formerly called Holborn. Rectangular burgage plots between 140-200 feet were deliberately laid out on the ridge above the Lyme Valley. The main centre of the population then shifted to the High Street and the Ironmarket. St Giles Church was probably constructed as part of this High Street development (Plate 1).

3.2. Cartographic evidence

- 3.2.1. The map evidence for Newcastle-Under-Lyme begins with Forbe's map of 1691. This map details the main streets, church and castle pool, but is schematic and provides little detail (Plate 2). St Giles is marked on this map and at this period is a prominent feature of the town. This map drawn prior to the reconstruction of St Giles in 1720-21, unfortunately does not present an accurate representation of the church at this time. A later sketch map of 1785 provides increased details of the road layout and buildings again in schematic form (Plate 3) and shows a more accurate representation of the town. The church can be seen within the boundaries of a square churchyard, on a plot of land between Church Lane, Bridge Street and Lower Street.
- 3.2.2. Several maps from the 19th century survive, these document the developments which occurred at St Giles' Church at this period, and also those developments which occurred in the immediate surrounding area, including the demolition of the houses around Lower Street and the widening of Church Street. Malabar's map of Newcastle-under-Lyme of 1847 (Plate 4) shows the large open churchyard surrounding the 18th century Georgian church. The shape of the church is clearly visible in plan. In 1873, prior to the demolition of the 18th century church and the redevelopment of its churchyard a plan was made detailing the locations of all the memorial stones which surrounded the church (Plate 9). This plan was accurate enough to show both the size of the stones and identity of the individuals marked on the memorials. Each stone was numbered (up to about 800) and a list compiled to record these before they were removed. Further plans of this Georgian church have also survived, preserving a representative record of the building (Plates 10 & 11).
- 3.2.3. A further plan was compiled in 1880 (Plate 16) which show in detail the redeveloped church and the resulting spoil mounds. This plan also contains an index of names in alphabetical order on memorial stones to show the new positions within the churchyard (by index letter). Their old positions in the churchyard are also noted, as it is indexed using the numbering system from the 1873 plan. The ordnance survey plans from 1889 onwards show the redeveloped church and newly laid out churchyard boundaries. The plan of the church which is recognisable to that of today's church, clearly differs from that of the previous church (Plates 5 & 6). In 1898 the churchyard was redeveloped further. Portions of land to the north and west of the site were acquired and became part of the churchyard (Plate 17).

3.3. A history of St Giles Church

- 3.3.1. Much has been written regarding the historical background of St Giles Church. This research was primarily undertaken during the 19th and early 20th centuries and covers in detail, elements of the church which are documented, such as the clergy members and the internal particulars of the church. With regards to the appearance of the early church, the information that exists uses documentary sources and observations recorded during the excavations and erection of the new church, to depict the most accurate account available. However, the physical evidence of the church remains elusive and an exact portrayal of its appearance is not currently possible. No plans, or illustrations have yet come to light of this early church, so we must rely on evidence from elsewhere.
- 3.3.2. Mention of a chapel at Newcastle first occurs in an agreement dated between 1175 and 1182. Throughout the medieval period it remained a dependant chapel rather than a church at the centre of its own parish. During this period, it belonged to Trentham Priory, and by the late 13th century it was subordinate to St Peter's Church in Stoke. The implication from this agreement is that it was founded prior to the late 12th century by reasoning as to promote the growth of the town. Newcastle remained a chapelry dependant on the church of Stoke until 1807. At this time a rectory was established when a separate parish was constituted (Blake and Langley, 2009, 23).
- 3.3.3. The church is dedicated to St Giles, the patron saint of beggars and cripples, who died at his abbey of Nismes around the year 724. The exact date of the establishment of the church is unknown but the earliest extant element of the current St Giles' church is parts of the tower which is 13th century in origin (c.1290), with earlier 12th century architectural elements known to have been discovered, during the redevelopment of 1873 a section of zig-zag moulding from the late 12th century chapel was recovered. This church was redeveloped in the 14th century and at this time the tower was raised to its existing height. The size of the tower which has survived has led to the suggestion that the church to which it belonged was a substantial building (Pape; 1938, 17). The church held local importance throughout this period and until the building of the Guildhall in the middle of the 13th century and most likely after that event, the church was the meeting place where the burgesses transacted their business. Around and against the walls, stalls were set up for the sale of items such as meat and bread.
- 3.3.4. Early records of this church mention bells (1503) and a clock (1589). In 1677 a loft and library were put in at the lower or west end of the church (Pape, 1967; 8). Evidence has suggested that the church has even earlier origins.

- 3.3.5. Throughout the 17th century the corporation of Newcastle was constantly levied for the repair of this medieval church. In 1719 a request for a faculty was made to the bishop of Coventry and Lichfield *'to take down the entirely the church or chapel which being so decayed and dilapidated by length of time that it was incapable of being repaired'* (Pape, 1938; 1). A new church was designed and constructed by William Smith. During the demolition of the medieval church the contractor tasked with job was; *'allowed to take to his own use all the stone, timber, lead, tiles, iron, pews, seats, and all other materials belonging to the old church, saving and excepting only three bays of the roof then lying and being on the north side of the old church. Also William Smith was to carry away all the rubbish which was not used in filling of the foundations and raising the height of the floors of the new church and chancel'* (Pape 1938, 147). The medieval tower was however, retained and incorporated into this new building (Plates 7 & 8).
- 3.3.6. Constructed at a cost of £1400 in 1720-21, the church was erected in place of the medieval church in the Georgian style fashionable at the time. It occupied a much smaller ground plan and used brick with stone dressing as its main construction materials. The new church had three galleries on its north and south sides and had high seating which could accommodate around 890 people. The nave was of four bays and it contained a semi-circular chancel. Above the east window of the chancel, was a pelican carved in oak, feeding with her life blood her three young ones in a nest (Plate 12). This hung over the communion table and is dated 1786, it is however carved in the medieval fashion (Historic England 2016). This survives today as the church lectern, having been converted as such by the Sunday school teachers and children in 1876 (Plate 13) (Morris; 2005, 13). Many mural monuments were placed throughout the church, these were set into the walls and floors throughout. At the time of demolition many of these were recovered and stored, for reuse in the new church.
- 3.3.7. In 1724, soon after the construction of the new church, it was agreed that making graves near to the foundations of the church was dangerous to the building. The church sexton was required to *'make no grave within a yard at least of the church wall'* (Pape; 1938, 148). The churchyard which surrounded the 18th century church had been used as a burial ground for all the previous church congregation and continued to do so thereafter. By 1849, the churchyard was said to be much overused and according to William Lee, there was a *'strong feeling in the town that the crowded state of the parish church ground has been very injurious to the inhabitants in its vicinity... I found on inspection that the parish burial-ground is 9 or 10 feet above the level of Church-street and that it has all the appearance of being over-crowded. The soil is mixed, of clay and the disintegration of the lower red sandstone. The area, exclusive of the church, is 4099 yards; the site of the church,*

711 yards; the whole being less than one acre. The aggregate number of internments in the last 20 years is 3838. Average yearly 192. Exclusive of the site of the church there would be 1757 graves of 7 feet by 3 feet each, if they were packed closely together up to the very walls, and no room lost' (Lee, 1849).

- 3.3.8. The churchyard was also said to have been the main contributing factor to the many deaths from typhus fever, diarrhoea and cholera which occurred in 1847 and 1849, due to the pollution of the water supply. Evidence from a Dr Wilson at the time stated *'Nobody can for an instant imagine it safe to have parts of the human body in a state of decay issuing through the walls, and flowing down the gutters. In corroboration of this there have been no less than 10 deaths from cholera in Church Street'* (Wilson in Lee 1849). These observations were corroborated by a surgeon named Mr Spark *'The parish-church burial ground I know to be very crowded. I have seen the fluid coming through the churchyard wall. I think it ought to be closed.... In the first instance the cholera broke out near the old churchyard, and seemed to spread around it, to wit in Blue-Ball yard, and from thence in Bridge Street, Church-lane and along Lower-Street'* (Spark in Lee 1849). All the names of these streets were those occupied by the poor who lived in unsanitary conditions and had no alternative but to drink from the polluted water supply.
- 3.3.9. Various other unsavoury practices are reported to have been undertaken within the churchyard of St Giles. The preliminary report into the conditions of the churchyard by William Lees in 1849 was re-examined and in 1851 the mayor of Newcastle, Edward Wilson stated; *'Internments have continued from that time to the present in all of them. Any alteration in their condition will therefore be for the worse. I have nothing further to add, except that I have been at a funeral since you visited this town, where the body was not enclosed in lead, the coffin was certainly within a foot, I should think within nine inches of the surface.'* (Wilson in Lees 1851). It was also reported by Mr Robert Chapman that *'some time ago it as discovered that there had been a practice of burning old coffins to get rid of them. Believe it prevailed to a considerable extent and the late beadle said that it had been practiced for many years. The burning was done underneath the church to light the fires that warmed the church.... The beadle said in his defence that during the seven or eight years he had been beadle he had spent a shilling of two in firewood. We did not ascertain how he got the timber...'* (Chapman, in Lees 1851)
- 3.3.10. St Giles' burial ground was ordered to be closed soon after (1851) This order however was not fully complied with and a further order, to take effect in 1865 was subsequently issued. Burials occurred elsewhere from this point on.

- 3.3.11. The early Georgian church continued to be the place of worship, until the later 19th century, by which time it had become dilapidated and unsuitable for the demands of the increased Newcastle population. The original reasons for the redevelopments were recorded as follows; *Whereas it hath been presented unto us on the part and behalf of the Reverend Henry Veale, clerk, Bachelor of arts Rector of the parish of Saint Giles Newcastle in the county of Stafford and Diocese of Lichfield and John Thomas Blood and William Frederick Rimell the churchwardens of the said parish that the present pew accommodation in the parish church of saint Giles Newcastle is insufficient for the use of the parishioners and inhabitants of the said parish, that the said church is in much need of restoration and repair and it is very desirable that the said church should be enlarged restored reseated and refitted.....it was resolved that the plan of Sir George Gilbert Scott (submitted to the meeting and hereto annexed) for the enlargement and restoration of Saint Giles church should be adopted and carried out by voluntary subscriptions, that application should be made to the Bishops Consistory Court at Lichfield to authorise and empower the Rector and churchwardens to carry out such plan, and also to make certain alterations in the churchyard of the said parish of saint Giles Newcastle aforesaid....* (William Fell, Registrar 1873).
- 3.3.12. However, there appears to have been no sentiment lost on the building which was subsequently derisively described as a hideous brick monstrosity. The fate of the 18th century church was therefore sealed. Sir George Gilbert Scott had reported in August 1872 on the dilapidated state of the church stating;
- 3.3.13. *'The tower alone remains of the ancient church. This is a vast and originally a noble structure, still structurally strong, though externally sadly decayed. This is, in its lower parts, of the 13th century. Its middle stages are of the 14th, and some parts of somewhat later date. It is probable that the Church till destroyed about 1720 was of corresponding character, and that the whole formed a noble edifice'* (Scott, 1872 in Pape; 1938, 25).
- 3.3.14. It was agreed that the church be rebuilt and the tower restored, as it was this feature which was held in high regard by Sir George Gilbert Scott who stated that it was *'one of the noblest structures of the kind in the Midland counties'* (Scott in Fenton 1876, 1). A plan of the new church was submitted by Scott in November 1872 which was approved and the church faculty sought. The plans involved enclosing a sufficient space of the churchyard for widening Church Street, to *'disinter any remains found in any area required for foundation of the building, and to reinter the same in consecrated ground; to level the surface of the churchyard, and to rearrange the tombstones in a proper and suitable manner; and to make the necessary new paths, and erect*

suitable boundary walls. A faculty was arranged in February 1873. In that month a crypt was prepared for the reception of coffins and remains to be disturbed. (Staffordshire Advertiser, 1876) (Plates 14, 15 & 17). At the time of these reconstructions a plan and associated index of the memorial stones to be disturbed was completed (Plate 16). This foresight has enabled these memorial stones and therefore the associated burial locations of the individuals to be preserved.

- 3.3.15. Another source records that prior to the excavation of the foundations in anticipation of the disturbance of remains *‘Three large crypts were constructed for the reception of coffins and other remains disturbed in making the foundations and clearing the site for the new church’*. (Coulam, 1908, 115) No record survives as to the location of the crypt or crypts, or any information regarding the quantity or type of burial disturbed. The crypt (or crypts) were however, located outside of the footprint of the new church and it is highly likely that they would have been located within the confines of the consecrated burial ground.
- 3.3.16. Three large mounds of spoil resulted from these extensive reconstructions. These mounds can be clearly seen on John Blood’s plan of 1880 (Plate 16), the purpose of which was to record a list of the newly relocated memorial stones.
- 3.3.17. The three mounds were located on the north, east and south-west sides of the churchyard. They appear to have originally had steps leading up the sides to provide access to pathways along the top, the northernmost spoil mound had three access ways. Each of the mounds appeared had memorial stones laid up against the sides of the mound and in the case of the northern and south-west mounds, these had also been laid along the top of the mounds. These memorial stones had been recovered from elsewhere on site during the rebuilding works. It appears that these mounds were very large and originally occupied almost the entire churchyard.
- 3.3.18. In 1874 one of these mounds had a brick chamber built within it to store monuments removed from the previous church, later in 1912 the majority of the monuments were relocated to the present church. This brick chamber survived up to the present day and was exposed in the excavations.
- 3.3.19. The churchyard was enlarged in 1898 to provide space for levelling the mounds on the southern and south-western sides of the church, thus leaving one final mound on the north side until the present day. The western end of this northern mound was also reduced at this time (Plate 17). Much of the material from the mounds went into the newly acquired portions of the churchyard as these were at a significantly lower level. All of this work was initiated by Francis Stanier whom,

in 1894, had set about repairing the tower. In doing so he was of the opinion that the mounds impeded on the views of the church. This led to him seeking church approval for the removal of these. During these developments he sought confirmation that the mounds had not been recently used for burials. A letter from R.C Herran dated June 1897 survives which states; *'I see no objection to the removal of the present boundary wall, or the mounds as proposed. I presume no internments have taken place in the excavated soil since the church was rebuilt'*. Conditions were placed on the removal of these mounds, one of these conditions was the replacement of any gravestones which were to be disturbed, to suitable positions within the limits of the churchyard. A further condition was *'that all human remains which may be disturbed will be carefully removed and reverently re-interred in the newly consecrated ground or in other parts of the said churchyard under the supervision of the Rector and churchwardens or as the court may direct'* (Lichfield Consistory Court records, May 1897).

