



THE UNIVERSITY
OF BIRMINGHAM

**Excavations at
St. Martin's Churchyard
2001**

**Post-Excavation Assessment and
Updated Project Design.**

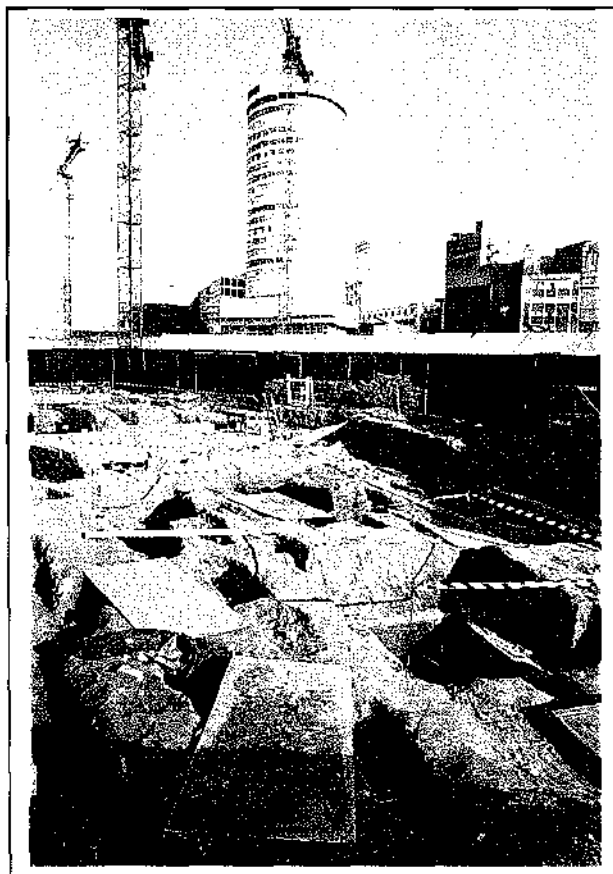
Birmingham University Field Archaeology Unit



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Project No. 798
May 2002



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by
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Contents

SUMMARY	1.
1.0 INTRODUCTION	2.
2.0 SITE LOCATION	2.
3.0 HISTORICAL BACKGROUND by Jo Adams	3.
3.1 The Parish of St. Martin's-in-the Bull Ring	3.
3.2 St. Martin's Church	6.
3.3 The Churchyard	8.
4.0 EXCAVATION AIMS	11
5.0 EXCAVATION METHOD by Richard Cherrington	11.
6.0 EXCAVATION RESULTS by Richard Cherrington	13.
6.1 Phasing	13.
6.2 Burial Structures	13.
6.2.1 Definitions and introduction	
6.2.2 Brick-lined graves	
6.2.3 Composite brick-lined grave	
6.2.4 Burial Vaults	
6.2.5 Chambered Burial Vault	
6.3 Earth-Cut graves	48.
6.4 Church Foundations and boundary wall	50.
6.4.1 Introduction	
6.4.2 Method	
6.4.3 The Church foundations	
6.4.4 The churchyard boundary wall	
7.0 ASSESSMENT: QUANTIFICATION OF RECORDS	53.
7.1 Site Records	53.
7.2 Quantification of Finds	53.
8.0 ASSESSMENT: SPECIALIST REPORTS	54.
8.1 Human Bone by Megan Brickley	54.
8.1.1 Quantity and provenance	
8.1.2 General condition of the remains	
8.1.3 Preservation summary	
8.1.4 Statement of Potential	
8.1.5 Recommendations	
8.2 Isotope analysis of hair samples by Michael Richards	59.
8.2.1 Summary of stable isotope analysis for palaeodietary reconstruction	
8.2.2 Sample preparation	
8.2.3 Results	
8.2.4 Preliminary interpretation of the results	
8.2.5 Recommendations	
8.3 Documentary Research on identified burials by Jo Adams	63.
8.3.1 Introduction	
8.3.2 Aims	
8.3.3 Method	
8.3.4 Results: research on burials in Vault 5	
8.3.5 Results: preliminary research on the other identified burials	
8.3.6 Grave Memorials	
8.3.7 Potential and recommendations	

8.4 Coffin Wood by Rowena Gale.....	83.
8.4.1 Introduction	
8.4.2 Materials and methods	
8.4.3 Results	
8.4.4 C14 samples	
8.4.5 Statement of potential	
8.4.6 Recommendations	
8.5 Coffin Furniture by Emma Hancox.....	88.
8.5.1 Introduction	
8.5.2 Coffins from the earth-cut graves	
8.5.3 Coffins from the vaults and brick graves	
8.5.4 Statement of potential	
8.5.5 Recommendations	
8.6 Textiles by Penelope Walton Rogers.....	91.
8.6.1 Introduction	
8.6.2 Quantity, date, provenance and contamination	
8.6.3 Preservation and bias	
8.6.4 Range of material	
8.6.5 Statement of potential	
8.6.6 Recommendations and method	
8.7 Dentures by Annette Hancocks.....	99.
8.7.1 Description	
8.7.2 Manufacturing process using the high-pressure vulcanizing oven	
8.7.3 Statement of potential	
8.8 Small Finds by Lynne Bevan.....	100.
8.8.1 Jewellery	
8.8.2 Shroud pins and other copper alloy items	
8.8.3 Hair accessories	
8.8.4 Worked Stone	
8.8.5 Coins	
8.8.6 Iron Item	
8.8.7 Lead Items	
8.8.8 Clay Tobacco Pipes	
8.8.9 Wood Items	
8.8.10 Glass	
8.8.11 Worked Flint	
8.8.12 Statement of Potential	
8.9 Ceramic Tile by Erica Macey.....	106.
8.10 Leather Items by Erica Macey.....	106.
8.11 Pottery by Stephanie Ratkai.....	107.
8.11.1 Description	
8.11.2 Discussion	
8.11.3 Proposals	
8.12 Animal Bone by Emma Hancox.....	113.
8.13 Plant Remains by Marina Ciaraldi.....	113.
8.13.1 Description	
8.13.2 Recommendations for future work	
8.14 Insect Remains by David Smith.....	115.
9.0 UPDATED PROJECT DESIGN.....	115.
9.1 Background.....	115.
9.2 Summary Statement of Potential.....	116.
9.3 Aims and Objectives.....	117.
9.4 Publication Synopsis.....	118.
9.5 Post-Excavation Programme.....	120.
9.6 Gantt chart.....	122.
10.0 ACKNOWLEDGEMENTS.....	123.
11.0 REFERENCES.....	124.

List of Figures

Figure 1	Site Location
Figure 2	1778 Thomas Hanson Plan of Birmingham
Figure 3	1862 Grangers Map of Birmingham
Figure 4	1950 Diocese of Birmingham: Parish Map
Figure 5	2002 Parish Map of St. Martin's (courtesy of Church Commissioners Office)
Figure 6	Site Plan: burials and vaults
Figure 7	Location of Vaults
Figure 8	Vault 5 Plan: level 1
Figure 9	Vault 5 Plan: level 2
Figure 10	Vault 5 Plan: level 3
Figure 11	Vault 5 Plan: level 4
Figure 12	Vault 30 Plan: upper level
Figure 13	Vault 30 Plan: lower level
Figure 14	Vault 10 Plan
Figure 15	Medieval and Victorian Foundation Elevations
Figure 16	Browett/ Warden Family Tree

List of Plates

Inside Cover	Excavations in progress, 'Rotunda' building in background
Plate 1	St. Martin's in the 1960's (courtesy Myra Dean)
Plate 2	View 'from Moat Lane'
Plate 3	1812 drawing
Plate 4	Church in 1835
Plate 5	Church in 1875
Plate 6	Vault 6
Plate 7	Vault 7
Plate 8	Vault 11
Plate 9	Vault 19
Plate 10	Vault 26
Plate 11	Vault 25
Plate 12	Vault 2
Plate 13	Vault 5 Structure
Plate 14	Vault 5 burials
Plate 15	Vault 9 Roof Detail
Plate 16	Vault 18
Plate 17	Vault 21
Plate 18	Vault 23
Plate 19	Vault 30 Structure
Plate 20	Vault 30 burials
Plate 21	Vault 10 Chamber B
Plate 22	Vault 10 Chamber B Grinding Stones
Plate 23	Stacked Earth-Cut burials
Plate 24	Twin burials
Plate 25	Autopsy; HB 170
Plate 26	Large Adult; HB 150
Plate 27	Extreme deformity; HB 183
Plate 28	1720 Burial
Plate 29	Foundations
Plate 30	Boundary wall section
Plate 31	False Teeth
Plate 32	Joseph Warden Advert
Plate 33	Wellington Road
Plate 34	Gold Ring

Excavations at St. Martin's Churchyard, 2001 Post-Excavation Assessment and Updated Project Design

SUMMARY

Archaeological excavation of St. Martin's churchyard, Birmingham City Centre, West Midlands (NGR SP 073 866) was undertaken by Birmingham University Field Archaeology Unit (BUFAU) between May and November 2001. The work was carried out in advance of landscaping around the church as part of the new Bullring development. The archaeological excavation was required as a condition of planning permission, and was commissioned by CgMs Consulting on behalf of the Birmingham Alliance.

The excavations recorded 857 human burials, mainly of the late 18th and 19th centuries. The majority of the burials were in simple wooden coffins in earth-cut graves. Due to the density of burial there was much intercutting of graves. Thirty five brick-lined graves and vaults were also recorded. The brick-lined graves usually contained one or more burials, stacked one on top of the other, and were roofed with stone slabs or brick barrel vaults. More elaborate vaults were square or rectangular in plan and contained up to twelve burials. These were often arranged on several 'floors', up to four in total, each of which contained up to four burials side by side. Sometimes internal partitions sub-divided the burials on each floor. One vault (Vault 10) stood out from the rest both because of its size and elaborate construction; it consisted of four chambers linked by a corridor. In addition to the articulated human remains from the earth-cut graves, brick-lined graves and vaults, there was much disarticulated human bone resulting from disturbance and clearance of earlier graves. Some of this disarticulated bone had been placed in charnel pits.

The preservation of human bone was generally good, providing excellent potential for metric and non-metric analysis (stature, age, sex, etc) and for examination of pathologies and the health of the population. The preservation of coffins and coffin furniture was very variable, with the best-preserved material coming from the vaults, where lead coffins were often used. In some cases the remains of floral tributes survived on the coffins. An important range of textiles were also preserved, representing both coffin linings and funerary attire. A small but significant assemblage of personal items, mainly rings and hair attire, was recovered.

In the case of burials in vaults, a significant number of individuals could be identified from the inscriptions on coffin plates. This has enabled research into the lives of these individuals and of the family groups buried in the vaults.

The excavation also provided an opportunity to record parts of the foundations of the medieval and Victorian church, and the churchyard wall.

Through the integration of archaeological evidence, scientific analyses of the skeletal remains and documentary research, the preliminary assessment shows that it will be possible to build up a fascinating picture of life and death in Birmingham's most central parish during the most important period of the city's growth and industrialisation.