- 3.3.20. The surviving mound on the northern side of the church, is the subject of this archaeological research. Since 1898 it has remained virtually untouched and its continued existence is documented in various photographs from the following years. The northernmost mound can be seen in a photograph from May 1910. This illustrates the memorial stones which have been re-laid upright around its base and there is a large amount of tree growth on the top (Plate 18).
- 3.3.21. During the demolition of the Georgian Church in 1873 *'large quantities of worked and other stones were found, which proved to be the remains of the original edifice. These stones in 1720 were used as rubble in constructing the new walls, and being thus a second time preserved, furnished materials from which Sir Gilbert Scott has largely copied and used in carrying out the details of the present magnificent building in accordance with the character of such remains. The carved stones found were chiefly jambs and mullions of windows and doors, portions of the original shafts, tracery of early English windows, the arches and jambs of Sedilia, &c., &c. The various articles brought to light prove beyond all contradiction that the regional church was in the early English style of architecture, and fixes the date of erection towards the middle of latter end of the 12th century'* (Fenton 1876, 2). The carved effigy of a priest or Knight and a broken stone coffin lid with a crude cross carved on to it were also recovered when the foundations were of the church were being excavated. The effigy survives today within the church.
- 3.3.22. The new church was a much enlarged building, designed to be faithful to the medieval church and its surviving tower and to accommodate the growing congregation (Plates 13 & 14). It was built to the design of Sir George Gilbert Scott and was completed in 1876 at a cost of £17,000. The work

of rebuilding was carried out by Mr Horsman of Wolverhampton. The new church was extended to a length of 150ft by 75ft in width. The height from the nave floor to the roof apex is 64ft 6in. The exterior of the church is built of stone from the Blythe marsh stonehouse quarry and is constructed in the style of the late 13th century, many of the stone cameo, out of the old church have been relocated within the church. The internal masonry is Bath stone ashlar. Scott was one of the leaders of Gothic Revival and he based his plans on the medieval arch which leads into the tower. It consists of the tower, nave with two aisles, clerestory and chancel. It very different in nature to that of the church which predated it. The stained glass memorial windows and floor tiles were also added at this time.

- 3.3.23. The external stonework of the tower deteriorated throughout the 19th century. In 1893, the tower was said to be 'in a somewhat dilapidated condition, with its lower section supported by strong wooden props'. The tower was re-fronted and restored in the following year.

3.4. Archaeological Background

- 3.4.1. In August 2014, the Centre of Archaeology was commissioned by the St Giles Community Heritage Project to undertake an archaeological watching brief during geo-technical test pitting at the site. The archaeological watching brief successfully monitored the excavation of five test pits across the exterior land surrounding the church building.
- 3.4.2. The test pits identified significant hardcore deposits beneath the tarmac of the existing car park and access road. Two archaeological features of importance were identified (Test Pits 1 and 3). In Test Pit 1, the upper surface of a probable brick vault was encountered. The plan of St Giles churchyard in 1873 clearly depicts graves in this area and it is highly possible that these graves included tombs and family vaults. As only superficial groundworks are proposed in this area to replace the existing tarmac, it is unlikely that the brick vault will be disturbed during subsequent works. A line of in-situ bricks were also encountered in Test Pit 3. An interpretation for this feature is difficult, but as outlined previously, work in this area is limited to replacing the existing tarmac and no excavations will occur in this area (Sturdy Colls, 2014).
- 3.4.3. In January 2015 an additional evaluation project was commissioned with the aim to establish the materiality of the spoil mound present on the site and confirm the belief that the earthwork was formed from demolition debris from the previous church which stood on the site, and to assess the likelihood of burials within the length of the mound. Three test pits 1m² were excavated by hand along the length of the mound.

3.4.4. No archaeological features or human burials were identified in the test pits excavated during the course of this archaeological evaluation. However numerous fragments of disarticulated human bone were recovered. These remains did not represent complete skeletons or burials. Each context observed was modern in date and confirmed that the mound consists of demolition material dating the period of major reconstruction in the 1870s. This was supported by the material culture identified in each test pit. Significant amounts of building debris and fragments of tombstones were recovered, illustrating that they were displaced from their original context (Squires, 2015).

4. AIMS AND OBJECTIVES

4.1. The principal aim of the investigations was to determine the character, state of preservation and the potential significance of any buried remains. The results were used in the mitigation strategy for the redesign of elements of the development.

4.2. More specific aims were to:

- Recover architectural and disarticulated human remains from within the mound.
- Undertake a detailed sieving project with the assistance of local community volunteers.
- Complete a detailed research study and then ultimately rebury the human remains.

5. METHODOLOGY

5.1. The proposed development area covered approximately 1550m². The entire spoil mound was reduced across the site (Plate 22). The area affected by the archaeological excavations totalled approximately 800m² (40m x 20m). This provided a 53.33% sample of the total area. The volume of redeposited soil contained within the spoil mound was approximately 7200m³ (40m x 20m x 9m) (Figure 1 and Appendix 4). At its highest point the mound rose approximately 3.2m above ground level to 129.2m AOD. The archaeological investigations of the site were separated into several distinct elements, as set out in the Written Scheme of Investigation (The Centre of Archaeology). The various stages are detailed below;

5.2. **Study and interpretation phase of the Georgian and Victorian Memorial Stones.** A comprehensive record of the surviving memorial stones was completed in advance of the evaluation phase of archaeological investigations. This was undertaken by the St Giles Heritage

Project Team with support from volunteers. The location and specific dating and visual details were recorded in a database for each of the memorial stones. This was to support the future re-location strategy of the memorial stones and to record these for posterity. The removal of these memorial stones was agreed through planning permission prior to the start of the project. A large percentage of the memorial stones were located in secondary positions, having been moved during the redevelopment of the church in the 19th century, this applied in particular to those stones laid against the base of the mound. Please refer to the St Giles Heritage Project team archive for further details of these.

- 5.3. **Evaluation Phase.** The first stage of the archaeological investigations, undertaken in January to February 2015, included an initial evaluation phase. Several small 1m x 1m test pits were excavated across the site in advance of the redevelopment. These test pits were placed at positions which provided representative information about the site. These test-pits were able to provide information regarding the underlying deposits and the preservation of buried features. The results were able to assist in formulating a mitigation strategy for the proposed development of the churchyard (see above for additional information).
- 5.4. **Watching Brief phase.** During May and June 2016 an archaeological watching brief was undertaken on the site. The purpose of this watching brief was to observe the machine removal of the spoil mound which previous archaeological evaluation had shown to include human remains and fragments of architectural stone. A large 360° tracked excavator was used to remove the spoil mound overburden down to the buried ground level. The spoil was gradually removed by machine and placed into trucks and removed from site. Throughout this process the machine was watched, the spoil was inspected and architectural stones and disarticulated human remains were recovered. Two purpose built brick structures were also discovered within the mound itself. These were built at the time of the mounds creation in 1874.
- 5.5. **Excavation Phase.** The excavation stage of archaeological investigations, undertaken between throughout June 2016, commenced after the main bulk of the spoil mound had been removed under archaeological watching brief conditions. Further archaeological advice was sought and mitigation was agreed with the archaeological manager, contractors and representatives from the Church of England. The original churchyard ground surface was exposed after the mound was stripped and as a consequence many in situ burials were identified. The burials took two discrete forms, those which were identified by their grave cuts and those which were identified by the partial exposal of the skeleton. In the majority of cases the architectural plans were adjusted to

avoid disturbing these remains, cases but where burials were unavoidably close to the surface and the remains were exposed they were excavated.

- 5.6. **Community Sieving and recording Phase.** The community sieving and recording phase ran in conjunction with the excavation phase of the site activities. Approximately 20% of the soil from the mound was stored on site and was sieved to recover all artefactual evidence contained within. The sieves used were of the 10mm mesh type suitable for the recovery of disarticulated human remains and artefacts. The volunteers were also involved in a variety of other projects including the finds processing and the recording of the recovered architectural elements.
- 5.7. All topsoil and modern overburden was removed using a 360° tracked mechanical excavator with a toothless ditching bucket, under direct archaeological supervision, down to the top of the uppermost archaeological horizon or the subsoil. Subsequent cleaning and excavation was by hand. A representative sample of archaeological features and deposits were manually sample excavated. This was done to sufficiently define their character and to obtain suitable dating evidence using the following strategy;
- 100% of human burials which had been disturbed during the ground stripping process
 - 50% of pits under 1.5m or postholes
 - 25% of pits over 1.5m including a complete section
 - 20% sample of linear/ curvi-linear features under 5m in length
 - 10% sample of linear/ curvi-linear features over 5m in length
- 5.8. Archaeological deposits were not completely excavated unless it was deemed unavoidable. The depth of archaeological deposits across the site was assessed, and it was not necessary to excavate the site down to natural.
- 5.9. All stratigraphic sequences were recorded, even where no archaeology was present. Features were planned at a scale 1:50, and sections drawn of all cut features and significant vertical stratigraphy at a scale of 1:10 and 1:20. A comprehensive written record was maintained using a continuous numbered context system on *pro-forma* cards. Written records and scale plans were supplemented by photographs using black and white monochrome, colour slide and digital photography.

- 5.10. Recovered finds were cleaned, marked and remedial conservation work undertaken as necessary. Treatment of all finds conformed to guidance contained within the Centre of Archaeology Fieldwork Manual and *First Aid for Finds* (Watkinson and Neal 1998).
- 5.11. Lifting of human skeletal remains was kept to the minimum which is compatible with an adequate evaluation. Burials were recorded in situ and subsequently lifted, washed, and packed to standards compatible with *Excavation and post-excavation treatment of cremated and inhumed human remains* (McKinley and Roberts 1993). Excavation of human remains confirmed with advice provided in *Church Archaeology: its care and management* (Council for the Care of Churches 1999), *Human bones from Archaeological Sites* (English Heritage 2004) and in *Guidance for best practice for treatment of human remains excavated from Christian burial grounds in England* (English Heritage 2005). After analysis these human remains were buried back on the site in a large charnel pit. They were reburied in degradable cardboard boxes in accordance with church practices and where articulated skeletons had been removed these remains were reburied as whole entities.
- 5.12. The full site archive includes all artefactual remains recovered from the site. The site archive will be prepared according to guidelines set down in Appendix 3 of the Management of Archaeology Projects (English Heritage, 1991), the Guidelines for the Preparation of Excavation Archives for Long-term Storage (UKIC, 1990) and Standards in the Museum Care of Archaeological collections (Museum and Art Galleries Commission, 1992). The paper archive will be deposited with the appropriate repository subject to permission from the landowner.

6. RESULTS

6.1. Introduction

- 6.1.1. Full details on individual contexts and features are available in the project archive. The following section outlines the main excavation area and both feature (cut) and context numbers are highlighted in bold. The following archaeological descriptions are illustrated in Figures 3 and 4.

6.2. Main Excavation Area

- 6.2.1. The natural subsoil or redeposited natural (**1002**) was reached approximately 1m below ground level at a height of approximately 125m AOD. This was primarily exposed at the north-east of the

site, where this layer was encountered immediately beneath the removed spoil mound. This layer consisted of orangey-yellow, sandy- clay with occasional inclusions of small rounded pebbles. At the location where this layer was most clearly defined, there were many clear grave cuts present at this level, these had been cut from a higher level. It was also around this level that medieval ceramics were recovered, the interpretation being that, the uppermost part of this deposit was an interface between a now removed medieval occupation layer and the natural deposit beneath. The pottery from this layer has been dated to the 13th century at the earliest, with most belonging to the 13th to 14th centuries. There were also occasional sherds dating to the 15th-16th century. The majority of the sherds were heavily abraded and were made locally.

- 6.2.2. Cut into this deposit were a large amount of undisturbed grave cuts containing inhumation burials. The large majority of these were visible in the north-eastern part of the site, where the natural (**1002**) ground was exposed. These cuts, numbered **1003- A, 1005- B, 1007- C, 1009- D, 1011- E, 1013- F, 1015- G, 1017- H, 1019- I, 1021- J, 1025- K, 1027- L, 1053- M, 1055- N, 1057-O, 1059- P, 1061- Q, 1063- R, 1065- S, 1067- T, 1069- U, 1071- V** and **1073- W** varied in size and shape and all remained unexcavated. During the development, a trench was excavated around the boundary of the churchyard for the purpose of laying the foundations of a retaining wall. This trench was taken down to the level of the natural ground level, whereupon several grave cuts were exposed, again orientated north-south. A further three of these burial cuts were identified further north against the west facing boundary wall (**1050**) these burials- **1077- X, 1079- Y** and **1081- Z**, were all orientated in the same direction as the other burials, were cut at the same level and remained unexcavated. Following continued excavation of the south-eastern most corner of the site two further graves were identified (**1085- i** and **1087- ii**). Grave Cuts A to L were all viewed in their entirety and these could be characterised by the many details which were present (Plate 26). The grave cuts were all generally small, with the exceptions being grave cuts **F- 1013** and **G- 1016** which were just over 2m in length x 0.6m in width. These would have been large enough to accommodate adult individuals. The other grave cuts ranged in size from 0.7m x 0.2m to 1.7m x 0.45m. The smallest grave cuts were clearly used to accommodate infants and the others were of a size suitable for juveniles and adolescents (Plates 26 & 27). This makes it likely that this eastern area of the churchyard was specifically used for the burial of the young at St Giles Church.
- 6.2.3. When overlain onto the 1873 plan (Figure 4), it becomes clear that the majority of the graves identified during the excavations were unrecorded. Those on the 1873 plan are also primarily orientated north-east to south-west. There are also relatively few recorded graves in the far

eastern corner of site, or up against the boundary, unlike the true quantity recorded in the excavations. This supports the theory that the graves predate the 18th and 19th centuries.

- 6.2.4. Evidence for a robbed out foundation trench (**1023** and **1029**) was identified at the easternmost extent of site, within the area of the discrete graves. At least two of these graves, which were of an unknown burial date, had truncated this foundation trench. Two test slots were excavated through this foundation trench. Evidence of a sandy mortar was identified on the base of the trench and at various locations, dressed red sandstone was still in situ. A fragment of pottery was recovered from within this sandy basal fill (**1024**) providing a securely stratified date of construction. This sherd has been dated to the later 17th to 18th century. Overall the exposed section of the foundation trench was approximately 7m in length with a 2m break part way along it. It continued into the trench edges outside of the excavation edge. It was approximately 0.5m in width and it survived to a depth of 0.14m. It appeared to have a right angle return at the eastern end, the break in the trench may have been the location of a doorway. It is thought that this represented the remains of the foundations of a building associated with either the early church in its final years or a building constructed around the same time as the Georgian church. It was constructed on the same orientation, but was likely to have been a separate building located away from the main church complex (Plate 28). Buildings have been excavated in other churchyard, showing that they were much used places where other activities took place not simply the burial of the dead. Some of the buildings were thought to have had religious functions, others may have housed activities associated with the ecclesiastical functions (Hadley; 2001, 176).
- 6.2.5. Adjacent to the distinct group of undisturbed burials on the eastern side of site, was evidence of what appeared to be a large feature with defined edges (**1031**). There was a clear straight edge on the eastern side with indistinct edges on the southern and western sides. The feature appeared to run beneath the trench edge on the northern side making it extremely large. As measured it was 7.5m in length by at least 4m in width, the depth remained unknown. The feature was filled with a dark brown organic sandy silt and clay deposit (**1032**). During cleaning of the feature, there was an abundance of ceramics, building materials and human remains. Predominantly all the human remains were disarticulated, there was however, possible partial articulation of some of these. Perhaps these had been moved from their burials elsewhere to be reburied in this feature. Partial articulation may have been possible if the corpse was not buried for any long period of time and was moved or disturbed during the decomposition process. Due to modification of the development plan it was deemed appropriate and practical to leave this pit *in situ* and avoid further excavation. Specific details regarding the feature, therefore remain speculative. There are

however, several possibilities for this feature. The first possibility is that that this was a charnel pit/ mass grave. Alternatively, this feature may represent the result of many years of burial on the site (Plate 32).

- 6.2.6. The natural deposit (**1002**) and burial cuts were sealed by a buried ground layer (**1001**) which would have formerly existed across the entire excavation area within the grounds of the former churchyard. The layer was not clearly differentiated by colour or composition from the layer above, but was however, more compact. Within this deposit there were human remains and intact inhumation burials which had been buried beneath the spoil mound in the 19th century. This layer was very mixed and was made up of sandy-silt with inclusions of lumps of clay, angular and rounded pebbles. The mixed nature of the deposit was a result of the excavation of material from graves over the lifetime of the church.
- 6.2.7. Several grave cuts were exposed which had truncated the buried ground (**1001**) and had also cut into the top of the possible charnel pit/ mass grave (**1031**). The reason that these were identified at such a high level is that originally, they had not been buried at any great depth below the ground surface. It is likely that these burials were only ever dug to a foot or few feet below ground level. This is testified to in sources from the 19th century and due to the considerable overfilling of the churchyard in its latter years, there were burials at a very shallow level. This is seen in the source written in 1851 '*... I have been at a funeral since you visited this town, where the body was not enclosed in lead, the coffin was certainly within a foot, I should think within nine inches of the surface*' (Wilson in Lees 1851). Despite the burial ground being ordered to be closed soon after (1851), it does not appear that this was adhered to until 1865.
- 6.2.8. Five of these burials were excavated (**SK101- 1036**, **SK102- 1034**, **SK103- 1038**, **SK104- 1041** and **SK105- 1046**). This was because they were most at risk from the development, as parts of the skeleton were observed close to, or at the surface. Detailed analysis of these individuals has been undertaken and is recorded in Section 7. The ceramic assemblages recovered from within each of these grave cuts was similar. The ceramics recovered included 19th century blue and white Staffordshire white ware, backwares and slipwares. The location of these burials along with the associated ceramics and documentary sources makes it highly likely that these were some of the final burials interred in the churchyard in the 1850's and 60's. A further exposed inhumation burial (**SK106- 1048**) was exposed at the north end of the west facing boundary wall (**1050**), it was decided to leave this in situ as it would not be disturbed by the developments. Each of these burials had become disturbed through continued use of the cemetery and the passage of time. In

all cases, the burial cuts for these inhumations were clear, however evidence for coffins and coffin furniture was less clear. Within these burial cuts there was evidence of coffin nails and **SK102**, **103**, **104** and **105** also contained evidence of degraded fragments of coffin plates. A shroud pin was recovered during the excavation of **SK103**. It is a possibility that some of these individuals were buried in shrouds within wooden coffins and some were buried without coffins in just a shroud. The existence of coffin furniture in the general area could also have been as a result of disturbance and re-cutting. Each of the burials contained artefacts, such as pottery and clay pipe fragments. All of these artefacts were 18th to 19th century in origin and have ended up in the within the grave cuts through backfilling. It is likely though that this provides some clarity about the date of interment of these individuals. See Table 19 for more details regarding the contents of these grave fills.

- 6.2.9. During the excavation of the foundation trench along the boundary wall a large number of infants and juveniles remains were recovered at a depth of between 1-1.5m beneath ground level. The large quantity of disarticulated remains represented many individuals buried around the limits of the churchyard. The burial of the young around the edges of churchyards is a known phenomenon, often occurs at around the periphery due to parents wanting their child to be buried within the area of consecrated ground, and having not had the chance for a baptism, secretive burial may have been necessary. Until recently, unbaptized infants, were refused funerary rites and could not be laid in consecrated ground. Occasionally the church supplied a remedy, one custom was which is attested to from the Victorian times to the 1980s, saw undertakers place the infants in the coffins of unrelated adults awaiting burial, this would have seen them buried in consecrated ground (Howarth and Leaman; 2013, 454).
- 6.2.10. The wall which formed the northern and eastern boundary to the churchyard was identified beneath the spoil mound, having previously been demolished, probably around the 19th century. This wall (**1050** and **1052**), was constructed of hand-made orange red-bricks set in an English garden wall bond within lime mortar. Part of the construction cut was identified along the east west part of the wall (**1075**). At the far northern end, this wall was constructed upon an earlier red sandstone foundation wall (**1051**). This wall was bonded with clay and had a subtly different orientation. The construction fabric and level that it was identified makes it likely that this was a surviving element of the earlier medieval boundary wall which had been replaced with the brick wall in the 18th century.

- 6.2.11. A cut for the modern tarmac road (**1083**) was identified in the south-eastern corner of site. This had truncated earlier burials **1085- i** and **1087- ii**. It had been backfilled with a large quantity of rubble backfill (**1084**).
- 6.2.12. The main deposit across the site was that which made up the spoil mound (**1000**). This redeposited material covered the original 19th century ground surface and originated in 1874 during the site clearance and demolition of the Georgian church, it had remained virtually untouched since 1898 when the western part of the mound was reduced. The top of the mound was surveyed at a height of 129.720m AOD, over 3.5m above ground level. It was made up of material sourced from a variety of locations, within and around the vicinity of the church. This mound represented the sole surviving spoil mound from this period, it is known that there were originally three, the other two having been levelled in the later 19th century. Originally this mound would have had access to walkways along the top of the mound where memorial stones had been relocated, some of which were exposed during the excavations (Plate 22). The walkways and access steps had since disappeared.
- 6.2.13. Throughout the mound there were significant amounts of demolition material, namely bricks and masonry fragments, large quantities of disarticulated human remains and artefacts dating from the medieval to modern (19th century) period. The mound deposit was primarily made up of a mid-dark brown, silty clay and a red-orange loamy clay. The latter represented redeposited natural ground and where this was present in the mound, there were higher concentrations of human bone as a result of the burials which were once dug to a significant depth within it. During the watching brief element of the removal of the spoil mound a large amount of the human remains were recovered, further examples were discovered during the sieving element of this project. It is estimated that the large majority of the human remains thought to be present within this mound were saved during the course of these archaeological works, these have now been reburied in a large charnel pit on the redeveloped site. What has become clear from the documentary research is that the human remains within this mound may have been moved on several occasions previously and that they could represent individuals from throughout the historical life of the church until the churchyard was no longer used for burials in the 1860s.
- 6.2.14. A large brick building (**1045**) was constructed into the western end of this mound. The western face was left exposed to provide access, but the others had been covered by soil and buried within the spoil mound. The building was constructed in 1874, its purpose was to house monuments and memorials removed from the previous church during the redevelopments. Over

the life of the building the concrete roof, which would have originally been open to the elements, had become entirely covered by dirt and debris. The memorial storage building was around 8m in length by 4.5m in width and 3.5m in height. The brick bond used was irregularly spaced headers and stretchers, no effort had been made to make the building architecturally appealing and the walls had not been pointed. In 1912 the majority of these monuments were relocated back to the church. Later, this building became used to house an oil storage tank, used for the church oil heaters. The access door was blocked up around the 1960's. During its demolition, several fragments of memorial stone were recovered, many made of white marble, none however had survived in a complete form (Plate 23).

- 6.2.15. A further large brick building (**1043**) was exposed at a similar location at the western end of the mound. It had been constructed opposite the church porch on its northern face, but was designed to remain unseen. Unlike the monument storage building it had been entirely covered by the spoil mound and therefore its existence was previously unknown. It is likely that this building represented one of the crypts known to have been purpose built in 1873 as a repository for the human remains disturbed in the church reconstructions. It was around 4.45m in length by 2.7m in width and at least 1.2m in height constructed in an English garden wall bond. It was divided into four equal chambers and there was no evidence of any collapsed roof. Each chamber had been deliberately filled with quantities of building rubble, soil and large quantities of disarticulated human remains (Plate 24).
- 6.2.16. The greatest quantity of human remains were in the easternmost chamber (chamber 1), where it was filled almost entirely from its base to the top. It was also observed that each chamber contained a greater quantity in the southern half of the chamber. Lesser amounts were identified in chambers 2, 3 and 4. Chamber 4 held the smallest quantity. The majority of the bones were large bones (long bones- femur, fibula, tibia, radius, ulna, humerus, skull and pelvic bones). The possible reason for this was that these were the sorts of bones most easily recoverable by the Victorian workmen and the types of bones most likely to have been preserved in the slightly acidic soil. The assemblage represented a range of individuals of mixed age and sex whom were buried at various periods in the churches long history. The chambers were excavated in spits but no specific burial trend was observed. It appeared that re-deposition had occurred quickly, with the human remains perhaps being tipped by wheelbarrow into the southern end of the chambers. Being that the greatest quantity was contained within the easternmost chamber, it appears that this was filled first until full, then the remaining bones were spread relatively evenly across the other chambers. There was no evidence of complete coffins, however fragments of coffin timbers

and coffin furniture were recovered. If full coffins were present during the original excavations, they were probably removed to save space in the reburial. As the documentary sources have implied, during one period of the churches history the coffins were removed prior to reburial to be used as a fuel source for the churches heating (see above). Surrounding the disarticulated remains there was a soil matrix (**1044**) made up of the same mid-dark brown, silty clay as the spoil mound above, showing it was filled contemporaneously. The westernmost brick chamber contained a large quantity of demolition rubble mixed within its soil matrix. The structure did not have solid flooring, instead it was constructed upon the natural clay within which there was evidence of earlier burials (Plate 25).

7. THE FINDS

7.1. The Human Skeletal Assemblage from St. Giles Parish Church, Newcastle-under-Lyme, Staffordshire by Kirsty Squires (Staffordshire University).

7.1.1. **Introduction.** From June to July 2016, articulated and disarticulated remains were identified and recovered during archaeological fieldwork at St. Giles Parish Church, Newcastle-under-Lyme, Staffordshire (SJ 84713 46025) in advance of a landscaping programme in the immediate area to the north of the church. The skeletal remains that were excavated from this site were analysed in an on-site mobile laboratory and in the Biosciences Laboratory at Staffordshire University (Stoke-on-Trent) between July and August 2016. Inhumed, articulated bone that were uncovered but not lifted, were not analysed by the osteologist (Kirsty Squires) as these were excavated when the specialist was off-site. The results section of this report will be split into two parts. The first half of this report will deal with the inhumations and the latter part contains an appraisal of the disarticulated remains.

7.1.2. **Aims.** The primary aims of these analyses were to determine the minimum number of individuals interred at this site, to establish the demographic profile of the cemetery, and to identify any pathological lesions on the skeletal remains as a means of informing health and disease of the inhabitants of Newcastle-under-Lyme. Unfortunately, there is insufficient contextual evidence in terms of the date of these remains, though it would appear that they date from the late medieval to the post-medieval periods.

7.1.3. **Methods.** The articulated remains that were lifted from this site were subjected to full osteological analysis and recording. The degree of completeness of each skeleton was recorded as a percentage (as outlined by Mays, Brickley and Dodwell, 2004). The preservation of bone was recorded using the grading scheme presented in McKinley (2004) and accompanying descriptions were provided. Minimum number of individuals was established based on the presence of duplicate skeletal elements.

7.1.4. The age and sex of each skeleton was determined through traditional osteological methods (i.e. following methods outlined by Johnston, 1962; Miles, 1962; Brothwell, 1981; Lovejoy et al., 1985; Brooks and Suchey, 1990; Buikstra and Ubelaker, 1994; Chamberlain, 1994; Bass, 1995; Buckberry and Chamberlain, 2002; Scheuer and Black, 2004; White and Folkens, 2005). The age thresholds

employed in this analysis can be seen in Table 1. It is worth noting that in some cases, where diagnostic evidence was lacking, it was not possible to ascribe an individual to a specific age category. In these instances, individuals were assigned to generic “juvenile” (<17 years) and “adult” (>18 years) groupings. The sex categories employed in this report reflect the groupings employed by McKinley (1994). This classification system consists of: confidently assigned (or unquestionable) male or female, probable male or female, possible male or female, indeterminate and unsexed (McKinley 1994, 20).

- 7.1.5. Metric analyses were employed to assist in sex estimation. All surviving, complete femoral heads, humeral heads, and radial heads were measured and recorded (Stewart, 1979; Berrizbeeitia, 1989; Bass, 1995). Stature was calculated using calculations presented by Trotter (1970). Non-metric traits were identified as present or absent for cranial bones (Berry and Berry, 1967) and post-cranial remains (Finnegan, 1978). Pathological conditions were also recorded during this analysis. Dental diseases were quantified and recorded in compliance with the standards presented by Buikstra and Ubelaker (1994); Brothwell (1981); Lukacs (1989), and Steckel et al. (2006). Skeletal pathologies scored and recorded following the guidelines and methods presented by Brothwell (1981), Buikstra and Ubelaker (1994), and Steckel et al. (2006).
- 7.1.6. As outlined by McKinley (2004, 14), the minimum number of individuals, age and sex, and presence of pathological lesions of the disarticulated bone assemblage were recorded. Stature was also estimated based on the presence of complete long bones. The methods employed to analyse the disarticulated remains (as outlined above) were also used to assess the disarticulated remains. To determine the minimum number of individuals, elements of the skull, pelvis, and femora were recorded in compliance with the methods outlined by Buikstra and Ubelaker (1994).
- 7.1.7. **Results and Discussion.**

Articulated remains: Completeness and preservation. As outlined in Table 2, the completeness of the remains under investigation was variable but, on the whole, was rather poor. None of the articulated individuals examined possessed more than 75% of their skeletal remains. Two skeletons (SK102B and SK104) were identified as 0-24% complete, three individuals (SK101, SK102A, and SK105) were recorded as 25-49% complete, and one skeleton (SK103) was ascribed to the 50-74% completeness grouping, though the overall completeness of this individual was

identified towards the lower end of this range (around 50% complete). Skeletons SK101-SK105 were very shallow. The lower limbs of SK101, SK102A, and SK104 were not identified during excavation. SK101 and SK102A were oriented on a north-south alignment. The construction of a wall to the south of these burials could be attributable to the absent lower limbs of these skeletons. The lower limbs of SK104 were much higher than the rest of the body which, again, could explain their absence in the archaeological record. The skull of SK103 is missing. Again, this could be due to disturbance during the late 19th century. The completeness and preservation of SK106 cannot be commented upon as this individual was not examined by the osteologist (see Figure 3 for burial locations).