1.0 INTRODUCTION

This report concerns the excavation of St. Martin's churchyard, Birmingham City Centre, West Midlands (NGR SP 073 866), undertaken by Birmingham University Field Archaeology Unit (BUFAU) between May and November 2001. The work was carried out in advance of landscaping around the church as part of the new Bullring development. The archaeological excavation was required as a condition of planning permission, and was commissioned by CgMs Consulting on behalf of the Birmingham Alliance. It followed a desk-based assessment prepared by CgMs Consulting (Mould 2001), which provided an assessment of the degree of survival of burials and burial vaults. A mitigation strategy was prepared by CgMs Consulting, which was approved by Dr. Mike Hodder, Planning Archaeologist for Birmingham City Council. The work was carried out in accordance with this mitigation strategy and a written scheme of investigation prepared by BUFAU. A risk assessment was also prepared by BUFAU, prior to the commencement of works.

All work was carried out in accordance with the requirements of Birmingham City Council Environmental Services and Home Office regulations concerning the treatment and removal of human burials, under the provisions of the 1981 Disused Burials Act (Amendment). In accordance with Home Office and Diocesan directions, the unnamed remains will be reburied at Quinton Cemetery, while the named remains will be reinterred at St. Martin's churchyard.

Following a summary of the archaeological results, this document provides an historical background to the site; an outline of the research aims and methodology; narrative descriptions of the excavations and building recording; an assessment of the human bones, documentary and artefactual evidence; an updated project design and a post-excavation programme.

The format of the report broadly follows the recommendations of English Heritage's *Management of Archaeological Projects* (MAP 2).

2.0 SITE LOCATION (Fig 1, Plate 1)

The site is located in Birmingham City Centre (NGR SP 073 866) and was formerly bounded by the Bull Ring, St. Martin's Lane, Spiceal Street and a markets area (Plate 1). At the time of excavation, the Bull Ring was being re-developed and was a large construction site. The archaeological site encompassed part of the former churchyard of St. Martin's Church. It was a grassed area, with a small number of memorial stones laid flat onto the ground surface. The grassed area varied in extent and height, and was sub-divided by footpaths.

The site lies to the east of the conjectured Birmingham Fault and on top of a sandstone ridge, overlooking the Rea Valley (110m-120m A.O.D.).

3.0 HISTORICAL BACKGROUND by Jo Adams

3.1 The Parish of St. Martin's-in-the-Bull Ring

A parish can now be defined as a sub-division of a diocese, an area having its own church and clergyman. In the past, however, the parish boundaries served more than just an ecclesiastical function; they provided an administrative framework for the country, as the towns and cities developed. The Parish of St. Martin's was the Ancient Parish of Birmingham, comprising 2,996 acres in Warwickshire. It was bordered by Handsworth to the north, Aston to the east, Edgbaston to the south and to the west by the Staffordshire parish of Harborne.

In the Domesday Book, the manor of Birmingham, within the Ancient Parish, was compared unfavourably with the surrounding districts. It was valued at only £1, making it one of the poorest manors. It lacked rich agricultural land and was not listed as having a church. This does not necessarily mean that a church of some sort did not exist, but there were no contemporary records to confirm it. In comparison the neighbouring manor of Aston to the east of Birmingham was much more valuable, and was described as having a greater population, a watermill, a church and more land available for agricultural development. In the ensuing centuries, however, it was Birmingham that was to develop and gradually become more important than the surrounding parishes. In the 14th century, Birmingham's growth can be gauged by its contribution to taxation assessments, which was greater than most of the neighbouring settlements. In 1340 it was ranked third amongst Warwickshire towns in the contributions of its merchants to the levy on goods. Amongst the notable families living in the Parish at that time were the Clodeshales, who were to initiate the first Chantries at St. Martin's, and the Holtes, who later built Aston Hall (Victoria History 1965, 1).

The reasons for Birmingham's development are complex and a constant subject of historical debate. However, Peter de Birmingham's decision in 1166 to purchase from the king the right to hold a weekly market seems to be an important factor. This stimulated growth, and the area became a focal point for trade (Upton 1996, 6-7).

The location of the market was likely to have been quite close, both to the St. Martin's site and the moated Manor House, with traders initially using temporary stalls before permanent timber-framed buildings were built. The term Bull Ring, now used to describe the area around St. Martin's, originated in the 1550s when butchers had to bait their bulls before slaughter to tenderize the meat. Corn Cheaping was the corn market, and cattle, horses and sheep were sold along High Street. Dairy produce was sold at one end of the Bull Ring and all other products, including linen, woollen cloth, iron, steel and brass were sold at the Wednesday and Thursday markets (Skipp 1987, 35-36.) Around the focal point of the market, a great variety of small industries developed, based initially on agriculture, then diversifying into cloth, tanning and iron industries. Whilst future urban development was to radiate from this south-eastern area of the Ancient Parish, during the 16th century the remainder was almost entirely rural, consisting of enclosed fields and pasture.

In 1538 John Leland, a travelling scholar, records in his *Itinerary of Britain* that:

"The bewty of Bremishcham, a good market towne in the extreme parts that way of Warwike-shire, is in one strete goynge up alonge almoste from the lefte ripe of the broke up a mene hille, by the lengthe of a quartar of a mile. I saw but one parochie churche in the towne." (in Toulmin Smith 1908, Part V, Vol. II, 96-7)

This long street was to become Digbeth. Both domestic and public buildings lined this street, and other roads that led off it to the east and west. The area was bounded by Steelhouse Lane and Colmore Row to the north, Pinfold Street to the west, Edgbaston Street and Digbeth to the south, and Little Park to the east. In the mid 16th century most of the enclosed area was still free of houses, with a population of between 1,400 and 2000. The occupations of the population emphasise the rural nature of the parish, with approximately 60% being labourers, journeymen and apprentices, 25% craftsmen and the remainder men of some substance. Examination of contemporary wills indicates that many of the latter were yeoman farmers, who probably employed some of the labouring population in agricultural work (Gill in Victoria History 1965, 7).

Towards the end of the 16th century the reliance on rural economy in the parish began to diminish as "fulling mills gave place to blade mills and tanneries to forges" (Victoria History 1965, 61). Initially, many people retained their farming origins and practised iron working as a dual occupation on their own small holding, but increasingly 'landless' craftsmen established their own small businesses in the town.

"There be many smithes in the towne that use to make knives and all maner of cuttyngge tooles, and many lorimars that make byts, an a greate many naylor's. So that a great parte of the towne is mayntayned by smithes." (Leland, in Toulmin Smith 1908, Part V, Vol. II, 97)

During the 17th century, the growing prosperity of the town, together with increasing immigration into the area, resulted in a huge increase in population. The area in the immediate vicinity of St. Martin's was becoming increasingly crowded. The built-up area was not at first extended, so the growing number of people were crowded into existing properties. Any new building was on the back of the existing houses facing the street, resulting in the creation of small alleys or 'entries' giving access to small houses and workshops (Victoria History 1965, 7). A row of houses had been built on the perimeter of the churchyard, partly obscuring it from view. There were many small shops in the crowded streets immediately around the church, some of which backed on to the churchyard itself. (Plate 2) They included mercers, drapers, ironmongers, saddlers, grocers and outfitters, many of whom had their wares spilling out on to the footpaths. All this, together with the crowded stalls of the market that centred around the 'Market Cross', made the area a vibrant place, where many people gathered together and conducted their daily business (Dent 1894, 55).

As the population of the central area of Birmingham grew it became apparent that St. Martin's alone could not serve the whole area. So in 1731 St. Philip's Church was built in the north of the town and the parish reduced in size. Figure 2 shows the extent of Birmingham in 1778, when most of the town, apart from the area in the immediate vicinity of St. Philip's, was within St. Martin's Parish. Subsequently the parish

boundaries were altered again as St. George's (1812) and St. Thomas' Churches (1829) were built. While the 1847 Scholastic and Ecclesiastical Map of the area indicates that there were still some vestiges of the parish left in outlying areas of the ancient boundary, the main focus of the parish was in the immediate area around the church.

During the 18th century the dependence on agriculture diminished and Birmingham became the leading metal manufacturing centre in the country, becoming renowned for the diversity of its trades. Some small domestic craftsmen, for example, turned to ironmongery. Local ironmasters then organised the trade by supplying raw materials and marketing the finished products. They gradually expanded and diversified to meet local demand, resulting in the development of many small industries (Skipp 1987, 44). To accommodate this rapid expansion new roads and buildings were built in the parish. Along Smallbrook Street, for example, an area full of a variety of small shops developed; they included, amongst others, a nail maker, steel toy maker, an umbrella maker and a jeweller.

Table 1: Population and Inhabited Houses in Birmingham Ancient Parish, 1801-1841

	1801	1811	1821	1831	1841
Population	60,822	70,207	85,416	110,914	138,215
Inhabited houses	12,044	13,652	17,323	22,532	27,272

Based on Census Reports 1801-1841 (Victoria History 1965, 9)

In the early 19th century the area around St. Martin's changed as the old houses next to the church were demolished and many of the narrow alleyways were replaced with comparatively wide, open streets (Plate 3). The main administrative centre of the town moved slightly further north as the new civic buildings were built on newly developed ground nearer the canal basin, but the parish still retained its traditional markets. A purpose-built market hall was erected, followed by specific buildings to house the fish, fruit and vegetable markets. During the 19th century the area was renowned not only for its markets, but for the street preachers, barrow boys, and soap box orators that all contributed to produce something of a fairground atmosphere around the Church (Upton 1996, 180-183). Granger's map (Fig. 3) of Birmingham illustrates the whole of the parish in 1862.

The population of the city continued to grow rapidly from 144,000 in 1831 to 344,000 in 1871, and this was recognised by the Church in 1905, when the city of Birmingham became a separate diocese. It was St. Philip's, however, not St. Martin's that became the cathedral church, but the latter retained its status as the Parish Church of a fairly small area in the centre of the city (Crowe 1975, 34). The crowded streets and high density of building resulted in high population levels, with 96 people per acre in 1931, compared to an average of 20 people per acre for the rest of the city. This was then to decrease sharply between 1931 and 1951 as a result of slum clearance, and the post war re-building of the area around the Church, that had suffered heavy bomb damage (Victoria History 1965, 12).

During the 19th century the parish boundaries throughout the city changed several times. This is illustrated by a map produced by the Diocese of Birmingham in 1950, which includes various alterations (Fig. 4).

In the 1950s and 60s the area was completely re-developed as a new road system encircled the central area of the city, and although the Bull Ring retained its markets, the parish became somewhat cut off from the main shopping and administrative areas of the city. The population that it served had been 80,000, in 1830 before dropping to 2,100 in 1938 and to 500 in 1975, illustrating vividly the change in the use of the area as the houses were demolished and small factories and warehouses took their place (Crowe 1975, 37). A map, supplied by the Church of England Church Commissioners, shows the extent of the parish in 2002 (Fig. 5).

The nature of the Parish of St. Martin's has changed constantly over the centuries as Birmingham has evolved and it is, once again, at the centre of change as the 21st century re-development of the centre of Birmingham takes place.

3.2 St. Martin's Church

St. Martin's-in-the-Bull Ring is for many one of the most enduring symbols of the City of Birmingham, with its distinctive Victorian architecture prominent in the constantly developing city skyline. This abiding quality creates the impression that the building has remained unchanged over the centuries. However, St. Martin's has undergone many alterations in its long history.

Whilst it is impossible to say precisely when the first church was built, there is evidence to suggest that there has been a place of worship on or very near the site since the 12th century. In 1872 demolition of the old building in preparation for the construction of the existing church, revealed some stonework that indicated Norman origins (Holliday 1974, 44). This suggested that the church existed in the 12th century, close to the market place and the moated site of Birmingham's manor house at the crossing point of the River Rea. Whether the church pre-dates the market, which was given its Royal charter in 1166, is unclear. Hutton, in his 1835 'History of Birmingham', observed that the churchyard was too small to accommodate the town's population, suggesting that there may originally have been another church nearby. This substantiates the theory that St. Thomas' in the Minories, a church with a large churchyard, may have served the settlement of Birmingham before St. Martin's. The church that subsequently developed on the present site was perhaps a chapel dependent upon St Thomas' (Bassett 2002, 16-17).

The earliest documentary evidence of a church on the St. Martin's site seems to be in the 'Pleas of the Crown', when sanctuary was claimed within the walls of the church in 1285. Then in 1330 Walter de Clodshale, the Lord of Saltley, founded a chantry at St. Martin's so that a priest could perform a daily service for himself and his wife. Richard de Clodshale founded a second in 1347, and a third was founded by the Guild of the Holy Cross, that was later to found a school that became the present King Edward's (Trott 1992, 10). This patronage of the chantries continued until Henry VIII's Reformation, when the priests were dispossessed and the land went to the crown (Dent 1894, 7).

An early description of the church building in *The Making of Birmingham* by R. K. Dent suggests that it consisted of a nave and chancel, north and south aisles, and a tower at the western end of the building. It had elaborate stained glass windows and there may have been paintings on the walls and ceiling (Dent 1894, 7). This early church was made of red sandstone, which weathered over the years resulting in many alterations to the fabric of the building. The churchwardens seem to have had considerable influence over these alterations, and in 1690 Thomas Gisburne and Edward Est were blamed for encasing the building in brick. Whilst this was considered necessary in view of the deterioration of the sandstone, opinion varied as to the result. Dent considered "the glaring new brickwork in which St. Martin's has recently been entombed as ugly" (Dent 1894, 55), while Hutton says "the bricks and workmanship are excellent" (Hutton 1795, 331). In 1763 George Birch and Richard Hicks added a vestry, and in 1772 Thomas Salt and Richard Gooden removed the font and made themselves a sitting room (Thackray Bunce 1870, 15).

As the town of Birmingham developed it became apparent that St. Martin's could not accommodate the rapidly growing population. In the late 17th century pews were at a premium, with a charge of 4d per seat levied in 1676 (Thackray Bunce 1873, 74). In an effort to alleviate the problem various alterations were made to the interior of the church in the 1730s so that more pews could be added. This involved stained glass windows being destroyed and tombs removed. In the old side chapels staircases were built to new galleries, so that wherever possible "every recess capable of only admitting the body of an infant, was converted into a seat" (Hutton 1795, 332).

As a result of this, light was restricted, so in 1733 the middle roof of the chancel was taken off and the side walls raised by about nine feet to accommodate more windows (Hutton 1795, 332).

The increase in the number of pews was again organised by the churchwardens, who were allowed to make the alterations themselves and sell the seats to minimize their costs (Dent 1894, 79). The unsold seats were then let for an annual rent. Some pews were labelled with their owners name and locked to prevent anyone else using them. The location of a pew in the church was also important and usually an indication of a person's status. This is illustrated by an advertisement in the local paper of 1812:

"St. Martin's Church – To be let (on lease, if desired) the most distinguished Pew in this Church, late in the occupation of S.T. Galton Esq., in front of the gallery directly opposite the Pulpit." (Quoted in Thackray Bunce 1870, 16)

Applicants were told to apply to the churchwarden, another indication of their power at the time.

By the 1860s this practice was revoked, and all parishioners were given equal rights to most of the seats in the church. Up to 1954 a few remained that could be booked for a nominal rent (Crowe 1975, 30).

In 1781 there was concern about the safety of the spire and so a Mr John Cheshire was paid £10 to build scaffolding to examine its condition. He subsequently rebuilt 40ft of the spire using stone from Attleborough, near Nuneaton, and further

strengthened it with a 105ft spindle of iron running up its centre. Part of his payment on completion of the job was that he could keep the ladders that he had used (Hutton 1795, 331; Thackray Bunce 1870, 15; Plate 4).

Nearly 70 years later, in 1849, rumours about the safety of the spire returned, prompting a idea that the whole church should be rebuilt. Designs were drawn up by an architect, Philip Hardwicke, with a projected cost of £12,000. A public appeal was launched, but only £5000 was raised and the project was abandoned. The money raised was, however, used in 1855 to re-case the tower and rebuild the spire making it safe (Thackray Bunce 1870, 17).

St. Martin's was eventually rebuilt in 1872, when the Rector, Dr Wilkinson, described it as a "brick barn abomination" (Crowe 1835, 31). All buildings, apart from the tower and spire, were demolished and a new church, 50ft longer than the old one, was built in the Gothic tradition (Plate 5). It was designed by a J.A.Chatwin, a Birmingham architect.

The church was affected by the events of the Second World War. The railings were taken down for the war effort, and then, in 1941, a bomb landed outside the west door damaging the roof and windows. Temporary repairs were carried out to enable services to continue, and the church was restored after the war in 1947. In the 1950s and 1960s building work was carried out on the southern side of the church to construct a new church hall and vestry, resulting in the building that we are familiar with today.

3.3 The Churchyard

St. Martin's Churchyard has undergone many changes over the centuries. Its location near the market areas and at the intersection of important roads meant that the boundary was altered several times, both to accommodate the needs of the church and the redevelopment of the surrounding area. These changes have necessitated the removal of burials on various occasions, until finally the western and northern parts of the remaining churchyard were excavated in 2001 for the latest development.

The church burial records begin in 1556 with, on average, two hundred burials a year until the 1800s, when this number increased dramatically. This meant that, with the limited space available, the burials were placed on top of each other resulting in a gradual increase in ground level. An early engraving illustrates this, with a view of St. Martin's Lane showing the high wall surrounding the southeast corner of the churchyard. Hutton remarks that in this case:

"the dead are raised up, and instead of the church burying the dead, the dead would in time, have buried the church"(Hutton 1835, 244).

In 1781 the serious consequences of this gradual increase in the height of the churchyard became apparent as:

“the ancient walls therof on the south side and south east sides had in several parts bulged and given way and became dangerous to such as passed along a certain street or land adjoining the said churchyard” (uncatalogued document in Birmingham Records Office, Box 6)

So under the auspices of the Act for Lightening and Cleansing the Streets, it became necessary to:

“take down and rebuild the Ancient Wall with the Buttresses or supporters thereof and to strengthen the said wall by widening the same and make it substantial and durable...three feet and six inches or thereabouts in breadth” (uncatalogued document in Birmingham Records Office, Box 6).

Several of the houses in St. Martin's Lane had outbuildings and yards that actually encroached into the churchyard, and this land was purchased in 1781 to enlarge the area available for burials. This new area was then enclosed by a new boundary wall, which was topped with iron railings.

In addition to this, in 1807 2½ acres of land were purchased in nearby Park Street, which was to become a detached burial ground for St. Martin's.

On 2nd May 1810, as the number of burials continued to increase, a faculty was granted to enlarge the churchyard by the purchase of land in Spical Street that was “abutting on the back part thereof to St. Martins's Churchyard” (un-catalogued document at Birmingham Records Office, Box 6). This was a further effort to alleviate the problem.

The number of burials peaked in 1851 and 1852, when there were 2,900 and 3,252 respectively. After that date the numbers fell to between 300 to 800 per year until 1863, when the numbers dropped dramatically to single figures (Mould 2001). This coincides with the opening of Witton cemetery, a council amenity built to serve the whole community. It is unclear whether a decision was made to cease burials in the churchyard after that date because it was full, or because it became the vogue to patronise the newer cemeteries. Certainly after 1863 the majority of burials in the churchyard were those associated with a family vault, suggesting that some sort of restriction had been brought in to limit burials at St. Martin's.

During the re-building of the church in 1872 the churchyard was disturbed again, and the Bishop of Worcester wrote:

“that when it shall be found necessary in carrying out this work to interfere with any graves or vaults the coffins and remains therein deposited shall be carefully and decently removed and forthwith re-interred without being more exposed than is absolutely necessary” (BDR/DI/13/9a).

In 1873 the Secretary of State issued an Order in Council stating that burials should be discontinued at churches throughout the city, including St. Martin's, except in vaults and walled graves with an air-tight coffin (Cox 1892, 87). All the graveyards were becoming overcrowded, creating some public health concern, and with the opening of the council-owned cemeteries slightly further from the centre of the town, more people chose to be buried there. At St. Martin's, the burial records show that in fact this began rather earlier: 544 burials took place in 1863, in sharp contrast to the total of 52 for the whole of the following period up to 1915.

The health of Birmingham residents was again a cause for some concern in 1873, when it was decided that more urban open spaces were needed for recreation. Since the burial grounds that were no longer used for interments were becoming neglected and overgrown the Corporation obtained an Act, with the consent of the Bishop of Worcester, to acquire the land and turn them into parks. A notable example of this was the Park Street burial ground, the detached graveyard of St. Martin's, that was transformed into Park Street Gardens and opened to the public in 1880.

At the same time the churchyard around St. Martin's was landscaped, with new trees planted and turf laid, and the surrounding iron railings renovated. The total cost of the improvements to the two sites was £10,263. In 1879, just prior to this work in the churchyard, a plan was drawn up (MS 943/13/2) illustrating the location of vaults and grave memorials. This, used in conjunction with a contemporary vault record book (MS943/13/1), gives some indication of the surviving grave memorials that may have been moved during the renovation.

The churchyard became even more accessible to the public in February 1927, when the City Council passed a new Bye Law stating that St. Martin's churchyard, together with other closed burial grounds in the city, would be open to the public. The churchyard then became a public park that linked the markets to the other city centre shops.

In 1960 an Act of Parliament was passed to allow removal and re-burial of human remains from the south side of the churchyard to an existing area of consecrated ground within the churchyard. This was to accommodate the construction of the new church hall and vestry. The order was issued in retrospect, having been overlooked when the building work took place in 1953 (MS 661948).

During the redevelopment of the Bull Ring in the 1960s the surrounding roads were altered again, and many of the monuments and remains were transferred to Witton Cemetery (Crowe 1975, 50).

Over the centuries, and despite changes to its boundary, the churchyard remained consecrated land until 1998. At this time it became the subject of an appropriation order by the Birmingham City Corporation, under the Town and Country Planning Act 1990, and was thus de-consecrated. This meant that the Church could no longer exercise any control over the land, which was then deemed the property of the Corporation.

Since then the churchyard has remained undisturbed until the archaeological excavation took place in 2001 to prepare the land surrounding the church for landscaping.

4.0 EXCAVATION AIMS

Ground disturbance as part of proposed landscaping was likely to expose the following:

- (i) Disarticulated human bone from disturbed burials.
- (ii) Intact burials.
- (iii) Burial vaults.
- (iv) Artefacts formerly part of burials, such as coffin fittings.
- (vi) Artefacts relating to land use before the construction of the church and burial ground.
- (vii) Foundations of the Church.
- (viii) Construction of the churchyard boundary wall.

It was considered that the aim of any archaeological excavation and recording was to recover information, provided by these remains, which was likely to consist of the following:

- (i) Confirmation of the density of burial and the extent of disturbance through intercut graves.
- (ii) The sex, stature, health, lifestyle and age of death of any individuals surviving as intact burials.
- (iii) The construction details of any burial vaults.
- (iv) The use of the site in the medieval period.
- (v) The extent of the medieval foundations of the Church and its later development.
- (vi) The extent of the churchyard and its changing boundary.