- 7.1.8. Similarly, preservation of the remains was variable within and between inhumations. The preservation of SK102A and SK104 was very good (both individuals assigned grade 1) with very little signs of surface abrasion or damage. In contrast, SK105 was poorly preserved and ascribed a score of grade 4. The bones from this inhumation showed cortical exfoliation of all long bones, especially those in the upper limb (i.e. humeri, ulnae, and radii), and extensive fragmentation due to the fragile nature of these remains. The skeletal remains belonging to SK101 (grade 2 and 5), SK102B (grade 3 and 5+), and SK103 (grade 2 and 5) were variably preserved. The coloration of the bones examined ranged from mid-yellowish brown (SK101, SK102A, and SK103) to dark yellowish brown (SK102B, SK103, SK104, and SK105). SK101 and SK102A showed patches of reddish grey staining as a result of the surrounding burial environment. SK102B and SK104 showed black mottling on the cortical bone surface of the long bones and parietals, respectively. In the case of SK102B, the black mottling was identified in areas of grade 5+ preservation. Copper alloy staining was recorded noted on the left surface of occipital and left scapular (lateral surface) and ribs of SK101. This was also identified on the anterior surface of the femoral head, a small section of the iliac crest (os coxa), and left distal radius of SK103. The metal staining can be attributable to coffin fittings that were identified and recovered during the excavation process.
- 7.1.9. Minimum number of individuals. The minimum number of individuals identified during osteological analyses totalled six individuals. The osteologist excavated and recorded SK102A and SK102B. SK102B appears to have been disturbed by the interment of SK102A. The remains of SK102B were found to the west of SK102A and were commingled, primarily in the upper fill of (1035). In addition, SK106 was uncovered during groundworks but reinterred before analysis could be carried out by an osteologist. This brings the total minimum number of articulated

individuals to seven. Additionally, 23 graves to the north-eastern area of the site remained unexcavated, though it is not known if any of these burials contained more than one individual.

- 7.1.10. *Demographic profile.* The skeletal remains recovered from in-situ inhumations ranged in age from 12-18 months (SK102B) through to 50+ years of age (SK103). As illustrated in Table 2, all individuals (with the exception of SK102B) were over 25 years old. Sex determination of the adults showed a higher proportion of males compared to females. SK101 was identified as a possible female, whilst SK102A and SK103 were recorded as probable males, and SK104 and SK105 were identified as males. However, given the small sample under investigation, no comments can be made regarding the social significance of this observation.
- 7.1.11. *Metric analyses.* As a result of fragmentation and poor preservation, it was only possible to determine the stature of two articulated individuals. SK103 and SK104 were estimated to measure 171cm and 164cm, respectively. Roberts and Cox (2003) identified that the mean stature of males 171cm from the late medieval through to the post medieval period. The mean stature of females increased slightly over time. During the late medieval period this decreased to 159cm, and in the post-medieval period this increased to 160cm (ibid.). Whilst the probable male (SK103) aligns with the average stature of the late medieval and post-medieval period the male (SK104), measuring 164cm, is 6cm shorter than the average male from the same periods.
- 7.1.12. *Non-metric traits.* Skeletal non-metric traits are morphological variants in the form of additional foramina, facets, canals, sutures, and processes which are caused by genetics, though some of these are influenced by environmental factors and habitual activities (Saunders, 1989). It is believed that these traits can be used to examine biodistance (familial relationships), though more research is needed in this area. SK101 exhibited the highest frequency of non-metric traits from the articulated assemblage. This individual possessed an ossicle at the bregma suture, an absent mastoid foramen, an incomplete foramen ovale, bridging of the right supraorbital notch, an absent posterior ethmoid foramen, and a septal aperture on the right humerus. SK102B displayed a metopic suture. The left humerus of SK103 exhibited a septal aperture and the right patella possessed a vastus notch. The cranium of SK104 displayed a metopic suture and an absent mastoid foramen. Similarly, the mastoid foramen of SK105 was absent. Many of the same non-metric traits were identified in this assemblage, namely absent mastoid foramina, metopic sutures, and septal apertures.

- 7.1.13. *Pathological analysis.* All individuals examined, except SK102B, displayed pathological lesions. SK101 exhibited spinal degenerative joint disease (SDJD) of cervical vertebrae five and six and lumbar vertebra five alongside appendicular degenerative joint disease (ADJD) of the left and right humeri and clavicles. Both the mandible and maxilla of SK101 showed extensive ante-mortem tooth loss (AMTL) – the only exception was the right mandibular canine which was lost post-mortem. Slight periodontal disease was identified on the left maxilla in the region of the canine and first premolar.
- 7.1.14. SK102A displayed a similar range of pathologies as those identified on SK101. SDJD affected cervical vertebrae two and three. Additionally, Schmorl's nodes were noted on thoracic vertebrae six, seven, and eight. ADJD of the left and right humeri and right scapula was also recorded. AMTL of the left first mandibular incisor was noted whilst a medium sized root caries was identified on the buccal surface of the left maxillary first incisor. Dental enamel hypoplasia (DEH) was recorded on the second incisor in the left maxilla, suggesting a period of stress whereby a lesser amount of enamel was deposited when this tooth was undergoing development.
- 7.1.15. SDJD affected thoracic vertebrae nine, ten, eleven, and twelve of SK103. Thoracic vertebrae eleven and twelve exhibited signs of ankylosing spondylitis based on the fusion of the right side of the vertebral bodies (Plate 33). This condition is typically identified in adult males, with an initial onset between 15-35 years, though the initial etiology is unknown but may be linked to genetics (Aufderheide and Rodríguez-Martin, 2006). ADJD of the left acetabulum of the os coxa and the left proximal ulna was observed. Slight osteoperiostitis of the anterior surface of the distal third of the left femur was also recorded in this individual.
- 7.1.16. SK104 exhibited SDJD of cervical vertebrae three, four, five, and seven, and thoracic vertebrae one, two, and four. Slight expression of cribra orbitalia on the right orbit was noted. Nutritional deficiencies and poor general health during childhood could possibly explain the stunted stature of this individual. Slight ADJD of the right humerus and right glenoid fossa of the scapula was recorded. Extensive AMTL was identified in this individual, which affected all surviving aspects of the maxillae and mandible (the first canine to the third molar was absent in the right mandible from and dentition in the left maxilla from the second premolar to the third molar were not present).

- 7.1.17. SK105 showed signs of ADJD of the proximal left and right femora and, akin to SK103, slight osteoperiostitis of the anterior surface of the distal third of the left femur was observed. This individual displayed extensive dental disease. AMTL of the right maxillary first and second premolar, right mandibular third molar, and left mandibular second and third molars. Small occlusal caries and small buccal root caries were identified on the right maxillary first molar, medium-sized caries on the interproximal surfaces of the right maxillary second incisor, canine, and first premolar, and large root caries were observed on the right mandibular first and second premolars. A moderate degree of periodontal disease was identified on the right maxilla, which extended from the second incisor to the first molar and is undoubtedly linked to caries in this region. Moderate dental calculus on the lingual and buccal surfaces of all teeth examined was recorded.
- 7.1.18. Crude prevalence rates (CPR) were calculated as a means of understanding health and disease of individuals buried at St. Giles Parish Church. CPR was employed to highlight the frequency of individuals that showed signs of a specific health-related condition, regardless of the skeletal element (Roberts and Cox, 2003). It is worth noting that, due to the incomplete nature of many of the articulated burials at this site, the CPR values are estimates and these values should only be used as a general guide when assessing prevalence rates of oral and skeletal anomalies.
- 7.1.19. As outlined in table 3, SDJD (67%) and ADJD (83%) were the most common palaeopathological conditions to affect the skeletal remains from the site and could provide an insight into occupation. These are particularly high rates for the late and post-medieval periods (Roberts and Cox, 2003) and could be attributed to the burial of a high number of individuals engaged in heavy manual work at this site. However, the number of individuals examined in this analysis is a small sample of the burial population and may not be representative of all individuals buried in this cemetery. AMTL was also common amongst the burial population and closely corresponds to similarly high rates identified from other post-medieval cemeteries, ranging from 55%-88% (ibid.). Roberts and Cox (2003) have noted that poor dental hygiene and a diet rich in cariogenic foods would have caused high rates of dental disease and AMTL during this period.
- 7.1.20. **Disarticulated remains.** Disarticulated skeletal remains were recovered from a number of contexts, specifically (1000), (1000) – trench next to boundary wall, [1031]-(1032), (1044-1) BS1 , (1044-2) BS2, and (1044-4) BS 4. Given the large quantity of disarticulated remains recovered from the site, the skeletal elements analysed were restricted to those that would provide the maximum

amount of demographic and metric data. Therefore, skulls, pelvises, and long bones were the subject of this analysis. All other bones were examined and, if they possessed pathological lesions or unusual characteristics, they were described and photographed.

- 7.1.21. Completeness and preservation. An assessment of the disarticulated remains illustrated that all skeletal elements were represented from the aforementioned contexts. On the whole, preservation of the remains was very good, as illustrated by the preservation grades of the 27 disarticulated crania examined in this analysis (Table 4). The majority of these crania showed few signs of extensive abrasion or damage. There is no particular pattern in terms of preservation grade and location within the site. The disarticulated remains from (1000) and (1000) – trench next to boundary wall ranged in colour from light yellowish brown to mid-yellowish brown. The colour of bone in (1044-1) BS1, (1044-2) BS2, and (1044-4) BS4 were more variable ranging from light yellowish brown to mid-yellowish brown and light reddish brown to mid-reddish brown. Two crania from this context exhibited copper-alloy staining indicative of burial in coffins with coffin fittings prior to their exhumation and reburial in the brick structure.
- 7.1.22. Minimum number of individuals. Following analyses, it was evident that the skulls (both complete and fragmented) yielded the highest quantity of bone that could inform minimum number of individuals. The data obtained from the skulls, pelvises, and femora that were used to estimate minimum number of individuals can be found in tables 11-13. The skeletal remains from 95 individuals were identified from (1044-1) BS1 (based on frontal bones), four individuals were observed from (1044-2) BS2 (based on duplicate mandibles and left ilia), 11 individuals were recorded from (1044-4) BS4 (based on duplicate mandibles), a minimum of three individuals were noted from [1031]-(1032) (based on the presence of duplicate occipital bones), at least 25 individuals were interred in (1000) (based on the presence of frontal bones), and 17 individuals from (1000) – trench next to boundary wall (based on duplicate frontal bones). Overall, the minimum number of individuals from the aforementioned contexts totalled 175 individuals. This was calculated by the presence of 148 frontal bones plus 27 complete crania with surviving frontal bones.
- 7.1.23. Demography. The demographic attributes of the disarticulated remains were recorded based on the complete crania recovered from the aforementioned contexts. However, all juvenile cranial remains were fragmented and no complete skulls were identified though complete long bones were identified. Therefore, the length of long bones was recorded to gain an insight into the

youngest members of the cemetery population (i.e. individuals under 13 years old), (Johnston, 1962; Chamberlain, 1994). A detailed breakdown of these measurements can be found in Table 14. The youngest individual recorded from this site was 35 fetal weeks old, based on the length of a right tibia that was recovered from (1044-1) BS1. Additional foetal remains were identified from the same context (1000) and also from (1000) – trench next to boundary wall. The oldest child (6-10 years old) examined from this assemblage derived from (1044-1) BS1. A summary of these findings can be seen in Table 5.

- 7.1.24. Based on the disarticulated complete crania and skulls recovered from this site, a range of age groupings, and both males and females, were identified. A summary these findings can be found in Table 6 and Table 7. Adult remains were found in (1000) and (1000) – trench next to boundary wall. It is interesting to note that the adult identified from the latter context was a male and found alongside the remains of multiple juvenile individuals. Individuals interred in (1044-1) BS1 ranged in age from 13 years old through to individuals over 48 years of age. Both males and females were recovered from this context. The cranial remains of a young adult (probable female) were identified in (1044-2) BS2 and a mature adult (male) and an adult male were recorded from (1044-4) BS4. Overall, there does not appear to be any age or sex based depositional practices with the exception of the high frequency of juveniles interred in (1000) – trench next to boundary wall.
- 7.1.25. *Metric analyses.* In total 49 fully fused long bones were measured for the purpose of stature estimation. These included femora, fibulae, humeri, radii, and ulnae. Where possible (i.e. in the case of the humeri, femora, and radii) sex was estimated by measuring the head of these bones as a means of employing the most relevant stature calculation (Stewart, 1979; Berrizbeeitia, 1989; Bass, 1995). The stature of the St. Giles population ranged from 150cm-180cm and the mean height measured 164cm. As expected, females (n = 21) were, on average, shorter than males (Table 8). Females ranged from 150cm-173cm in height and the mean stature measured 159cm, which falls in line with the expected stature estimates presented by Roberts and Cox (2003). Similarly, the stature estimates of the males (n = 11) closely correspond with the measurements presented by the aforementioned authors. Here, the estimated mean stature of the male section of the St. Giles population measured 171cm, and height ranged from 158cm-180cm. The indeterminate stature estimates were primarily taken from fibulae and ulnae. Here, the minimum and mean stature measured 152cm and 165cm, respectively, which falls in between the male and female average estimated stature, whilst the maximum height estimate is lower (172cm) than

both males and females. Nonetheless, the stature estimates from males and females from this site closely correspond to the rest of late medieval and post-medieval Britain.

- 7.1.26. Non-metric traits. Non-metric traits on disarticulated crania, pelvis, and long bones were recorded. No non-metric traits were examined on the disarticulate pelvis or long bones examined. In contrast, the crania manifested a range of non-metric traits (Table 9). Fronto-temporal articulation was the most common trait identified (69%) on the 27 crania followed by the presence of parietal foramina, mastoid foramina extrasutural, and absent mastoid foramina (30%). The least frequently occurring traits identified included: incomplete foramen ovale, double condylar facets, foramen of Huschke, highest nuchal line, palatine torus, anterior ethmoid foramen extrasutural, and absent posterior ethmoid foramina, all of which were identified on 4% (n = 1) of the crania examined.
- 7.1.27. Pathological analysis. Pathological lesions were not identified on any of the disarticulated pelvis or long bones. However, some pathological lesions on the crania and dentition were identified (Table 10). Three individuals (11%) exhibited signs of cribra orbitalia and one individual (4%) displayed evidence of porotic hyperostosis. The expression of cribra orbitalia and porotic hyperostosis were slight in all instances. An array of dental disease was noted, the most commonly occurring of which was noted as dental caries, which was identified in six individuals (22%). This was followed by periodontal disease and dental calculus, each of which was noted on four crania, and dental abscesses, dental enamel hypoplasia, and AMTL were each identified in two individuals (Plates 34 & 35). The identification of dental enamel hypoplasia may hint towards periods of stress amongst some members of the cemetery population during childhood.
- 7.1.28. Trauma. The skull of an adult male recovered from (1044-1) BS1 indicated that a craniotomy had been carried out as part of a post-mortem examination (Plates 36-39). Extensive dental disease was recorded in this individual and included dental caries, dental calculus, periodontal disease, AMTL, and dental enamel hypoplasia (Plate 40). Based on an examination of these skeletal remains, it is not possible to identify the cause of death. It is possible that the individual died of an acute infectious disease, such as smallpox or cholera as these conditions were rife in Newcastle-under-Lyme in the late and post-medieval periods. It is possible that the craniotomy took place at a local hospital, such as the one dedicated to St. John the Baptist, which was closely situated to the church and operated until the end of the 16th century (British History Online, 2016). Given the fact the grave of this individual was probably one of the older burials in the churchyard,

groundworkers may have deemed it appropriate to remove and rebury the remains of this individual in the brickstructure in the post-medieval period.