This information would not only relate to the church and burial ground, but also to life, death and industry in Birmingham in the medieval and early post-medieval periods and to the history of the land use in this part of Birmingham.

5.0 EXCAVATION METHOD by Richard Cherrington

The landscaping of the churchyard required that the site was cleared of archaeological deposits, burials and burial structures to two different, finished, reduced levels. These were depths of 800mm (Zones A & C; Fig. 7) and 1500mm (Zone B; Fig. 7) below ground level. The developers provided on-site guidance as to where and when these depths were achieved. For archaeological reasons, it was sometimes necessary to excavate and record deposits below these levels.

The former topsoil and modern landscaping deposits were removed by a 360° excavator, fitted with a toothless ditching bucket, under the supervision of an appropriately qualified archaeologist. Surviving grave memorials were recorded on

pro-forma recording sheets and photographed, before being removed. Where necessary, exposed archaeological features and grave cuts were mechanically reduced in depth to facilitate further excavation by hand. The overall site plan was produced using a total station theodolite incorporating the Fastmap system. Archaeological deposits and burials were recorded using *pro-forma* record cards for features and contexts, supplemented by colour slide, colour print, and monochrome photographs.

Brick-lined graves and burial vaults were uncovered using a 360° mechanical excavator fitted with a toothless ditching bucket, monitored by an appropriately qualified archaeologist. Variations in the construction of the burial structures meant that differing dismantling techniques were employed, based on the individual characteristics of each structure. The most common method was to hand reduce the structure to a safe, workable level using lump or sledge hammers with bolster chisels. Once the burial structures were uncovered and hand cleaned they were recorded using *pro-forma* vault record cards, context cards, and building recording sheets. Vaults were planned at a scale of 1:10 and photographed with colour slide, monochrome and colour print film.

An official from Birmingham City Council Environmental Services was present on site at all times to ensure that the conditions of the Home Office directions for the removal of human remains were adhered to. The human remains were screened from public view at all times and treated with due care and attention to decency. Excavated human remains were bagged, boxed, and transferred to the University of Birmingham for closer study. Personal protective equipment (PPE) was worn, as appropriate, during the excavation of burials.

Numerous lead coffins were encountered within the burial structures, but only those deemed to be compromised were opened and fully excavated and recorded. Lead coffins were deemed compromised if the lead shells were punctured or damaged in any way. The final decision as to whether coffins were compromised or not lay with on-site representatives of Birmingham City Council Environmental Services. In the majority of cases, human burials were excavated and recorded *in situ* whilst screened from public view. For logistical and health and safety reasons, some lead coffins were removed to a specially prepared on-site unit for excavation and recording.

The human remains, artefacts and site archive are currently stored at Birmingham University Field Archaeology Unit.

6.0 EXCAVATION RESULTS by Richard Cherrington

6.1 Phasing

The site has been provisionally divided into six phases based upon the principles of archaeological stratigraphy and associated datable artefacts, structures and coffin plates.

- Phase 1- medieval
- Phase 2- 17th century
- Phase 3- 18th century
- Phase 4- 19th century
- Phase 5- 20th / 21st century
- Phase 6- undated

The burial structures were datable to the 19th century (Phase 4), as were the burials contained within them. Many of the earth-cut burials were datable to either Phase 3 or 4, either by stratigraphic relationships or the level of preservation. However, some burials remain undatable (Phase 6) and could have been interred at any point in the graveyard's history.

6.2 Burial Structures (Figs 6 & 7)

6.2.1 Definitions and introduction

A total of thirty-five brick-lined graves and burial vaults were excavated at St. Martin's. For the purposes of this report, a *brick-lined grave* comprises a subterranean chamber lined with brick and closed with a barrelled roof or ledger stone. Brick-lined graves have the capacity to receive a single burial laid horizontally, or multiples thereof, stacked one on top of the other. A total of twenty-three brick-lined graves of various designs were identified. The term *composite brick-lined grave* has been applied to one burial chamber (V25). This comprised a chamber with three layers of pudlocks cut into the natural sandstone. The finished height was achieved by the addition of several courses of brickwork. *Burial vaults* comprise a stone- or brick-built chamber capable of housing a minimum of two coffins side by side, and are closed with a barrelled roof. A total of eleven burial vaults of various designs were identified. The term *chambered vault* has been applied to one large and elaborate burial vault (V10).

With the exception of V25, all the brick-lined graves and burial vaults can be dated to the late 18th century or the 19th century. Construction dates for the brick-lined graves and burial vaults have been provided by the identification of diagnostic architectural styles and building materials, such as bricks. Further dating evidence has been supplied by the study of associated burials, inscriptions and coffin furniture. A stylistic analysis of the earliest construction phase of V25 may reveal a much earlier date for this structure.

Many of the burial structures appeared to be grouped together, both spatially and structurally (see Fig. 7). Six possible groups are outlined in the table below.

Table 2 Burial structures: spatial groupings

Group	Associated vaults
I	V31, V32, V33
II	V30, V35, V36
III	V13, V25, V26
IV	V11, V12, V20, V21
V	V03, V04, V05
VI	V16, V17, V18

Interment in brick-lined graves or burial vaults occurs for a wide variety of reasons, some of which may be particular to conditions at St. Martin's. Burial structures reflect the socio-economic status of the occupants and serve to separate them from the 'rank and file' of the churchyard. Deposition in a burial structure also expresses the wish to keep the family unit together. Associated monuments above ground would have given a focus for mourning and paying respects.

Interment in a burial structure acted as a safeguard against the perceived threat posed by grave robbers, the so-called 'resurrection men' of the 19th century. Furthermore, the excavation of new graves constantly disturbed earth-cut burials, and deposition in a burial structure prevented any such disturbance. The construction of so many brick-lined graves and burial vaults in the relatively small area of St. Martin's Churchyard demonstrates many of the concerns surrounding intensive burial in the burgeoning industrial cities of 19th century England.

6.2.2 Brick-lined graves

(V01, V03, V06, V07, V08, V11, V12, V13, V14, V15, V17, V19, V20, V22, V24, V26, V27, V28, V31, V32, V33, V35 and V36)

Summary

This was the largest group, with twenty-three examples identified. Although designs vary, the most typical form of brick-lined grave consisted of a rectangular chamber cut through the earth to the top of the natural sandstone. The chamber was then lined with courses of bricks that were one or two skins thick, laid in stretcher and header courses and bonded with mortar. The finished examples measured approximately 2-2.5m in length, 1-1.5m in width, and were dug to a depth of up to 2.5m.

Interior effects included the whitewashing of the walls to maximise any available daylight. The interior brickwork features often included built-in pudlocks to receive coffin supports and serve as air-vents; alternatively pudlocks were sometimes cut out of the existing brickwork. Iron fixtures associated with coffin supports were also identified. Flooring was usually formed by incorporating the natural sandstone into the design. In other cases, courses of dry-laid or mortared bricks laid flat formed the flooring.

Eleven of the brick-lined graves were sealed with a ledger stone or re-used, upturned gravestones mortared in to place; some were uncovered with their roofs collapsed. Eleven brick-lined graves with barrelled roofs were recorded; the majority were still intact.

The state of preservation of these structures varied. From a study of the brickwork, the majority appeared to be 19th century in date. The construction of the brick-lined graves would have been a relatively simple operation for a bricklayer or even a skilled labourer and would have required a minimum of planning.

As outlined above, the brick-lined graves contained a single burial laid horizontally, or multiples thereof. The preservation of the human remains and associated coffin furniture was good in comparison with the earth-cut graves. No significant differences in the states of preservation were noted between the different types of burial structure. It was noted, however, that in cases where fill had collapsed into the vault, the associated lead coffin material had degraded less than in cases where air could circulate. This may be associated with the chemical composition of the bricks and mortar.

Vault 1 (V01)

Table 3: V01 Structural summary

Structure type	Rectangular brick-lined grave
Exterior dimensions	1.22m x 2.24m
Preservation	Average
Orientation	East-west
Associated structures	None
Construction	Clamped red brick, limed mortar
Roof type	Slabbed
Internal divisions	None
Flooring	Natural sandstone
Internal features	Whitewashing, pointed
Human burials	None

This was a typical example of a brick-lined grave, sealed with inverted gravestones, which were inscribed with a late-17th century date, although they had obviously been re-used. An analysis of the brickwork has dated V01 to the first half of the 19th century. When uncovered, V01 was situated directly under the stump of a large mature tree that may date from the landscaping episodes of the 1870s. The absence of burials within this burial chamber suggests that V01 was cleared ahead of a tree-planting programme. V01 was of an uncomplicated design, requiring only a moderate amount of skill from its builder.

Vault 3 (V03)

Table 4: V03 Structural summary

Structure type	Rectangular brick-lined grave
Exterior dimensions	1.2m x 2.25m
Preservation	Good
Orientation	East-west
Associated structures	V04, V05
Construction	Clamped red brick, cement mortar
Roof type	Vaulted (collapsed)
Flooring	Natural sandstone
Internal divisions	None
Internal features	Whitewashed, pudlocks
Human burials	HB 185, HB 190, HB 189

This burial chamber was situated to the southeast of the site and formed part of Group I, abutting V04 to the west. The north and south elevations of the structure were formed with a double skin of bricks, while the east and west elevations were formed by a single skin. Analysis of the brickwork, and evidence for the use of cemented mortar, suggests a construction date in the middle to late 19th century. Internal features included three rows of four pudlocks that had received timber coffin supports, one of which had survived. No *in situ* roof was present at the time of excavation, and V03 appears to have been back-filled at some time. Evidence from the brickwork suggests that a barrelled roof had sealed V03. Although of a relatively simple design, V03 comprised a high-status solid construction in an overall excellent condition.

Table 5: V03 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornament
HB 185	Neonate	Wooden	N	N	N	N	N
HB 190	Juvenile	Wooden	Y	Y	N	N	Y
HB 189	Adult	Wooden	Y	Y	N	N	N

There were three relatively poorly-preserved burials within V03, all orientated east-west. The two earlier burials (HB 190 and HB 185) lay side by side; HB 189 overlay the two earlier burials. This group comprised the remains of an adult and neonate lying together, with the remains of a juvenile interred above them. Lying with the remains of the juvenile (HB 190) was a complete necklace incorporating some 300 pink glass beads attached to a copper alloy pendant inlaid with a cut-glass rose (SF 5).

The associated coffins appear to have been of a wooden construction with metal fittings, and survived only as a dark stains in their surrounding fills. The back-filling episode appears to have contributed to the poor preservation of the human remains and coffin furniture in V03. The added weight and damp nature of the back-fill has compounded the problem.

Vault 6 (V06; Plate 6)

Table 6: V06 Structural summary

Structure type	Rectangular brick-lined grave
Exterior dimensions	2.78m x 2.90m
Preservation	Average
Orientation	East-west
Associated structures	None
Construction	Machine-cut red brick, limed mortar
Roof type	Ledger-stone, slabbed
Flooring	Natural sandstone
Internal divisions	None
Internal features	Whitewashed
Human burials	HB 152

V06 was a fairly well-built burial structure in overall good condition. The burial chamber was sealed by a possible limestone ledger-stone and a smaller upturned gravestone. The ledger-stone was chamfered and inscribed; unfortunately the inscription was unreadable due to weathering.

Table 7: V06 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB 152	Adult	Wooden	Y	Y	N	N	N

V06 contained a single inhumation (HB 152). HB 152 comprised the fairly well-preserved remains of an adult. The associated coffin (1424) survived as fragmentary wood and metal fittings, with corroded coffin grips and depositum. A layer of light yellow sand (1426) covered the burial. As in the case of V02 (below), this probably represents an attempt to sanitise the area to receive further burials or, alternatively, may be an act of closure.

Vault 7 (V07; Plate 7)

Table 8: V07 Structural summary

Structure type	Rectangular brick-lined grave
Exterior dimensions	0.97m x 2.05m
Preservation	Average
Orientation	East-west
Associated structures	None
Construction	Machine-cut red brick, limed mortar
Roof type	Ledger-stone
Flooring	Natural sandstone
Internal divisions	None
Internal features	Whitewashed, pudlocks
Human burials	HB 144, HB 141

V07 was a fairly poorly built, or at least badly planned, burial chamber in an average state of preservation. The exterior brickwork was not pointed and appeared to be poorly built. The south elevation had been particularly poorly constructed, necessitating the construction of a double-skin brick buttress against it to prevent outward collapse. The buttress appears to have had the opposite effect to that intended, however, as both the south and north elevations had visibly begun to collapse inwards. The internal features exhibited a similar lack of planning to the exterior. A single row of integral pudlocks to receive coffin supports existed on the north and south elevations, but are at different heights and would therefore not have been level. A section of a timber coffin support survived, the species of which has been identified as Scots pine. At the base of the chamber were four blue Victorian gully bricks standing on end; these appear to have been used as makeshift rests for wooden coffin supports. The same type of gully bricks were used around the church to channel water away from the roof down-pipes, and probably date to the church rebuild of 1873. The burial chamber was sealed by a chamfered ledger-stone that had partially collapsed into the chamber. Two vertical joints in the brickwork of the west elevation appeared to be the former entrance to the chamber. It appeared that the general brickwork was of such poor quality that when the heavy ledger-stone was laid down it caused two vertical cracks to form down the east-facing elevation.

Table 9: V07 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB 144	Juvenile	Wooden	N	N	N	N	N
HB 141	Adult	Wooden	N	N	N	N	N

V07 contained the remains of two individuals (HB 144 and HB 141). The earliest burial (HB 144) comprised the fairly well-preserved remains of a juvenile. The associated coffin (1397) survived as fragmentary wood and metal fittings with coffin grips and nails.

The later burial (HB 141) comprised the fairly well preserved remains of an adult, placed within the fragmentary remains of a wooden coffin (1388).

Vault 8 (V08)

Table 10: V08 Structural summary

Structure type	Rectangular brick-lined grave
Exterior dimensions	1.02m x 2.25m
Preservation	Poor
Orientation	East-west
Associated structures	None
Construction	Clamped red brick, limed mortar
Roof type	Ledger-stone (missing)
Flooring	Natural sandstone
Internal divisions	None
Internal features	Whitewashed
Human burials	HB 221, HB 226, HB 229, HB 233

V08 was a relatively poorly-built burial chamber in fairly poor condition, which was probably due to the poor quality of the initial construction.. The build of the main structure (1615) comprised a single skin of clamped red bricks laid in header and stretcher courses and bonded with a weak sand-rich limed mortar. The south and north elevations had been poorly constructed; subsequently two single-skin brick buttresses had been placed against the exterior of each elevation. The burial chamber had probably originally been sealed by a ledger-stone, but had subsequently been back-filled with a brown sandy-silt and general building rubble. One unidentifiable coin (SF 03) and a possible copper-alloy seal (SF04) were found within this backfill (1523).

Table 11: V08 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB 221	Adult	Wooden	N	Y	N	Y	N
HB 226	Adult	Wooden	N	Y	Y	N	N
HB 229	Juvenile	Wooden	N	Y	N	Y	N
HB 233	Adult	Wooden	N	Y	N	N	N

V08 contained the remains of four individuals (HB 221, HB 226, HB 229 and HB 233). The earliest burial (HB 233) comprised the very well preserved remains of an adult. The associated coffin (1633) survived as fragmentary wood and a yellow-brown stain around the body. Two later burials (HB 226 and HB 229) lay directly above HB 233. HB 226 was the well-preserved remains of an adult. The associated coffin (1616) survived as semi-decomposed and fragmentary wood, with some metal lining and coffin grips. HB 229 comprised the partial remains of a juvenile. The associated coffin (1609) only survived as traces of semi-decomposed wood. HB 221 comprised the remains of an adult. The associated coffin (1602) survived in relatively good condition.

Wood samples were taken from three coffins in V08. Analysis has shown that the identified coffins were constructed from elm. The textile samples taken from V08 were in a degraded state, precluding any conclusive identification. Small finds associated with V08 included a copper alloy seal and coffin ornament, and a copper alloy button.

Vault 11 (V11; Plate 8)

Table 12: V11 Structural summary

Structure type	Shouldered brick-lined grave
Exterior dimensions	0.95m x 2.30m
Preservation	Good
Orientation	East-west
Associated structures	V12, V20, V21, V24
Construction	Clamped red brick, limed mortar
Roof type	Vaulted (lower), slate slabbed (upper)
Flooring	Natural sandstone (lower), clamped red brick (upper)
Internal divisions	Lower and upper chambers
Internal features	None
Human burials	HB 584, HB 625

V11 was of relatively simple but neat construction, and survived in overall good condition. It was identified as a shouldered brick-lined grave. The term 'shouldered' relates to the coffin-like shape of the burial chamber. The build of the main structure comprised two phases of construction (3046 and 2733) formed by a single skin of clamped red bricks, laid in stretcher courses and bonded with a weak greyish brown limed mortar. The lower build (2733) formed a chamber to receive a single burial. The natural sandstone (1002) formed the floor of the lower chamber. The vault was sealed by a narrow barrelled roof, which had settled to a virtually flat level. This roof formed the floor of the upper chamber. The upper build was again a chamber designed to receive a single burial, and was sealed by three slate slabs (2734) mortared into position. The quality of brickwork in this build was inferior to that of the lower chamber.

Table 13: V11 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB584	Adult	Wooden	N	N	Y	N	N
HB625	Adult	Wooden	Y	N	N	Y	N

This burial chamber contained the remains of two individuals (HB 584 and HB 625). HB 625 was in the lower chamber and comprised the very poorly preserved remains of an adult. The associated coffin (2694) survived as fragments of a fabric covered wooden coffin, coffin grips and an oval *depositum*. The *depositum* was badly corroded but elements of the script were readable [*Sarah Parker...Died November...*].

HB 584 was located in the upper chamber and comprised the very poorly preserved and partial remains of an adult. The associated coffin (2606) survived as fragments of wood, coffin grips and a *depositum*.

Vault 12 (V12)

Table 14: V12 Structural summary

Structure type	Rectangular brick-lined grave
Exterior dimensions	1.20m x 2.15m
Preservation	Average
Orientation	East-west
Associated structures	V11, V20, V21, V24
Construction	Machine-cut and hand-made bricks; hard grey limed mortar
Roof type	Vaulted
Flooring	Dry-laid bricks
Internal divisions	None
Internal features	Whitewashed
Human burials	HB 703

V12 was a fairly well-built burial structure in overall good condition. It formed part of a distinct group of burial structures (Group IV) and was abutted with V21 and V11. The build of the main structure (2833) comprised a double skin of machine-cut and occasional hand-made bricks on the north and south elevations, and a single skin on the east and west elevations. All the bricks were laid in irregular header and stretcher courses and bonded with a hard grey limed mortar.

Table 15: V12 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB703	Adult	Wooden	N	N	N	N	N

The burial chamber appeared to have been cleared out at some point, and back-filled with a sandy earth containing the fragmentary remains of fabric covered wooden coffins, coffin grips, and fragments of brick, stone and slate (2869). It also contained one burial, IIB 703.

Vault 13 (V13)

Table 16: V13 Structural summary

Structure type	Rectangular brick-lined grave
Exterior dimensions	1.28m x 2.20m
Preservation	Poor
Orientation	East-west
Associated structures	V25, V26
Construction	Clamped red brick (good quality, possibly locally manufactured), limed mortar
Roof type	Ledger-stone (missing)
Flooring	Natural sandstone
Internal divisions	None
Internal features	Brick coffin supports, sandstone slab
Human burials	HB 440, HB 449

V13 was a fairly poorly built burial chamber in an average condition. Internal features included four stacks of two bricks that served as makeshift rests for wooden coffin supports. At the east end of the chamber was a grey sandstone slab leaning against the brickwork; this may have served as a chute of some description. The chamber was probably originally sealed with a ledger stone.

Table 17: V13 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB 440	Adult	Wooden	N	N	N	N	N
HB 449	Adult	Wooden	N	N	N	N	N

V13 contained two articulated burials (HB 440 and HB 449) orientated east-west. HB 440 lay above HB 449. The former comprised the fairly poorly preserved remains of an adult. The associated coffin (2275) survived as staining and fragmentary wood with some lead lining and iron nails. HB 449 was the earlier burial and comprised the fairly well preserved remains of an adult. The associated coffin (2267) survived as staining and fragmentary wood with corroded coffin grips and iron nails.

Vault 14 (V14)

Table 18: V14 Structural summary

Structure type	Rectangular brick-lined grave (truncated)
Exterior dimensions	1.05m x 1.25m
Preservation	Poor
Orientation	East-west
Associated structures	None
Construction	Clamped red brick
Roof type	Ledger-stone (missing)
Flooring	Natural sandstone
Internal divisions	None
Internal features	Whitewashed
Human burials	HB 342, HB 330, HB 312, IIB 264

V14 was a fairly poorly built burial chamber, which had been heavily truncated by modern groundworks.

Table 19 V14 Burial Details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB342	Adult	Wooden/metal	Y	Y	N	N	N
HB330	Adult	Lead/wooden	N	Y	Y	N	N
HB312	Adult	Lead/wooden	Y	Y	Y	N	Y
HB264	Adult	Lead/wooden	N	Y	N	N	N

The chamber contained four burials (HB 342, HB 330, HB 312 and HB 264) laid one on top of the other. The earliest burial (HB 342) comprised the partial and poorly preserved remains of an adult. The associated coffin (1982) survived as fragmentary wood, which has been identified as elm, and metal fittings.

HB 330 comprised the partial and very poorly preserved remains of an adult; the poor preservation was probably due to a later lead coffin (1899) being placed above it. The associated coffin (1982) survived as staining and fragmentary wood that has been identified as pine and oak. An iron button (SF 68) was found with this burial.

HB 312 comprised the fairly well preserved remains of an adult. The associated coffin (1899) consisted of a compromised lead shell and fragments of oak, elm and pine covering and lining. The lead shell had been crushed under the weight of the layers above, and was in a degraded state. A copper alloy coin (SF 74) found with this burial has been identified as a 'Coventry Halfpenny'.

The latest burial (HB 264) comprised the partial and poorly preserved remains of an adult. The associated coffin (1710) consisted of a compromised lead shell. The lead shell had been crushed under the weight of the layers above, and was in a degraded state. The coffin had been decorated with an incised diamond pattern along its sides.