7.1.29. There are no signs of defleshing or removal of soft tissue from the cranium or mandible prior to the craniotomy taking place, which sometimes occurred prior to these procedures taking place (Western and Kausmally, 2014). Based on the cut marks exhibited on the cranium, it appears that a handsaw was used to perform the craniotomy, as exhibited by the striations on the cut marks. The individual(s) performing the procedure made the initial cut on the left hand side of the cranium and worked their way around the cranium until the superior aspect of the cranium had been cut away. The copper-alloy staining on the left hand side of the cranium suggests that this individual was initially buried in a coffin but following groundworks during the late 19th century, the remains (or at least the skull) was reinterred in (1044-1) BS1.

7.1.30. **Conclusion.** The St. Giles Parish Church cemetery operated from the late medieval through to the post-medieval period. Based on recent archaeological excavations a number of inhumation burials were identified, some of which were exhumed and subjected to osteological analysis. Additionally, a significant quantity of disarticulated remains were recovered, many of which derived from disturbed and displaced burials due to groundwork that took place in the late 19th century. The preservation of the remains found across the site was variable, though many of the crania found in (1044-1) BS1 were well-preserved. Overall, the minimum number of individuals identified from this site totalled 181 individuals. If SK106 is included in this figure, the number increases to 182 individuals. All ages and both males and females were buried at this site. The average stature of adult males (171cm) and females (159cm) from the St. Giles cemetery fall in line with the mean height in the late medieval and post-medieval periods. A variety of pathological lesions were identified on the skeletal remains from this site. The articulated, inhumed burials showed high rates of degenerative joint disease of the spine and appendicular joints. Cribra orbitalia and high rates of dental disease were recorded amongst the articulated and disarticulated remains indicative of heavy manual labour, old age, poor oral hygiene, and a diet rich in cariogenic foods. Evidence of an individual that underwent a craniotomy was recovered from (1044-1) BS1 though it was not possible to establish the cause of death through an examination of the available skeletal remains, namely the skull. The only spatial patterning identified at this site was of the high frequency of juveniles interred in (1000) – trench next to boundary wall, which closely aligns with funerary practices from the late and post-medieval periods.

7.1.31. **Future recommendations.** The skeletal remains were reburied in late September 2016. Thus, no further analyses can be carried out on the bones themselves. However, a more in-depth bio-cultural analysis of the funerary practices at this site over time would be incredibly valuable and would add to our understanding of mortuary rites in the late medieval and post-medieval periods.

7.2. **The Flint** by *William Mitchell*

7.2.1. One worked flint was recovered from the site. This residual flint was a core, or perhaps a scraper. There was evidence of several strike marks across the surface, the flakes of which would have been small enough to be of use as microliths and burins. The flint was unweathered black flint and was probably Mesolithic-Neolithic in origin (Plate 41). Locally there are few comparative examples of prehistoric evidence such as this available for Newcastle-under-Lyme. Staffordshire HER records a flint scraper 'found somewhere in Newcastle' which may be dated between the Early Mesolithic and Bronze Age and in 1942 a 'Neolithic Axe Hammer' was found during excavations of Bridge Street (Blake and Langley, 2009, 13).

7.3. **The Pottery**

7.3.1. **Introduction** Several examples of medieval pottery were recovered from the site. The majority of these were recovered from beneath the spoil mound. A large amount of post-medieval and modern pottery was also recovered from within the spoil mound. This pottery was largely domestic in origin and could have originated from anywhere within the site boundary. It could also have been imported into the site from elsewhere, dropped by passers-by and visitors to the site. The unstratified nature and quantity of this material meant that a decision was made to further investigate the medieval and post-medieval pottery assemblage which was from more secure deposits. The full pottery assemblage is available to view in the project archive. As an overall assemblage the pottery from St Giles was representative of the types and date range of pottery likely to be recovered from an urban setting which has been occupied for several hundred years.

7.3.2. **The Pottery** by *Stephanie Ratkai*

The medieval pottery was divided into fabric types and the post-medieval pottery into ware types. A detailed pottery fabric type series for Staffordshire as a whole is lacking, although individual places such as Lichfield, Stafford Castle and Stafford town have published type series. Published in 1995, Ford set out a general classification system for medieval pottery from Staffordshire and the

general categories have been used in this report with the addition of code ipsw (iron-poor sandy ware) rather than the term Midlands whiteware. Brief fabric descriptions for the pottery discussed here can be found in Table 15. The pottery has been recorded by sherd count and weight and rim count. The catalogue forms an Appendix to this report.

- 7.3.3. The pottery was essentially a mixed dump from demolition layers (see Appendix 3). None of the pottery pre-dated the 13th century. Most seemed to belong to the 13th-14th centuries with occasional sherds dating to the 15th-16th centuries. There is no reason to assume that the medieval pottery was anything other than of local manufacture.
- 7.3.4. The post-medieval pottery was also of local manufacture apart from one unexpected sherd from a handled jar in North Devon Gravel-Tempered ware, dating to the later 17th-18th centuries. This ware is found in the West Midlands but normally in areas on or close to the River Severn; it is an unusual find for this area of Staffordshire.
- 7.3.5. The post-medieval pottery types found in the demolition are not necessarily noteworthy in themselves (but see below) but the chief interest in the group lies in the fact that the medieval church of St Giles was demolished in 1719, the new church being consecrated in 1721. The church was undisturbed until a second rebuild in the late Victorian period. The post-medieval pottery found in the demolition layers therefore has a terminus ante quem of 1721, and it is possible to suggest that most of the post-medieval pottery belongs to the period c.1680-1720, allowing for the possibility that the light-on-dark trailed slipwares with a tan ground and yellow slip pattern, could be earlier. One later type of trailed slipware with a black ground and rather cruder slip trails, normally more common after c. 1750, is found in the dump as well.
- 7.3.6. The post-medieval pottery is in remarkably good condition, unlike the medieval material which is generally very worn. There is an attractive collection of slipwares of various kinds. Notable among them is a fluted or moulded form with an internal yellow glaze, external dense feathering in tan and yellow and moulded or stamped curvilinear patterns. It is possible that this sherd has come from a figurine cup in the form of an owl or other animal. There is also a more or less complete yellow ware lid with a rounded knob or finial. The lid would have been c. 650mm in diameter, designed to fit a rim diameter of c. 350mm. Table 16 shows the quantification of the medieval and post-medieval pottery by context.

7.4. The Floor Tiles by Stephanie Ratkai and William Mitchell

7.4.1. **Medieval floor tiles.** Several examples of moulded medieval floor tiles were recovered from the spoil mound. One complete floor tile (counter-relief) and two fragments were found in 1000 and sent for specialist identification (see Table 17 for details). These were all hand-made and originally square in form. One of these floor tiles was complete and was made of a red coloured ceramic fabric and was coloured with a green glaze (Plate 42). It was approximately 130mm x 130mm x 25mm. The counter-relief tile, part of a nine tile design, consists of a central flower with four petals bordered by a quarter circle in each corner. The general lay-out of the design is similar to Stafford Castle design no. 27 (White and Soden 2007, 157). However, the example from St Giles' is unusual in having raised circles on the outer quadrant edge of three of the quarter circles but a double row of rectangular impressions (similar to roller stamping found on some medieval jugs) on the fourth quadrant edge. A direct parallel for this can be found at Haughmod Abbey (Lunt and Lisk 2014, Fig. 6.52, 164), although the central floral section is, closer to the Stafford Castle example. In terms of dimensions the St Giles' tile has more in common with the Haughmond tile (see Table 18). Both White and Soden (2007, 158) and Lunt and Lisk (2014, 239) cite numerous parallels in Staffordshire and Shropshire for designs of this type and their variants and the example from St Giles' would seem to be yet another variant. The tile dates to the 15th century. Tables 17 and 18 show an analysis of the floor tiles from context 1000.

7.4.2. The counter relief tiles were produced by pressing a carved wooden stamp into the wet clay then the design was the glazed over prior to firing. This is known as the line impressed technique. Comparative examples have also been found in West Bromwich. The design of these tiles almost exactly matched the example(s) from St Giles. The tiles from West Bromwich are described below:

7.4.3. *'...This design also occurs at St. Bertelin's Church at Stafford and in Leicestershire, and is stylistically datable to the 14th or 15th century. Variants of this design, which resulted in a floor pattern of circles with quatrefoils in their centres interspersed with lozenges, are common in the Midlands and Wales' (Hodder 1998).*

7.4.4. **Nineteenth century floor tiles.** The tiles which were placed within Sir Gilbert Scott's new church were based upon designs recovered during demolition of the 18th century church, which had originated from the earlier medieval church (Plates 43-46). These tiles were faithfully reproduced by Herbert Minton. It is recorded that *'During the removal of the debris in 1873 a quantity of various old and scarce tiles were discovered, from which the whole of the beautiful tessellated pavement, under the superintendence of Sir Gilbert Scott, has been reproduced by Messrs. Minton*

Hollins and Co., of Stoke-upon-Trent and generously presented by My M.D.Hollins to the Building Committee' (Fenton 1876, 3).

- 7.4.5. St Giles received this donation of floor tiles by Herbert Minton, owner of Minton & Co: Stoke-on-Trent, in April 1851. The Minton factory was founded in 1793/6 by Herberts father Thomas Minton. Minton produced china and tiles and it was these tiles that which were widely supplied to churches around the region, production of these continued up until the mid-20th century. The tiles produced throughout this period were hugely varied and both encaustic floor tiles and majolica wall tiles were produced.
- 7.4.6. The tiles which were donated to St Giles were located around the alter space and were also used as risers for the steps. Much of the tiling within the interior of the church is presently covered by carpeting, but several of the Minton tiles are still visible. The surviving tiles are a mixture of buff and red with ornate patterning. There are also some surviving red tiles with raised relief pattern and some with white inlay.
- 7.4.7. Another variation of tiles by William Godwin of Lugwardine in Herefordshire was been used within the church. These were produced in the mid 19th century and many of these were based on medieval prototypes. The majority of examples known were made from red earthenware which were moulded and inlaid with a buff coloured slip in the encaustic fashion. The reason why George Gilbert Scott (1811-1878) used these tiles in their church restorations was that they were considered so authentic in their medieval appearance and were therefore suitable for use within the Victorian representation of the Medieval church. Some of the tiles broken during construction of Gilbert Scott's church ended up within the spoil mound (Plates 45 & 46).
- 7.5. **The Architectural Stone** by William Mitchell
- 7.5.1. **The 'Saxon stone'** One stone which had been set into the spoil mound during its rearrangements in the later 19th century has been identified as originating from elsewhere within Newcastle-under-Lyme. When the Smithfield buildings were being constructed at the southern end of Friars Street, Newcastle-Under-Lyme the Blackfriars monastery as reportedly uncovered. The masonry was said to be about 3 feet thick. Later in 1881, at the same site when a drainage trench was being dug several skeletons were uncovered and a 'large sepulchral slab' was taken out. It is this stone which was removed to its present location in St Giles churchyard (Plate 49).

- 7.5.2. The stone itself is therefore probably of 13th century origin and associated with the former Blackfriars. The stone is formed from millstone grit, is about 6 foot 3 inches in length, 3 foot at the top (although now broken) and 2 ½ foot at the base. It is 6 inches thick. *‘An incised line divides the stone into two equal parts, and on each side has been cut a pediment at the base, then a long straight central line leading up to and terminating in a perfect circle near the top the symbol of the eternal life’* (Pape 1928, 73).
- 7.5.3. The Blackfriars were Dominican Friars, known as such due to the black robes worn by them. In 1277, their residence was thought to have numbered at least 20, 12 being the minimum number necessary for a priory. There is uncertainty as to how long the Newcastle house was in existence or who had founded it. The fortunes of the priory appear to have faded gradually over the following centuries. In 1323 the number of friars dwindled to 12 and by the time of the dissolution in 1538 the priory was very poor. The house was described as *‘all in ruin and a poor house, the choir leaded and the cloister lead ready to fall down, the rest slate and shingle’* (Richard Ingworth, *Bishop of Dover 1538. British History online* <http://www.british-history.ac.uk/vch/staffs/vol3>).
- 7.5.4. **Architectural stones from the early church** A few examples of early architecture were recovered from the spoil mound, thought to have originated from the medieval church. Two of the best preserved examples are described below. Overall, though, there were very few examples of architectural stonework from this earlier period. It is thought that the majority of this was removed by the builders during demolition or used as foundation material for the current incarnation of the church. One good example of the medieval gothic church was recovered. This red sandstone church window mullion was recovered from the spoil mound (**1000**) (Plate 47). Another red sandstone fragment, thought to be part of a split arch or window tracery from the medieval church was also recovered from site (Plate 48).
- 7.5.5. **Memorial stones and mounded architectural stones from the 18th century.** Many examples of memorial stones and architectural stones from chest tombs were recovered from the spoil mound, these were all fragmentary and originated from various deconstructed memorials and tombs within the church and around the churchyard. Examples of parts of chest tombs, column fragments, capitals, friezes, pedestals, cartouches and tablets were among the types of mounded stones recovered. None of these could be identified to specific known memorials. The recovered stones were documented and are recorded in the project archive.

7.5.6. The best surviving example of these 18th century memorials was a large sculpted yellow sandstone arch and its associated stone pedestals and emblatures (Plate 19). This monument was recovered from within the spoil mound and had been discarded as deliberately broken pieces. Most of its various constituent parts were however, recovered (Plate 21) The existence of this arched monument is known from the photographic sources, analysis of these has identified that along with the arch, pedestals and emblatures, the monument would have originally included four plain columns, these were not recovered (Plate 20). This recovery of this arch is particularly interesting as it had previously held a prominent position within the chancel of the 18th century church. The monument itself was based on the English Palladian style popular in the 18th century. The cyma reversa mouldings on the arch are based on based on water-leaf designs and the mouldings on the pedestals and emblatures use both water-leaf and egg and dart designs. The semi-circular arch and various components, including the mouldings, are very much consistent with the 18th century fashion and it is likely that this monument originated in this period soon after the construction of the church in 1721. Within the photographs it is clear that set within the arched monument was the memorial tablet to the Reverend Clement Leich who died on 17th February 1853, this has been re-erected on the chancel wall of the current church. However, this may have been a second tablet in this monument replacing an earlier one dedicated to Robert Fenton, late minister of the church who died in 1760, which also survives in the chancel today and is of a similar arched shape and size. In support of this, the tablet is also described as a 'monument' dedicated to the memory of Fenton's wife and family.

8. DISCUSSION

8.1.1. The results of the excavations and research of St Giles Church have significantly increased the understanding of the developments which went into the formation of both the church and its associated churchyard. The current excavations involved the removal of a large spoil mound which originated in 1873, as a result of the restructuring of St Giles Church. This mound, which was originally one of three, contained the disarticulated remains, architectural fragments and artefacts disturbed during the expansion of the church. One of three brick crypts, built to reinter the disturbed remains, was identified during these excavations. The redevelopments of 1873 generated a huge amount of spoil which could not be levelled, due to the limited space on the site. It was not until 1897, when additional areas of land were assumed into the churchyard, that these spoil mounds could be reduced. However, there was still not enough space for all of the spoil to be removed so the remaining mound could only be partially cut back. The current

excavations concluded the process of taking away the final mound, as was always the intention of the original architects.

- 8.1.2. In removing the mound archaeologically, it has been possible to recover and interpret a large amount of artefactual information. This has been supplemented by the discovery of *in situ* inhumation burials, burial cuts, a brick crypt, foundation trenches and additional evidence. It has become clear through analysis of the recovered evidence that the documentary sources are largely accurate and can be supported by the archaeology.
- 8.1.3. Analysis of the pottery recovered from secure deposits and the mixed spoil mound deposits found that there has been occupation of the site from at least the 13th century. Most of the medieval pottery recovered however, belonged to the 13th to 14th centuries with occasional sherds dating to the 15th to 16th centuries. This was all thought to be of local manufacture. This was also the case with the large assemblage of post-medieval pottery, within which there were various examples of slipwares, which primarily dated to the period 1680-1720. Analysis of the pottery within robbed building foundation **1023** and **1029**, confirmed the existence of a building during the period of the later 17th to 18th century. It is thought that this represented the remains of the foundations of a building associated with either the early church in its final years or a building constructed around the same time as the Georgian church. It was constructed on the same orientation, but was likely to have been a separate building located away from the main church complex.
- 8.1.4. Analysis of the disarticulated human remains recovered from both the spoil mound, the brick crypt structure and the disturbed inhumation burials found evidence of 182 individuals of all ages and both males and females. Analysis showed that, in general, the local population of Newcastle-under-Lyme had high rates of degenerative joint disease of the spine and appendicular joints, cribra orbitalia and dental disease. The incidence of these diseases in the population is indicative of heavy manual labour, old age, poor oral hygiene and a diet rich in cariogenic (tooth decaying) foods. This pattern is typical of populations of the period, and given the conditions of life during the periods, is unsurprising. Spatial patterning was also identified from the excavations of St Giles' Churchyard. There was a high incidence of juvenile interment along the north eastern boundary wall and at the north- eastern corner of the cemetery. This closely aligns with recorded funerary practices from the late and post-medieval periods.

- 8.1.5. Additional evidence from the mound included ceramic floor tiles and architectural stones. The existence, form and function of these, contributed to the already comprehensive history of St Giles Church and confirmed elements of the dating and structure of the building. The absence of major architectural fragments belonging to the medieval church of St Giles suggests that these were either removed from site and reused elsewhere or buried beneath the subsequent churches.
- 8.1.6. To conclude, although the excavations stopped short of investigating all the features identified archaeologically, much additional information has been recovered from the analysis of the artefacts within the spoil mound. This spoil mound contained artefacts and human remains from a wide date range, covering the period of occupation from the 13th century onward. During the construction of the mound and the demolition of the 18th century church building, there would have been a deliberate and organised effort to remove all useful materials leaving only fragments which could not be reused. It is likely that all the artefacts came from within the boundaries of the churchyard or the area immediately surrounding it.

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152-158

Plates and Figures

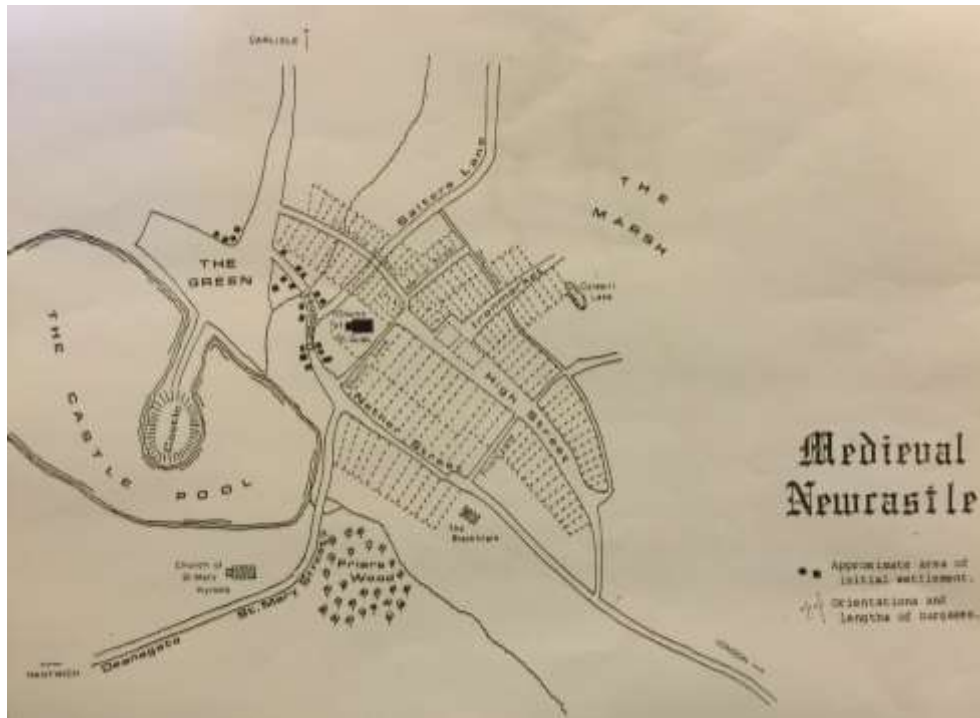


Plate 1: Conjectural Map of Medieval Newcastle-under-Lyme, showing the approximate area of the settlement and the layout and orientation of the burgrave plots. (Source unknown).

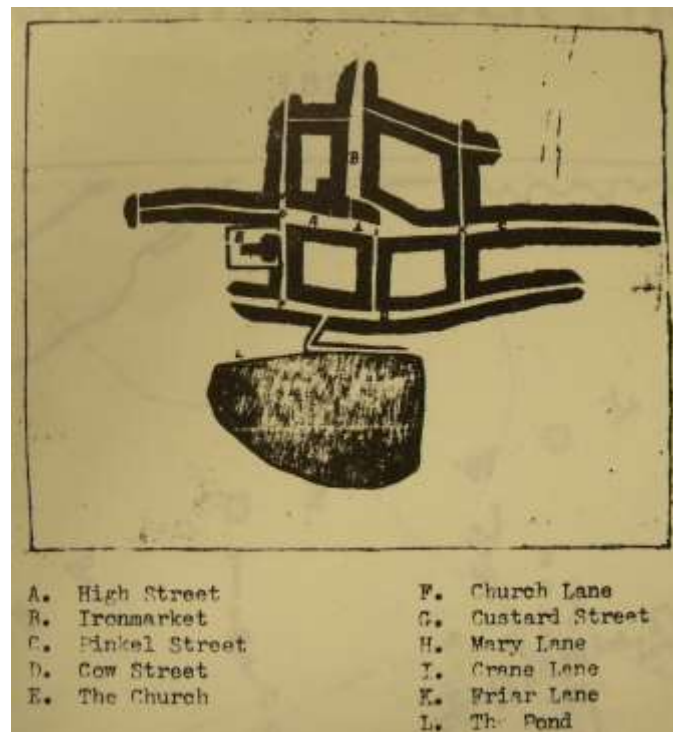


Plate 2: Forbes Map of 1691 (Reproduced in Newcastle –under-Lyme Maps).

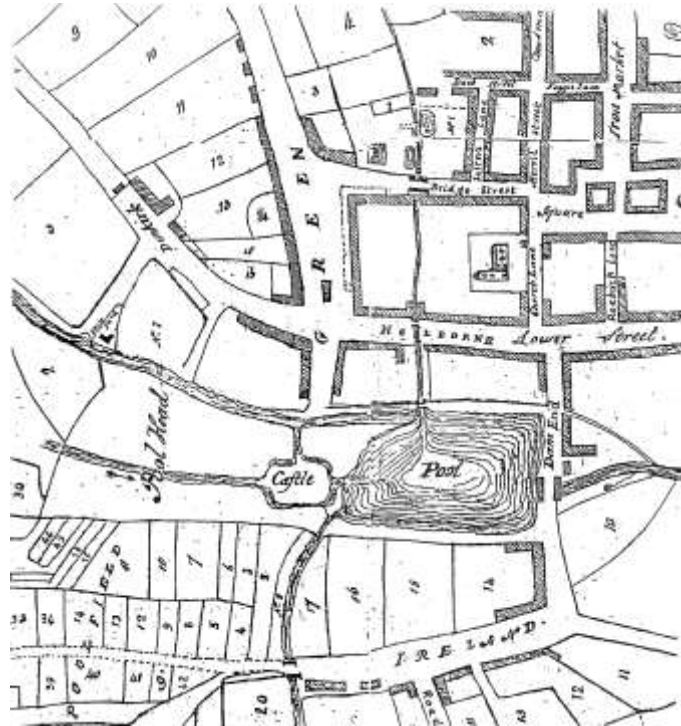


Plate 3: Extract from a plan of Newcastle-under-Lyme c.1785.



Plate 4: Malabar's map of Newcastle 1847 (Staffordshire Record Office D593\H\3\203a- Stafford).



Plate 5: 1889 Ordnance Survey Map.



Plate 6: 1945 Ordnance Survey Map.



Plate 7: St Giles in 1853.



Plate 8: St Giles' shortly before demolition 1870.



Plate 9: Original plan of the churchyard 1873, around the time of the rebuilding.

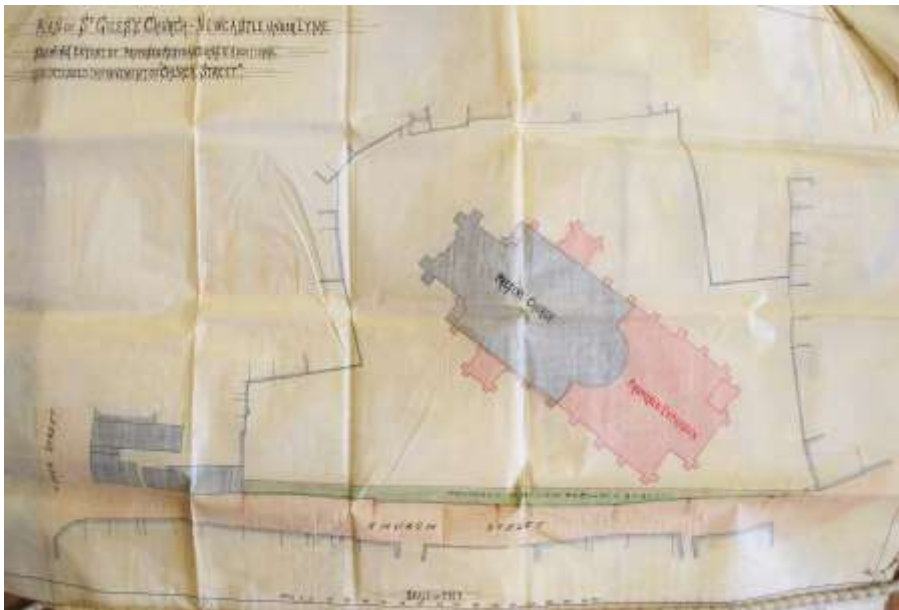


Plate 10: Plan of the proposed extension of the church and churchyard 1873.

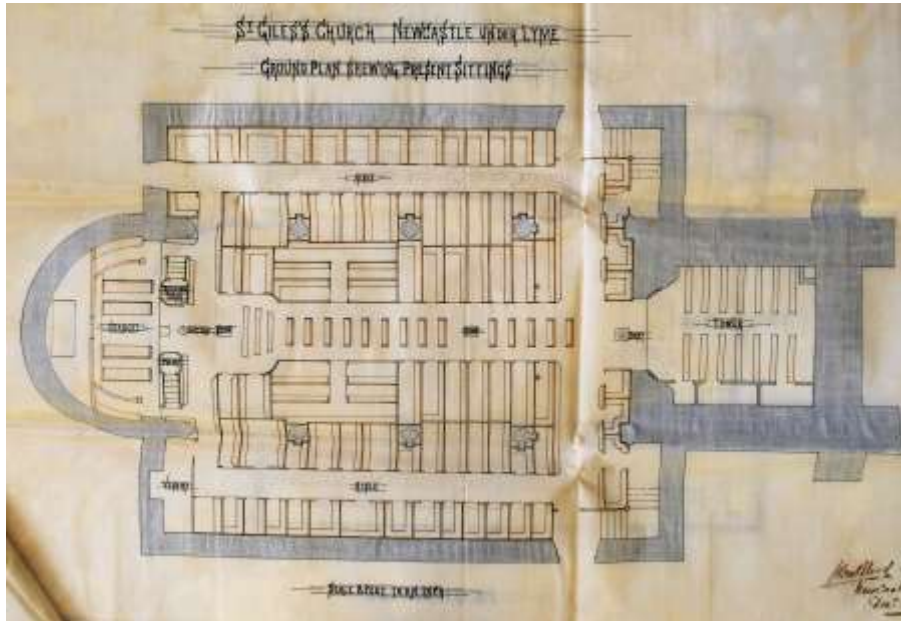


Plate 11: Ground floor plan of the church 1873.



Plate 12: The chancel of the church of 1721, including the carved oak pelican suspended in the roof above the altar.



Plate 13: Carved Oak pelican, from the 18th century church. Now used as the lectern.

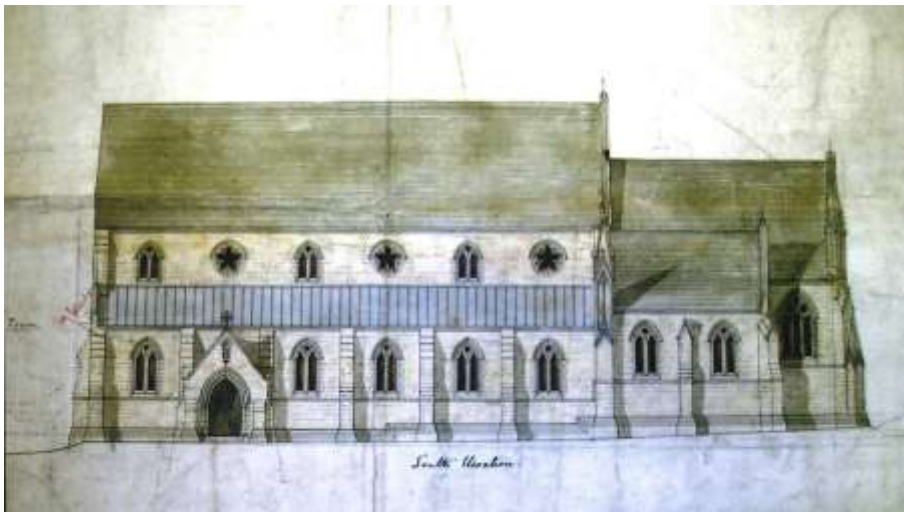


Plate 14: Sir Gilbert Scott's original design for the southern elevation of the Church.