Vault 15 (V15)

Table 20: V15 Structural summary

Structure type	Rectangular brick-lined grave
Exterior dimensions	1.30m x 2.50m
Preservation	Average
Orientation	East-west
Associated structures	None
Construction	
Roof type	Vaulted (collapsed)
Flooring	Natural sandstone
Internal divisions	None
Internal features	Whitewashed
Human burials	HB 255, HB 256

V15 comprised a fairly well-built burial chamber in average condition. The chamber had been sealed with a barrelled roof (2245) that had collapsed inwards.

Table 21: V15 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB255	Adult	Lead/wooden	N	Y	N	N	N
HB256	Adult	Lead/wooden	N	N	N	N	N

This burial chamber contained two individuals (HB 255 and HB 256), both interred in lead coffins. The earliest burial (HB 255) comprised the remains of an adult in a very poor condition, but with good survival of head hair. The associated coffin (1682)

consisted of a lead shell with the remains of elm wood and a wool and silk ribbon coffin lining. The coffin also contained a small button (SF 29).

The later burial (HB 256) comprised the remains of a fairly well preserved adult with a good amount of head hair surviving. The associated coffin (1683) consisted of a lead shell with the remains of wood and fabric lining.

Vault 17 (V17)

Table 22: V17 Structural summary

Structure type	Rectangular brick-lined grave
Exterior dimensions	0.80m x 2.30m
Preservation	Average
Orientation	East-west
Associated structures	V16, V18
Construction	Machine-cut red bricks, limed mortar
Roof type	Slabbed
Flooring	Natural sandstone
Internal divisions	None
Internal features	Whitewashed
Human burials	HB 225, HB 186

V17 comprised a fairly poorly-built burial chamber in a truncated condition. The chamber was sealed with four limestone slabs mortared into place. Analysis of the brickwork suggests a late 19th century date for this structure.

Table 23: V17 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB 225	Adult	Wooden	Y	Y	N	Y	N
HB 186	Adult	Wooden	N	Y	N	Y	N

This burial chamber contained the remains of two individuals (HB 225 and HB 186). The earliest burial (HB 225) comprised the partial and poorly preserved remains of an adult, which included elements of body fat. The associated coffin (1612) survived as fragmentary wood and fabric lining with coffin grips, nails and *depositum*. Textile samples have revealed the presence of wool union associated with HB 225.

The later burial (HB 186) comprised the very partial and poorly preserved remains of an adult. The associated coffin (1513) survived as fragmentary wood and fabric lining with coffin grips, nails and *depositum*.

Vault 19 (V19; Plate 9)

Table 24: V19 Structural summary

Structure type	Rectangular brick-lined grave
Exterior dimensions	1.07m x 2.51m
Preservation	Good
Orientation	East-west
Associated structures	V02
Construction	Clamped red brick, limed mortar
Roof type	Vaulted
Flooring	Natural sandstone, dry-laid bricks
Internal divisions	None
Internal features	None
Human burials	HB 262

This burial chamber lay immediately north of, and was cut by, V02. The western end of V19 was built onto a slight outcrop of natural sandstone (1002), which formed the floor at the western end of the chamber. Flooring at the eastern end of the chamber comprised dry-laid bricks placed flat. The barrelled roof that sealed the chamber was in an overall good condition, although some damage had occurred during the later construction of V02. This damage was evident on the eastern half of the roof, where a partial re-build was clearly visible.

Table 25: V19 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB262	Adult	Wooden	Y	Y	N	Y	N

V19 contained a single inhumation (IIB 262), which comprised the remains of an adult in a very poor state of preservation. It survived only as a fragmentary outline of the skeleton. The associated coffin (1701) was reasonably well preserved. The coffin was constructed of elm and pine with elaborate oval grip plates, coffin grips and *depositum*. Textile samples revealed the presence of wool union and silk ribbon.

Vault 20 (V20)

Table 26: V20 Structural summary

Structure type	Shouldered brick-lined grave (2 chambers)
Exterior dimensions	1.06m x 2.51m
Preservation	Good
Orientation	East-west
Associated structures	V11, V12, V21, V24
Construction	Clamped red brick (lower), machine-cut red brick (upper); limed mortar
Roof type	Vaulted
Flooring	Natural sandstone (lower), vaulted (upper)
Internal divisions	Upper and lower chambers
Internal features	None
Human burials	HB 768, HB 746

This burial chamber survived in a good state of preservation. It was an example of a dual-level structure. Analysis of the brickwork revealed two phases of development. The build of the lower level was noticeably superior to that above.

The lower build of the burial chamber (3072) comprised a single skin of clamped red bricks on the east, south and west elevations, and a double skin on the north elevation. All the brickwork was laid in stretcher courses and bonded with a light brown limed mortar. Natural sandstone was incorporated into the build of the south wall.

The vaulted roof of the lower chamber formed the flooring for the upper chamber. The upper level was closed with a barrelled roof and was far more crudely constructed than the lower.

Table 27: V20 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB 768	Adult	Wooden	N	N	N	N	N
HB 746	Adult	Wooden	Y	Y	N	N	N

The upper level contained a single burial (HB 746) with associated coffin furniture and fragments of elm wood. The burial was in a very poor state of preservation. The lower level contained a single burial (HB 768) with associated coffin furniture. Although the coffin was in a good condition, the burial within was in a poor state of preservation.

Vault 22 (V22)

Table 28: V22 Structural summary

Structure type	Rectangular brick-lined grave
Exterior dimensions	1.07m x 2.42m
Preservation	Good
Orientation	North-south
Associated structures	V23 (possible)
Construction	Clamped red brick, limed mortar
Roof type	Ledger-stone (missing)
Flooring	Natural sandstone
Internal divisions	None
Internal features	Whitewashed, padlocks
Human burials	HB 677, HB 669, HB 661

The structure was of a simple design and had survived in a good state of preservation. It is interesting to note that this structure is orientated north-south, an odd alignment for a Christian burial of this period. This may have been due to pressure on space, although this is not apparent from the recent excavation.

Table 29: V22 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB 677	Juvenile	Wooden	N	Y	N	N	N
HB 669	Adult	Wooden	N	Y	N	N	N
HB 661	Adult	Wooden	N	N	N	Y	N

The chamber contained three burials, one juvenile and two adults (HB 677, HB 669 and HB 661). These three burials were laid on top of one another. The vault had been back-filled at some time; this led to poor preservation of the burials and associated coffins. In all three cases the coffins only survived as stains, fragmentary wood and corroded metal fittings.

Vault 24 (V24)

Table 30: V24 Structural summary

Structure type	Possible burial structure (truncated)
Exterior dimensions	0.90m x 1.40m (surviving)
Preservation	Poor
Orientation	Unclear
Associated structures	None
Construction	Clamped red brick, limed mortar
Roof type	None
Flooring	None
Internal divisions	None
Internal features	None
Human burials	None recorded

This structure comprised the extremely truncated remains of a possible burial structure. After a record of the brickwork was made, no further work was carried out.

Vault 26 (V26; Plate 10)

Table 31: V26 Structural summary

Structure type	Rectangular (slightly shouldered) brick-lined grave
Exterior dimensions	1.09m x 2.09m
Preservation	Average
Orientation	East-west
Associated structures	V13, V25
Construction	Clamped red brick, limed mortar, corbelled design
Roof type	Ledger-stone (missing)
Flooring	
Internal divisions	None
Internal features	None
Human burials	HB 489

V26 comprised a fairly well-built burial chamber in an average state of preservation. The build of the main structure (2730) incorporated a corbelled design and comprised a single skin of clamped red bricks on the east and west elevations and a double skin on the north and south elevations. It appeared to be slightly shouldered in shape. Analysis of the brickwork suggests an early to middle-19th century date of construction. The chamber was sealed with four limestone slabs mortared into place.

Table 32: V26 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB 489	Adult	Lead/Wooden	N	Y	N	Y	N

The burial chamber contained a single burial (HB 489) of an adult. The associated coffin (2372) comprised a lead shell lined and covered in wood. Sampling has identified the wood as elm. A *depositum* was recorded, but no inscription was identified. A fragment of silk tabby ribbon was also recorded.

Vault 27 (V27)

Table 33: V27 Structural summary

Structure type	Rectangular brick-lined grave
Exterior dimensions	1m x 2.30m
Preservation	Average
Orientation	East-west
Associated structures	None
Construction	Clamped red brick, limed mortar
Roof type	Ledger-stone (missing)
Flooring	Natural sandstone
Internal divisions	None
Internal features	None
Human burials	HB 570, HB 522

V27 comprised a simple brick-lined grave in overall good condition. It was situated in close proximity to V28 and directly outside the main entrance to the church. The chamber had been back-filled with broken fire-blackened roofing tiles and fragments of dressed grey sandstone. This material may well be associated with air-raid damage to the church during the Second World War.

Table 34: V27 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB 570	Adult	Wooden	N	N	N	N	N
HB 522	Adult	Wooden	N	N	N	N	N

V27 contained two adult inhumations (HB 522 and HB 570), stacked one above the other. The earliest burial (HB 570) was in a poor state of preservation. Only the partial remains of the later burial (HB 522) survived. The associated coffins survived as fragmentary wood, metal fittings and coffin handles.

Vault 28 (V28)

Table 35: V28 Structural summary

Structure type	Rectangular brick-lined grave
Exterior dimensions	1.16m x 2.39m
Preservation	Average
Orientation	East-west
Associated structures	None
Construction	Clamped red brick, limed mortar
Roof type	Ledger-stone (missing)
Flooring	Natural sandstone
Internal divisions	None
Internal features	None
Human burials	HB 663, HB 652

V28 comprised a simple brick-lined grave in overall good condition. It was situated in close proximity to V27 and the main entrance to the church. The burial chamber was probably sealed by a ledger-stone but no evidence of this survived.

Table 36: V28 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB 663	Adult	Wooden	N	N	N	N	N
HB 652	Adult	Wooden	N	N	N	N	N

V28 contained two adult inhumations (HB 652 and HB 663). The earliest burial (HB 663) was quite disturbed and in a poor state of preservation. The associated coffin only survived as a dark stain in the surrounding fill. Two corroded coffin handles were also present. The later burial (HB 652) was in an average state of preservation. The associated coffin survived as fragmentary wood, metal fittings and coffin handles.

Vault 31 (V31)

Table 37: V31 Structural summary

Structure type	Rectangular brick-lined grave
Exterior dimensions	1.20m x 2.35m
Preservation	Average
Orientation	East-west
Associated structures	V32, V33
Construction	Clamped red brick (particularly thin), limed mortar
Roof type	Vaulted
Flooring	Dry-laid bricks
Internal divisions	None
Internal features	Pudlocks, partially whitewashed
Human burials	HB 777, HB 761, IIB 756

V31 comprised a fairly crudely-built burial structure in an average condition. This burial chamber has been truncated by the 1873 foundations of the church. Analysis of the brickwork suggests an early to middle-19th century date for this structure. The burial chamber was sealed by a vaulted roof, which had collapsed into the interior.

Table 38: V31 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB 777	Adult	Wooden	N	Y	N	N	N
HB 761	Adult	Wooden	N	Y	N	N	N
HB 756	Adult	Wooden	Y	Y	N	N	N

V31 contained three poorly-preserved adult burials (HB 777, HB 761 and HB 56). The associated coffins were of a wooden construction and only survived as fragmentary wood or stains in the surrounding fills. Coffin furniture survived in a

highly corroded state. The vaulted roof had collapsed into the interior, along with an earthy fill containing disarticulated human bone.

Vault 32 (V32)

Table 39: V32 Structural summary

Structure type	Rectangular brick-lined grave
Exterior dimensions	1.35m x 2.29m
Preservation	Average
Orientation	East-west
Associated structures	V31, V33
Construction	Clamped red bricks, hard cemented mortar
Roof type	Vaulted
Flooring	Natural sandstone
Internal divisions	None
Internal features	Pudlocks, brick coffin supports
Human burials	HB 724

This burial chamber was butted against V33 and V31. The construction of V32 comprised a single skin of clamped red bricks, laid in stretcher courses and bonded with a hard cemented mortar.

Table 40: V32 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB 724	Adult	Wooden	N	N	N	N	N

The burial chamber contained one adult burial (HB724) in a poor state of preservation. The associated coffin survived as fragmentary wood and metal fittings. Coffin supports were formed by two lines of mortared bricks running across the width of the chamber.

Vault 33 (V33)

Table 41: V33 Structural summary

Structure type	Rectangular brick-lined grave
Exterior dimensions	1.27m x 2.46m
Preservation	Average
Orientation	East-west
Associated structures	V31, V32
Construction	Clamped red bricks, hard cemented mortar
Roof type	Vaulted
Flooring	Natural sandstone
Internal divisions	None
Internal features	Pudlocks
Human burials	HB 789, HB 779

This burial chamber was situated to the southeast of the site, butted against V32. The construction of V33 comprised a single skin of clamped red bricks, laid in stretcher courses and bonded with a hard cemented mortar. The floor of the burial chamber was formed by the natural sandstone (1002) covered with a layer of clean sand.

Table 42: V33 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB 789	Adult	Wooden	N	N	N	N	N
HB 779	Adult	Wooden	Y	N	N	N	N

The burial chamber contained two adult burials (HB 789 and HB 779), both of whom were interred in wooden coffins. The later burial (HB 779) has been identified from a depositum that reads '*Captain Adjutant Benjamin Robinson Died June 5th 1834 Aged 60 Years*'. The skeletal remains of Benjamin Robinson survived in a poor state of preservation. The associated coffin was constructed of wood and fabric and decorated with metal studs. This survived in a collapsed state. The earlier burial (HB 789) survived as partial remains in a poor state of preservation. The associated coffin only survived as fragmentary wood and metal fittings.

Vault 35 (V35)

Table 43: V35 Structural summary

Structure type	Shouldered brick-lined grave
Exterior dimensions	0.60m x 2.30m
Preservation	Average
Orientation	East-west
Associated structures	V30, V36
Construction	Clamped red brick, limed mortar
Roof type	Vaulted
Flooring	Dry-laid brick
Internal divisions	None
Internal features	None
Human burials	HB 866, HB 865

V35 is an example of a shouldered brick-lined grave which was above V36 and immediately south of V30. The construction of V35 comprised two chambers, one above the other. The build of the lower chamber (3336) comprised a single skin of clamped red brick bonded with a limed mortar. The floor of the lower chamber was formed by dry-laid bricks placed flat. The lower chamber was sealed with a shallow barrelled roof; this also formed the floor of the upper chamber. The build of the upper chamber (3335) comprised a single skin of clamped red brick bonded with a limed mortar.

Table 44: V35 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB 866	Adult	Wooden	N	Y	N	N	N
HB 865	Adult	Wooden	Y	N	N	N	N

V35 contained two adult inhumations (HB 865 and HB 866), both of which were in a poor state of preservation. The coffin furniture from V35 was also in a poor state of preservation.

Vault 36 (V36)

Table 45: V36 Structural summary

Structure type	Rectangular brick-lined grave
Exterior dimensions	1.02m x 2.14m
Preservation	Average
Orientation	East-west
Associated structures	V30, V35
Construction	Clamped red brick, limed mortar
Roof type	Vaulted
Flooring	Dry-laid brick
Internal divisions	None
Internal features	None
Human burials	HB 868

This simple, typical example of a brick-lined grave was below V35 and immediately south of V30.

Table 46: V36 Burial details

Human burial	Age group	Coffin type	Coffin plate	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB 868	Adult	Lead/wooden	Y	Y	Y	N	Y

The burial chamber contained a single inhumation (HB 868) which had been interred in a fabric- and wood-covered lead fish-tail coffin. Coffin wood samples have identified the coffin wood as being elm. Breaches around the covered lead shell revealed an incised diamond pattern. A tortoise shell hair slide probably indicates that this individual was female.

6.2.4 Composite brick-lined grave

Vault 25 (V25; Plate 11)

Table 47: V25 Structural summary

Structure type	Rectangular composite brick-lined grave
Exterior dimensions	1.40m x 2.60m
Preservation	Average
Orientation	East-west
Associated structures	V13, V26
Construction	Clamped red brick, limed mortar
Roof type	Ledger-stone (missing)
Flooring	Natural sandstone
Internal divisions	None
Internal features	Pudlocks cut into natural sandstone and brickwork
Human burials	None recorded

This burial chamber was the only example of a composite brick-lined chamber. V25 forms part of a group of three brick-lined graves (V13, V25 and V26). The earliest phase of this structure comprised a deep rectangular chamber cut into the natural sandstone (1002). Three rows of pudlocks to receive timber coffin supports were cut into the sandstone. The latest phase of construction comprised a double skin of clamped red bricks, laid in irregular header and stretcher courses and bonded with a limed mortar. One row of pudlocks had been cut into this brickwork. The composition of the brickwork suggests a possible early to middle-19th century date. The chamber had been back-filled with general graveyard fill. The chamber was probably sealed with a ledger stone, but none was present. No burials were present in V25.

6.2.5 Burial Vaults

(V02, V04, V05, V09, V16, V18, V21, V23, V30 and V34)

Summary

This comprised the second largest group of burial structures, with eleven examples identified. The design of burial vaults was far more varied than that of brick-lined graves. This probably reflects the higher status and consequent greater cost of being interred in a burial vault. Although designs vary, the most typical form of burial vault consisted of a sub-rectangular chamber cut through to the surface of the natural sandstone. The chamber was then lined with courses of bricks that were one, two or, in some cases, three skins thick, laid in stretcher and header courses and bonded with mortar. The finished examples measured approximately 2.6-4.2m in length, 2-2.8m in width, and up to 3.5m in depth. Interior effects included the whitewashing of the walls to maximise any available daylight during the deposition of burials. The interior brickwork features often included built-in pudlocks to receive coffin supports and to serve as air-vents. Alternatively pudlocks were sometimes cut out of the existing brickwork.

Two examples (V05 & V30) had interior divisions formed by slabs of stone laid both horizontally and vertically. Some vertical internal divisions were formed with brickwork. In one example (V02) sand had been deliberately spread over the burials, perhaps in an effort to sanitise the area. Iron braces and fixtures associated with coffin supports were also identified. Flooring was usually formed by incorporating the natural sandstone into the design. In other cases, courses of dry-laid or mortared bricks laid flat formed the flooring. Barrelled brick-built roofs were encountered in both an intact and a collapsed state.

The burial vaults contained two or more burials laid horizontally, or multiples thereof. The preservation of the human burials and associated coffin furniture was good in comparison with the earth-cut graves. No significant differences in the states of preservation were noted between types of burial structure. The majority of the vaults were uncovered in a structurally sound condition.

Vault 2 (V02; Plate 12)

Table 48: V02 Structural summary

Structure type	Rectangular burial vault
Exterior dimensions	2.0m x 2.6m
Preservation	Good
Orientation	East-west
Associated structures	V19
Construction	Clamped red brick, limed mortar
Roof type	Vaulted (collapsed)
Flooring	Quarry tiles, clamped red brick (mixed, dry-laid)
Internal divisions	Brick partition
Internal features	Whitewashing, iron straps,
Human burials	IIB 132, HB 140, IIB 151, IIB 121

The mixture of flooring materials may reflect an initial lack of materials or an episode of repair. The roof received only cursory attention, prior to its collapse during machining, but was identified as a double-skin barrelled roof. On the north-west corner, V02 cut into V19, an earlier brick-lined grave. On closer inspection of V19 it was clear that elements of V19 had needed to be rebuilt due to the damage caused by the initial excavation of the cut (F223) to receive V02. In V02 this episode is reflected by an example of 'making good' with mortar spread over some rough brickwork, where V02 and V19 inter-cut. The original entrance to V02 was located at the western end of the vault; this had been sealed with a thick slab of slate. The design of V02 was relatively straightforward but some skill would have been required to construct the vaulted roof. Later additional and remedial work was not of a high standard.

Two large piles of disarticulated human bone (1365) and (3384) were located in the southwest and northwest corners of V02. This material had been strategically placed in a 'blind spot', when viewed from the entrance opening. These remains may represent a re-organisation of burials within the vault, or alternatively may be the remains of earlier burials that were disturbed by the construction of V02. At a later stage, all of the burials within V02 appear to have been covered or 'blinded' with a layer of clean yellow building sand (1420). This episode may represent an attempt to

sanitise the interior of the vault in readiness to receive further burials, or alternatively represent an act of closure.

Table 49: V02 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
IIB 132	Adult	Wooden	Y	Y	N	N	N
HB 140	Adult	Wooden	Y	Y	N	N	Y
HB 151	Adult	Wooden	N	Y	N	N	Y
IIB 121	Adult	Wooden	N	Y	Y	Y	N

There were four articulated burials within V02, all orientated east-west. Three of the burials (IIB 132, HB 140 and IIB 151) lay side-by-side; the fourth (HB 121) lay over HB151. Two of the burials (HB 121 and HB 151) had been separated from the others by a low brick partition.

All four burials were those of adults in a reasonable state of preservation, considering the relatively poor conditions within the vault: there had been several backfilling episodes and a roof collapse. The associated coffins were constructed of wood with metal fittings. Samples of coffin wood have been identified as oak and elm. A personal ornament made of copper alloy from HB 121, and an iron button from HB 151 were noted among the burials. A very degraded coin and a plain metal disc or token were noted, but their poor condition precludes any positive identification. Textile samples taken from HB 121 have been identified as wool union and silk satin ribbon. These textiles probably represent the remains of funerary garments. Other fibres associated with coffins were identified.

Vault 04 (V04)

Table 50: V04 Structural summary

Structure type	Rectangular burial vault
Exterior dimensions	2.1m x 2.65m
Preservation	Good
Orientation	East-west
Associated structures	V05, V03
Construction	Clamped red brick, cement mortar
Roof type	Vaulted (collapsed)
Flooring	Natural sandstone
Internal divisions	None
Internal features	Whitewashed, pudlocks
Human burials	HB 269, HB 270, HB 268, HB 266, HB 267

V04 is abutted by V05 to the west and V03 to the east. Similar to neighbouring V03, the vault incorporated a relatively simple design, solidly constructed and in excellent condition. Internal features included a single row of pudlocks that had received coffin supports. No *in situ* roof was recorded during the initial inspection of the vault, but further excavation uncovered the remains of a collapsed barrelled roof (1712) within the vault.