Plate 15: Photograph of Church Street and Lower Street c.1880-1885.

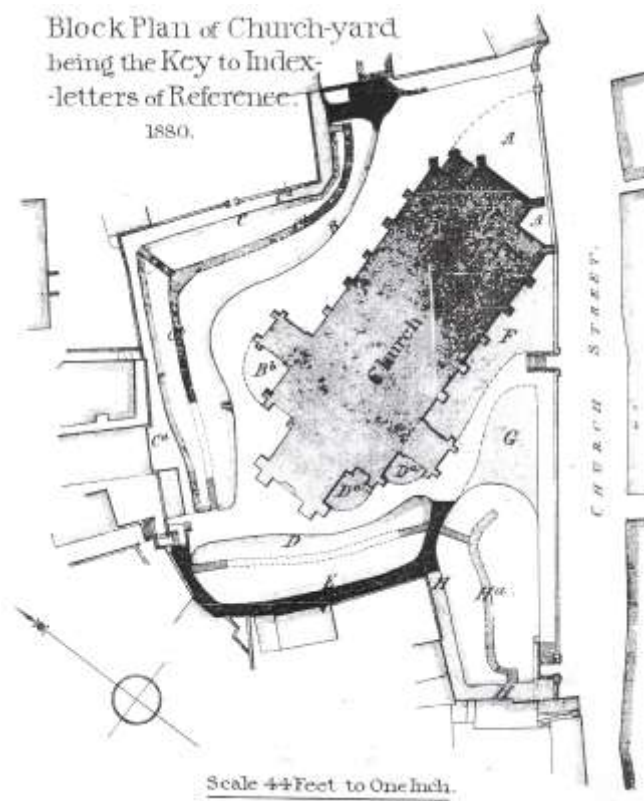


Plate 16: Plan of the church and Churchyard. John Blood 1880.

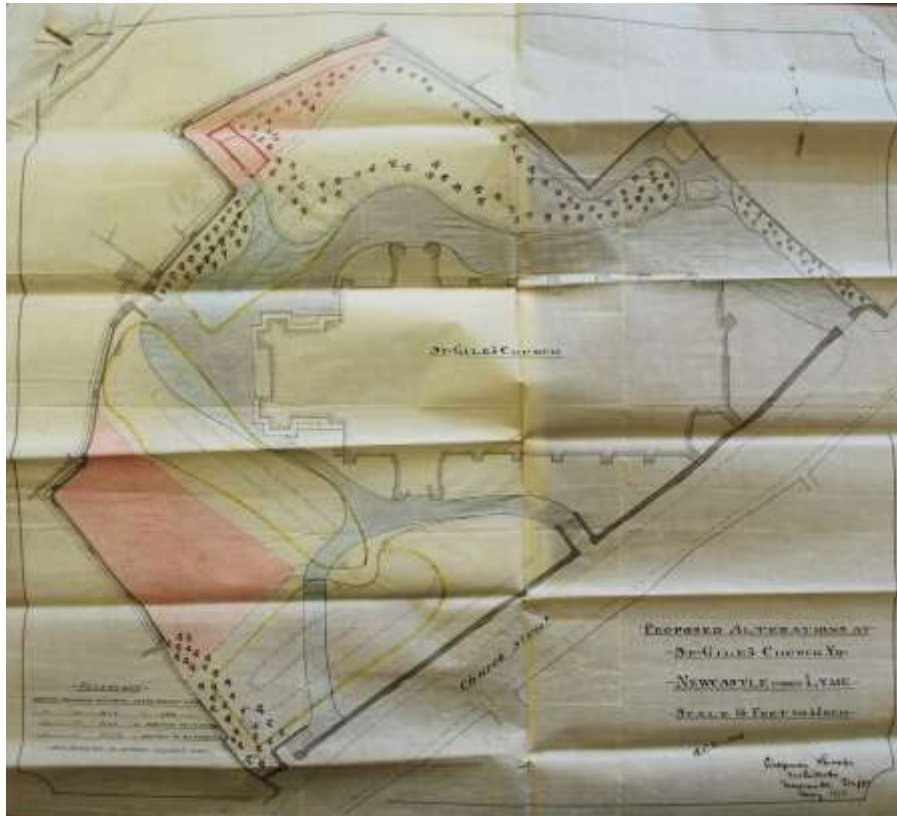


Plate 17: Plan of proposed alterations to the churchyard 1898. Mounds to be removed are coloured in yellow and were to be deposited on the portion coloured pink, which was an addition to the churchyard purchased in the same year.



Plate 18: The Church on 20th May 1910 on the death of King Edward VII. The northern spoil mound is visible on the left hand of the photo. The memorial stones are laid upright around its base and there is a large amount of tree growth on the top.



Plate 19: Memorial tablet on the wall of the 18th century church. Within the semi-circular stone arch is a memorial to the Reverend Clement Leich, (d.1853).



Plate 20: Memorial tablet to the Reverent Clement Leich, on the wall in the chancel (today).



Plate 21: Decorative stone arch from the previous church, now broken, recovered from the spoil mound.



Plate 22: Spoil mound (1000) under excavation, facing north west.



Plate 23: Brick memorial storage building 1045, facing south east.



Plate 24: Brick crypt structure 1043 pre-excavation, facing east.



Plate 25: Brick crypt structure 1043 during excavation, facing west



Plate 26: Grave Cuts A- L facing south.



Plate 27: Detail of coffin visible within grave cut 1007



Plate 28: Part of a later 17th to 18th century foundation trench (1023), facing north.



Plate 29: SK 102 and grave cut 1036 (SK101), facing north.



Plate 30: SK 103, facing south



Plate 31: SK105, facing west.



Plate 32: Large Charnel pit, mass burial area, facing west.



Plate 33: (1): Evidence of ankylosing spondylitis in SK103



Plate 34: (2): Example of dental caries, calculus, and periodontal disease from a left maxilla from (1044-1)
BS1



Plate 35: (3): Extensive AMTL identified on a disarticulated cranium from (1044-1) BS1



Plate 36: (4): Left lateral side of cranium from (1044-1) BS1 showing signs of a craniotomy



Plate 37: (5): Right lateral side of cranium from (1044-1) BS1 showing signs of a craniotomy



Plate 38: (6): Inferior view of cranium from (1044-1) BS1 that was subjected to a craniotomy



Plate 39: (7): Details of cut marks on the cranium from (1044-1) BS1 that was subjected to a craniotomy



Plate 40: (8): Mandible and surviving dentition belonging to the individual that was subjected to a craniotomy (1044-1) BS1



Plate 41: Residual Worked flint, possibly a core or scraper. Mesolithic or Neolithic in origin.



Plate 42: Medieval (late 12th or 13th Century) floor tile recovered from within the spoil mound (1000).

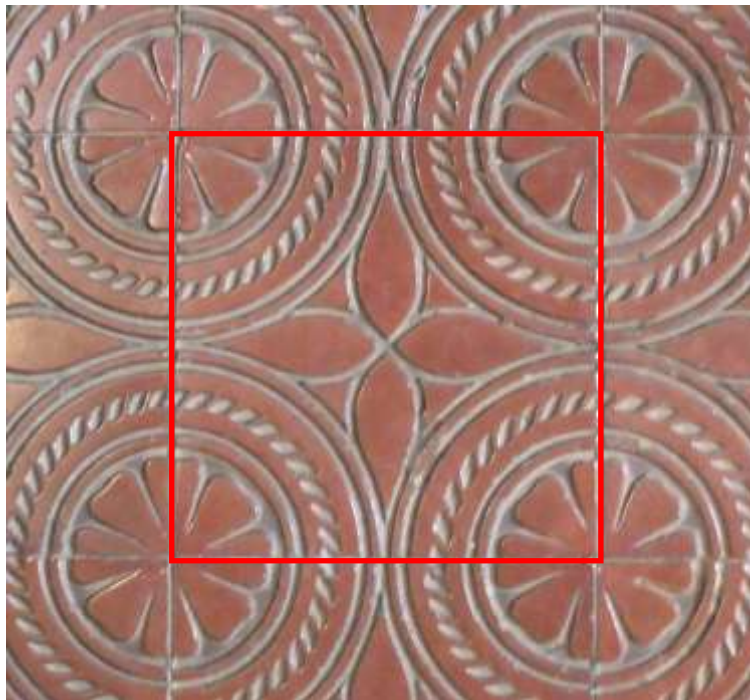


Plate 43: Minton Floor tile in situ within the Church, with design based on its Medieval counterpart.



Plate 44: Broken tiles (Godwin ?) recovered from within the spoil mound (1000)



Plate 45: Broken tiles (Minton ?) recovered from within the spoil mound (1000)



Plate 46: *In situ* tiles within St Giles Church (Godwin & Minton?) with the same designs to those of the recovered tiles, based upon their medieval counterparts.



Plate 47: Red sandstone church window mullion, from the medieval church, recovered from the spoil mound (1000).



Plate 48: Red sandstone. Part of a split arch or window tracery from the medieval church. Recovered from site.



Plate 49: The 'Saxon Stone', recovered in 1881 from Friars Street, Newcastle. Probably from the Blackfriars monastery and 13th century in origin.

Appendix 1
St Giles Heritage Churchyard Archaeology Tender and Watching Brief Specification

Appendix 2 Tables

Human Skeletal Remains Tables

Biological Age	Age category
<37-40 weeks in utero	Foetus
0-1 month	Neonate
1 month-12 months	Infant
1-12 years	Child
13-17 years	Adolescent
18-25 years	Young adult
26-35 years	Young middle adult
36-45 years	Older middle adult
46+ years	Mature adult

Table 1: Age thresholds employed in the analysis of the St. Giles skeletal assemblage.

Skeleton no.	Context no.	Completeness	Preservation	Age	Age category	Sex	Stature	Non-metric traits
SK101	[1036] and (1037)	25-49%	Grade 2 and 5	40-50 years	Older Mature Adult-Older Adult	Possible female	N/A	Ossicle at bregma, mastoid foramen absent, incomplete foramen ovale, bridging of right supraorbital notch, posterior ethmoid foramen absent, and septal aperture
SK102A	[1034] and (1035)	25-49%	Grade 1	25-30 years	Younger Middle Adult	Probable male	N/A	None
SK102B	[1034] and (1035)	0-24%	Grade 3 and 5+	12-18 months	(Young) Child	Unsexed	N/A	Metopic suture
SK103	[1038] and (1039)	50-74% (~50%)	Grade 2 and 5	50+ years	Older Adult	Probable male	171cm	Septal aperture (left humerus) and vastus notch (right patella)
SK104	[1041]	0-24%	Grade 1	25-30	Younger	Male	164cm	Metopic suture

	and (1042)			years	Middle Adult			and mastoid foramen absent
SK105	[1046] and (1047)	25-49%	Grade 4	40-50 years	Older Mature Adult-Older Adult	Male	N/A	Mastoid foramen absent

Table 2: Completeness, preservation, and demographic data obtained from the articulated skeletons at St. Giles Parish Church. SK106 has been excluded from this table as this was not examined by the osteologist.

Pathology	Number of individuals	CPR (%)
SDJD	4	67
Ankylosing spondylitis	1	17
Schmorl's nodes	1	17
ADJD	5	83
Cribra orbitalia	1	17
Osteoperiostitis	2	33
AMTL	4	67
Dental caries	2	33
Periodontal disease	2	33
Dental enamel hypoplasia	1	17
Dental calculus	1	17

Table 3: Crude prevalence rate (CPR) of palaeopathological markers identified on the articulated remains from St. Giles Parish Church.

Context no.	Grade 0	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
(1000)		4				1
(1000) - trench next to boundary wall				1		
(1044-1) BS1		9	2	6	1	
(1044-2) BS2		1				
(1044-4) BS4	2					
Total	2	14	2	7	1	1

Table 4: Preservation grades of 27 disarticulated crania from St. Giles Parish Church.

Context	Foetus	Neonate- infant	Infant	Infant- child	Child
(1000)				1	2
(1000) - trench near boundary wall	1	4		1	2
(1044-1) BS1	2	1			10
(1044-2) BS2			1		
Total	3	5	1	2	14

Table 5: Disarticulated remains –age profile summary of juveniles.

Context no.	Adolescent	Young adult	Young middle adult	Mature adult	Young middle adult-mature adult	Older middle adult-mature adult	Adult	Not specified	Total
(1000)							2	1	3
(1000) - trench next to boundary wall							1		1
(1044-1) BS1	1		2	2	2	3	10		20
(1044-2) BS2		1							1
(1044-4) BS4				1			1		2
Total	1	1	2	3	2	3	14	1	27

Table 6: Disarticulated remains – adolescent and adult age profile summary (not specified indicates insufficient characteristics to establish the biological age of this individual).

Context no.	Female	Probable female	Possible female	Male	Probable male	Possible male	Indeterminate	Not specified	Total
(1000)	1	1						1	3
(1000) - trench next to boundary wall				1					1
(1044-1) BS1	3	2	3	6	2		4		20
(1044-2) BS2		1							1

(1044-4) BS4				2					2
Total	4	4	3	9	2	0	4	1	27

Table 7: Disarticulated remains – sex profile summary (not specified indicates insufficient characteristics to establish the biological sex of this individual).

	Number of individuals	Minimum (cm)	Mean (cm)	Maximum (cm)
Female	21	150	159	173
Indeterminate	17	152	165	172
Male	11	158	171	180

Table 8: Stature estimation based on disarticulated long bones.

Non-metric traits	Trait present	Trait absent	Percentage present
Fronto-temporal articulation	11	16	69
Parietal foramen	8	19	30
Mastoid foramen extrasutural	8	19	30
Mastoid foramen absent	8	19	30
Ossicle at parietal notch	7	20	26
Open foramen spinosum	7	20	26
Bridging of supraorbital notch	6	21	22
Ossicle in lambdoid suture	5	22	19
Absent zygomaticofacial foramen	5	22	19
Ossicle at lambda	3	24	11
Ossicle at pterion	3	24	11
Accessory supraorbital foramen	3	24	11
Ossicle in coronal suture	2	25	7
Ossicle at asterion	2	25	7

Accessory infraorbital foramen	2	25	7
Maxillary torus	2	25	7
Accessory lesser palatine foramen	2	25	7
Incomplete foramen ovale	1	26	4
Double condylar facet	1	26	4
Foramen of Huschke	1	26	4
Highest nuchal line	1	26	4
Palatine torus	1	26	4
Anterior ethmoid foramen extrasutural	1	26	4
Posterior ethmoid foramen absent	1	26	4

Table 9: Non-metric traits identified on disarticulated crania from St. Giles Parish Church.

Pathology	Number of individuals	CPR (%)
Cribriform orbitalia	3	11
Porotic hyperostosis	1	4
Dental caries	6	22
Periodontal disease	4	15
Dental calculus	4	15
Dental abscess	2	7
Dental enamel hypoplasia	2	7
AMTL	2	7

Table 10: Pathological lesions identified on the disarticulated crania from St. Giles Parish Church.

Context	Frontal	Occipital	Left temporal	Right temporal	Mandible	Maxilla	Complete skull	Total
(1044-1) BS1	95	74	42	44	56	11	20	342
(1044-2) BS2	2	2	3	1	4	1	1	14
(1044-4) BS4	9	9	6	7	11	4	2	48
[1031]-(1032)	0	3	0	0	1	0	0	4
(1000)	25	19	18	11	6	2	3	84
(1000) - trench next to boundary wall	17	2	9	3	8	8	1	48

Total	148	109	78	66	86	26	27	540
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Table 11: Disarticulated skeletal remains of the skull used to determine minimum number of individuals (BS = brick structure).

Context	Left ilium	Right ilium	Left ischium	Right ischium	Left pubis	Right pubis	Left complete	Right complete	Total
(1044-1) BS1	19	29	5	7	3	1	1	2	67
(1044-2) BS2	4	0	0	0	0	0	1	0	5
(1044-4) BS4	4	6	0	3	0	0	0	0	13
[1031]-(1032)	2	0	2	0	0	0	0	0	4
(1000)	8	10	0	0	0	1	1	0	20
(1000) - trench next to boundary wall	1	3	1	1	0	0	0	0	6
Total	38	48	8	11	3	2	3	2	115

Table 12: Disarticulated skeletal remains of the pelvises used to determine minimum number of individuals (BS = brick structure).

Context	Left prox third	Right prox third	Left midshaft third	Right midshaft third	Left distal third	Right distal third	Left prox half	Right prox half	Left distal half	Right distal half	Left complete	Right complete	Total
(1044-1) BS1	10	12	62	50	10	23	14	15	7	4	15	12	234
(1044-2) BS2	1	1	0	1	0	0	2	1	1	0	0	0	7
(1044-4) BS4	2	1	7	6	1	3	5	3	1	1	3	0	33
[1031]-(1032)	0	0	1	1	0	0	0	0	0	0	0	0	2
(1000)	3	3	15	9	5	2	6	10	3	2	0	1	59
(1000) - trench next to boundary wall	3	1	2	2	1	2	0	0	1	1	2	0	15
Total	19	18	87	69	17	30	27	29	13	8	20	13	350

Table 13: Disarticulated femora used to determine minimum number of individuals (BS = brick structure).

Context	Bone	Average measurement	Age	Age category
(1000)	Left femur	13.3cm	6 -18 months	Infant-child
(1000)	Right tibia	16.5cm	4-5 years	Child
(1000)	Left humerus	18.7cm	5-6 years	Child
(1000) Trench nr boundary wall	Right tibia	52.67mm	Foetus	Foetus
(1000) Trench nr boundary wall	Right humerus	72.91mm	0-6 months	Neonate-infant
(1000) Trench nr boundary wall	Right ulna	61.32mm	0-6 months	Neonate-infant
(1000) Trench nr boundary wall	Left radius	55.86mm	0-6 months	Neonate-infant
(1000) Trench nr boundary wall	Right radius	55.71mm	0-6 months	Neonate-infant
(1000) Trench nr boundary wall	Right ulna	84.10mm	6-18 months	Infant-child
(1000) Trench nr boundary wall	Left femur	19.5cm	2.5-5 years	Child
(1000) Trench nr boundary wall	Left tibia	15.1cm	3.5-4.5 years	Child
(1044-1) BS1	Right tibia	56.49mm	35 fetal weeks	Foetus
(1044-1) BS1	Left ulna	42.24mm	Foetus	Foetus
(1044-1) BS1	Left femur	12.7cm	0-1 years	Neonate-infant
(1044-1) BS1	Left femur	14.4cm	1-2.5 years	Child
(1044-1) BS1	Left femur	14.8cm	1-2.5 years	Child
(1044-1) BS1	Left femur	17.0cm	2-4 years	Child
(1044-1) BS1	Left femur	19.3cm	3-5 years	Child
(1044-1) BS1	Left tibia	17.4cm	4.5-5.5 years	Child
(1044-1) BS1	Right tibia	17.4cm	4.5-5.5 years	Child
(1044-1) BS1	Right femur	22.1cm	4-6 years	Child
(1044-1) BS1	Left femur	21.9cm	4-6 years	Child
(1044-1) BS1	Left ulna	17.3cm	6-10 years	Child

(1044-1) BS1	Right humerus	21.2cm	7-8 years	Child
(1044-2) BS2	Left femur	12.0cm	0.5-1.5 years	Infant

Table 14: Disarticulated long bone lengths employed to estimate age of the juvenile (i.e. individuals under 12 years of age) portion of the cemetery population.

Medieval and Post-Medieval Pottery Tables

lpsw-t	variable surface and core colour, pink, salmon, light orange, cream	Sparse-moderate quartz, sparse-moderate fe oxide, inclusions generally in 0.25-0.5mm range
lrs-w-t (1)	orange surfaces, mid grey core	sparse sub-angular quartz grains, sparse-moderate irregular voids, sparse-moderate fe oxide – all inclusions <0.25mm
lrs-w-t (2)	orange /brown surfaces, mid grey core	sparse sub-rounded quartz grains up to 0.5mm, sparse sandstone, grain size <0.25mm, sparse-moderate irregular voids <0.25mm, sparse-moderate fe oxide up to 1.0mm
lrs-w-u (1)	light brown surfaces and clearly defined margins, dark grey core	sparse sub-angular quartz grains, <0.25mm, occasional larger grains
lrs-w-u (2)	light brown surfaces and clearly defined margins, dark grey core	sparse- moderate sub-angular quartz grains, mainly 0.25mm – 0.5mm, occasional larger grains

Table 15: The Medieval pottery codes and fabric descriptions.

Fabric/Ware	1000	1002	1024	Total
lpsw			1	1
lpsw-t	2	8		10
lrs-w-t (1)	2	1		3
lrs-w-t (2)	1			1
lrs-w-u (1)	1	5		6
lrs-w-u (2)		2		2
Sneyd Green ware		1		1
Midlands purple	2	1		3
Yellow ware	3			3
Mottled ware	3			3
North Devon Gravel-tempered ware		1		1
Trailed Slipware	13			13
Embossed slipware	1			1
Feathered slipware	6			6
Total Sherd Count	34	19	1	54
Fabric/Ware	1000	1002	1024	Total
lpsw			4	4
lpsw-t	68	150		218
lrs-w-t (1)	34	8		42

Irsw-t (2)	20			20
Irsw-u (1)	34	29		63
Irsw-u (2)		5		5
Sneyd Green ware		33		33
Midlands purple	123	12		135
Yellow ware	58			58
Mottled ware	27			27
North Devon Gravel-tempered ware		74		74
Trailed Slipware	229			229
Embossed slipware	24			24
Feathered slipware	72			72
Total Sherd Weight (g)	689	311	4	1004

Table 16: Quantification of pottery by context.

Medieval Ceramic Floor Tile Tables

<i>Complete counter relief tile</i>	129-30mm	120-22mm	25-30mm	no	yes	u/g white slip, yellow glaze	no	
<i>corner fragment</i>			28mm	no	heavily on upper face	Olive glaze on base and edges	no	cat paw print
<i>corner fragment</i>			23-24mm	no	no	dark green-black glaze	on base and edges	massively overfired, waster?

Table 17: Floor tiles from context 1000.

<i>Complete counter relief tile</i>	Clean red fabric, sparse-moderated rounded quartz, up to 0.5mm, very rare grains up to 2.0mm
<i>corner fragment</i>	Red Fabric, very fine sandy matrix (silt-sized grains), rare-sparse rounded quartz grains up to 0.25mm
<i>corner fragment</i>	Dark grey, overfired, moderate sub-angular quartz c. 0.5mm

Table 18: Floor tile fabrics.

Inhumation Artefact Tables

Burial Number	Ceramics	Artefacts	Date
SK101	Whiteware- 2 sherds, blackware 1 sherd	Clay pipe- 2 sherds, coffin nails	19th century
SK102	Whiteware- 2 sherds, creamware 2 sherds, blackware 2 sherds	Clay pipe-1 sherd, Animal bone. Small porcelain button, coffin nails and	19th century

		fragments of coffin plate	
SK103	Whiteware- 1 sherd, blackware 1 sherd	Window glass fragment, shroud pin, corroded copper button, coffin nails and fragments of coffin plate, outline of degraded coffin preserved	19th century
SK104	Whiteware- 5 sherds, creamware 4 sherds, trailed slipware- 1 sherd, medieval courseware 1 sherd, blackware 6 sherds	Clay pipe 1 sherd, coffin nails and fragments of coffin plate.	19th century
SK105	Whiteware 1 sherd, Creamware 11 sherds, stoneware 2 sherds, slipware 1 sherd, midlands purple ware 1 sherd, yellow ware 1 sherd	Metal object, coffin nails and fragments of coffin plate.	18th century?

Table 19: Artefacts recovered from within the fills of the inhumation burials.

Creamwares- c.1750's – 1840's.

Whitewares- c.18th- present.

Yellowwares- c.16th and 17th centuries.

Blackwares- End of 18th – 19th centuries. (Also post medieval blackwares late 16th centuries).

Midlands purple wares- Late 14th and 15th centuries.

Slipwares- later 17th and early 18th centuries.

**Appendix 3
Pottery Catalogue**

Ctxt	Fabric/Ware	qty	wght	mv	form	Comment	Date
1000	embossed slipware pale salmon pink fabric	1	24	1	fluted hw	int. yellow glaze, ext feathered, embossed, repeating curvilinear design, possibly a figurine cup	later 17th-mid 18th c
1000	feathered slipware	1	24	1	platter	Pie-crust rim	later 17th-mid 18th c
1000	feathered slipware	4	43		platter	could be from four vessels	later 17th-mid 18th c
1000	feathered slipware	1	5		hw	feathered slip on ext	later 17th-mid 18th c
1000	lpsw-t	1	63		jug	strap handle with irregularly-shaped stabbing, very worn	mid 13th-15th c
1000	lpsw-t	1	5		jug	ext. surface brown, some thin olive glaze	mid 13th-15th c
1000	lrsw-t (1)	1	27		jug	v. worn ext. surface, trace of glaze, combed horizontal band below combed wavy lines	13th c
1000	lrsw-t (1)	1	7		jug	horizontal band of combing, trace of ext. glaze, some ext. soot	13th-14th c
1000	lrsw-t (2)	1	20		jug	base sherd, very worn but vestige of a thumbed base	13th-14th c
1000	lrsw-u (1)	1	34		cpj	worn, external soot	13th-14th c
1000	Midlands purple	1	86	1	bowl	everted tapering rim	15th-16th c
1000	Midlands purple	1	37	1	jar/cistern	stubby, lid-seated rim	15th-16th c
1000	mottled ware	1	13		small cup/albarello	base sherd, l-o-d	later 17th-mid 18th c
1000	mottled ware	1	8		mug	reeded	later 17th-mid 18th c
1000	mottled ware	1	6		mug handle		later 17th-mid 18th c
1000	trailed slipware (1) buff fabric	2	24		bowl	u/g red slip, l-o-d	mid 17th-early 18th c
1000	trailed slipware (1) pale salmon pink fabric	1	39	1	bowl	base sherd, l-o-d	mid 17th-early 18th c
1000	trailed slipware (1) pale salmon pink fabric	1	10		bowl	base sherd, l-o-d	mid 17th-early 18th c
1000	trailed slipware (1) pale salmon pink fabric	1	13		bowl	base sherd, l-o-d	mid 17th-early 18th c
1000	trailed slipware (1) red fabric	1	24	1	Flange-rim bowl		mid 17th-early 18th c

						c	
1000	trailed slipware (1) red fabric	1	9		bowl	base sherd, l-o-d	mid 17th-early 18th c
1000	trailed slipware (2) cream fabric	1	37		large cup/bowl	base-body, int. yellow glaze, ext black glaze, l-o-d 'tube-lining' infilled with feathered white slip	later 17th-mid 18th c
1000	trailed slipware (2) pale brown fabric	1	30		cup	Base-body, int. yellow glaze, ext black glaze, l-o-d	later 17th-mid 18th c
1000	trailed slipware (2) yellowish fabric	1	13		large cup/bowl	int. yellow glaze, ext. black, l-o-d 'branch' pattern	later 17th-mid 18th c
1000	trailed slipware (3) red fabric	1	22		platter	base, int black glaze, l-o-d	mid 18th-19th c
1000	trailed slipware (4) buff fabric	1	3		mug	ext. dec, d-o-l	later 17th-mid 18th c
1000	trailed slipware (4) grey fabric	1	5	1	bowl	burnt, int/ext. Olive green glaze, white slip on int. of rim	later 17th-mid 18th c
1000	yellow ware buff fabric	1	40	1	lid		late 16th-early 18th c
1000	yellow ware buff fabric	1	15		hw		late 16th-early 18th c
1000	yellow ware salmon pink fabric	1	3		?	underglaze white slip	late 16th-early 18th c
1002	lpsw-t	1	73		jug	base- body sherd, very worn, spaced finger impressions on ba	mid 13th-15th c
1002	lpsw-t	1	33		jug	handle	mid 13th-15th c
1002	lpsw-t	6	44		jug	several vessels represented, moderately worn to very worn, traces of glaze	mid 13th-15th c
1002	lrs-w-t (1)	1	8		jug?	some tiny ext glaze spots	13th-14th c
1002	lrs-w-u (1)	5	29		cpj	more than one vessel	13th-14th c
1002	lrs-w-u (2)	2	5		cpj	sandier version of lrs-w-u (1), sherds from the same vessel	13th-14th c
1002	Midlands purple	1	12	1	jar	stubby everted rim	15th-16th c
1002	North Devon Gravel-tempered ware	1	74	1	handled jar	int. dull tan glaze	later 17th-mid 18th c
1002	Sneyd Green	1	33		jug	Body-base sherd, slaggy crud spots on int.	14th-15th c
1024	lpsw	1	4		?	possibly, some ext soot	later 17th-mid 18th c

Key

<i>cpj</i>	cooking pot/jar
<i>d-o-l</i>	dark-on-light
<i>ext.</i>	exterior/external
<i>int.</i>	interior/internal
<i>ipsw</i>	Iron-poor sandy ware
<i>lpsw-</i> <i>t</i>	Iron-poor sandy ware (table ware forms)
<i>lrsw-</i> <i>t</i>	Iron-rich sandy ware (table ware forms)
<i>lrsw-</i> <i>u</i>	Iron-rich sandy utilitarian ware
<i>l-o-d</i>	light-on-dark