Table 51: V04 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB 269	Adult	Wooden	Y	Y	N	Y	N
HB 270	Adult	Wooden	Y	Y	N	Y	Y
HB 268	Adult	Wooden	Y	Y	N	N	N
HB 266	Adult	Wooden	Y	Y	N	N	Y
IIB 267	Adult	Wooden	Y	N	N	N	Y

V04 contained five articulated adult burials, all orientated east-west. The three fairly poorly preserved earlier burials (HB 269, HB 270 and HB 268) lay side by side and were beneath two better preserved burials (HB 266 and HB 267), also lying side by side.

Although the associated wooden coffins survived in a fragmentary state, sampling has identified the presence of Scots pine coffins. One of the wood samples was not indigenous to the Great Britain and probably had tropical origins. The use of non-indigenous wood species in coffin construction indicates a high status burial. All five coffins had a *depositum* present but they appeared to be of the stamped variety that tend not to survive well in the vault environment, and all proved to be unrecadable. A variety of other coffin furniture was recorded.

A total of three bone combs or hair slides was recovered. These simple combs were in a relatively poor state of preservation. One example of a more elaborate bone comb was identified, but again the state of preservation was poor.

Textiles were also present in V04. Remains of blue dyed and un-dyed funerary shrouds were identified with IIB 269 and HB 270.

All the burials within V04 were overlain by a silty-sandy fill (1713), which contained gravestone fragments, coffin material, a large amount of disarticulated human bone, and the remains of two hobnailed leather shoes. This layer probably comprises the re-deposition of grave clearance material and may be associated with the construction of V04. The back-filling episode appears to have contributed to the poor preservation of the human remains and coffin furniture in V04. The added weight and damp nature of the back-fill had compounded the problem.

Vault 5 (V05)

Table 52: V05 Structural summary

Structure type	Rectangular burial vault
Exterior dimensions	2.78m x 2.90m
Preservation	Excellent
Orientation	East-west
Associated structures	V04, V03
Construction	Clamped red brick, cement mortar
Roof type	Vaulted
Flooring	Natural sandstone
Internal divisions	Sandstone slab partitions
Internal features	Whitewashed, padlocks, wooden coffin supports
Human burials	HB 574, HB 573, HB 607, HB 597, HB 587, HB 598, HB 333, HB 334, HB 335, HB 336, HB 297, HB 321, HB 304, HB 329

V05 was a very well-built, high-status burial structure, in an overall excellent state of preservation (Plate 13). It was abutted by V04 to the east, and was the only vault visible on the site prior to excavation. The build of the main structure (3343) comprised a triple skin of clamped red bricks laid in header and stretcher courses and bonded with a hard cemented mortar, consistent with that used in the construction of V03 and V04.

Table 53: V05 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB 574	Adult	Wooden/metal	N	N	Y	Y	N
HB 573	Adult	Lead/wooden	Y	N	Y	Y	N
HB 607	Adult	Lead/wooden	N	N	Y	Y	Y
HB 597	Adult	Lead/wooden	N	N	Y	Y	N
HB 587	Adult	Wooden/metal	Y	N	Y	Y	N
HB 598	Adult	Lead/wooden	Y	N	Y	Y	Y
HB 333	Adult	Lead	N	N	N	N	N
HB 334	Juvenile	Lead	N	N	Y	N	Y
HB 335	Adult	Wooden/metal	N	N	Y	N	N
HB 336	Adult	Wooden/metal	Y	N	Y	Y	N
HB 297	Adult	Wooden/metal	Y	Y	Y	Y	Y
HB 321	Adult	Lead	N	N	Y	Y	N
HB 304	Adult	Lead	Y	Y	Y	Y	Y
HB 329	Adult	Wooden/metal	N	N	Y	N	N

Table 54: V05 Named individuals

HB 297	<i>Ann Maria Browett</i>
HB 336	<i>Alfred Browett</i>
HB 573	<i>Ann Maria Warden</i>
HB 587	<i>George Warden</i>
HB 598	<i>Sarah Emma Warden</i>

V05 contained the remains of fourteen individuals - thirteen adults and one juvenile. All the burials were orientated east-west, with the exception of HB 335, which was orientated west-east. Burials within V05 (Plate 14) were separated into three levels by a series of sandstone slabs laid vertically and horizontally. The burials had been deposited in four levels within the three structural divisions.

The lowest level (Level 1) included a *loculus* in the northern half of the vault, containing HB 607. HB 573 and HB 574 were placed to the southern side of this *loculus* (see Fig. 8). In the layer of burials above these (Level 2), *Sarah Emma Warden* (HB 598) had been placed within the northern *loculus*; *George Warden* (HB 587) and HB 597 were to the south (see Fig. 9). Level 3 had not been separated with a *loculus* and there were four burials (HB 333, 334, 335 & 336), one of which (HB 335) had been arranged with the head to the east, presumably to allow all the coffins to fit into the available space (see Fig. 10). On Level 4, *Ann Maria Browett* (HB 297) was buried in what appeared to be a northern *loculus*. This coffin and burial were in a poor state of preservation because HB329 had been placed above it and caused HB 297 and associated coffin to collapse and degrade. Burials HB 321 and HB 304 were to the south. (see Fig. 11). A similar arrangement occurred in V30. What the basis for this division of burials was is unclear at present, although the grouping together of close family members, or simply temporal factors, are obvious explanations. A wide range of eco-factual samples have been taken from the burials in V05; these promise to yield important evidence for diet, lifestyle and general health.

The general state of preservation within this vault is good and has yielded a great deal of information about the occupants. Evidence from *deposita* has provided names, and birth and death dates for many of the individuals in the vault (see Section 8.3.4, below).

Wood samples from coffins show that elm predominated as the construction material for the coffins.

V05 provided the largest assemblage of textiles from the St Martin's churchyard. The textile assemblage includes coffin linings of wool, funerary garments trimmed with silk and satin, and a silk hair ribbon. A rare example of a face cloth trimmed with silk ribbon was also present.

The small finds assemblage includes shroud pins and hooks, hair combs, slides and grips, and a gold finger ring. Worthy of special mention is a set of sprung false teeth made of Vulcanite, a derivative of natural rubber (see Section 8.7, below).

Vault 9 (V09)

Table 55: V09 Structural summary

Structure type	Rectangular burial vault
Exterior dimensions	2.80m x 4.16m
Preservation	Excellent
Orientation	East-west
Associated structures	None
Construction	Machine-cut red brick, cement mortar
Roof type	Vault and slab composite
Flooring	Natural sandstone
Internal divisions	Rendered timber-studding
Internal features	Whitewashed
Human burials	14 individuals (not excavated)

At over 3m deep, V09 was the deepest vault on the site. It comprised a very well-built burial structure in excellent condition. The roof of V09 appears to have originally been vaulted. At a later date the middle portion of the roof was demolished and two steel girders were inserted lengthways, through the ends of the vault, to support the two sides of the roof. Stone slabs had been placed along the grooves of the girders to form a removable roof entrance (Plate 15). V09 lay below the 800mm excavation depth limit, and as it was not going to be affected by the landscaping of the area, the burials within were not disturbed.

Vault 16 (V16)

Table 56: V16 Structural summary

Structure type	Rectangular burial vault
Exterior dimensions	2.65m x 3.45m
Preservation	Good
Orientation	East-west
Associated structures	V17, V18
Construction	Machine-cut red brick, limed mortar
Roof type	Vaulted
Flooring	Concrete backfill
Internal divisions	Raised brick plinth
Internal features	Whitewashed
Human burials	None recorded

V16 was a well-built burial chamber in good condition. The bricked-in east-facing entrance was probably associated with a concrete back-filling episode, and therefore a later addition. The primary entrance had been at the eastern end of the vault. This opening appeared to have been later converted into a large air-vent. The chamber was sealed by a well-built barrelled roof. Only a visual inspection of this vault was possible due to the concrete back-fill. The interior of the vault had been whitewashed and a raised brickwork plinth was visible to the rear of the vault. Although no human remains were recorded it is possible that a number of individuals lie sealed beneath

the concrete back-fill. As the vault was to be unaffected by the landscaping programme, no further excavation was carried out.

Vault 18 (V18; Plate 16)

Table 57: V18 Structural summary

Structure type	Rectangular burial vault
Exterior dimensions	2.56m x 2.73m
Preservation	Good
Orientation	East-west
Associated structures	V16, V17
Construction	Machine-cut red brick, cement mortar
Roof type	Vaulted
Flooring	Natural sandstone
Internal divisions	Brick partitions
Internal features	Whitewashed
Human burials	HB 552, HB 575, IIB 576

The entrance to V18 was located at the western end of the vault and was formed by a bricked-in arched opening. The chamber was sealed with a barrelled roof in good condition. Internal features included a single row of padlocks and a brick-built partition wall. The partition wall (2106) separated HB 552 from HB 576 and HB 575. The wall was 1m high, and braced to the southern vault wall with metal straps bonded into the interior brickwork.

Table 58: V18 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB 552	Adult	Wooden	N	N	N	N	N
HB 575	Adult	Lead/wooden	Y	Y	Y	N	N
HB 576	Adult	Lead/wooden	Y	Y	Y	Y	N

V18 contained the remains of 3 individuals (HB 552, HB 575 and HB 576). Two of the coffins (2582 and 2583) were in a particularly good state of preservation.

HB 552 was very disturbed and had almost completely disintegrated, with only the skull recoverable. The associated coffin (2099) survived as a spread of decomposed wood fragments.

HB 575 burial comprised the poorly-preserved remains of an adult male. Evidence from a *depositum* has named this individual as *John Home*, who died in 1828 aged 50 (see Section 8.3.5, below). Due to the presence of soft tissue, the remains of this individual were not removed from site, but were recorded in the temporary on-site laboratory before re-burial on-site. The outer shell of the lead coffin appeared to be in a very good state of preservation but soon deteriorated when the vault was opened. This outer shell comprised elm wood covered in a green fabric and decorated with brass studs. The *depositum*, coffin grips and grip plates were still intact. The inner lead shell was of a fish-tail design and had an incised diamond pattern on the outside.

Evidence from a *depositum* has named HB 576 as *Frances Home*, who died in 1833 aged 53 (Section 8.3.5, below). The burial comprised the very poorly preserved remains of an adult female. The remains of this individual only survived as a powdered outline of a skeleton. The associated coffin comprised an inner lead shell with an incised diamond pattern on the outer surface. The degraded outer shell was made of elm. Due to the poor preservation of this individual, the remains were not removed from site, but were recorded in the temporary on-site laboratory before re-burial on-site.

Vault 21 (V21; Plate 17)

Table 59: V21 Structural summary

Structure type	Rectangular composite burial vault
Exterior dimensions	2.50m x 2.86m
Preservation	Good
Orientation	East-west
Associated structures	V11, V12, V20, V24
Construction	Clamped red brick, limed mortar
Roof type	Vaulted
Flooring	Natural sandstone
Internal divisions	Brick partition
Internal features	Brick coffin support, grave cut into natural sandstone
Human burials	HB 714, HB 707, HB 666, HB 667

It appeared that vault builders had excavated the vault cut (F781) into the natural sandstone to achieve a level floor surface and provide a solid foundation for the springer walls. The southern wall of V21 was not one continuous elevation of brickwork; the medieval church foundations slightly encroached into the vault interior. These early foundations were incorporated into the main structure and clad in brickwork to give the appearance of a continuous panel. The west wall had been built over an earlier grave cut for HB 721, with an arch incorporated into the design to protect the burial from any disturbance. A brick partition separated two burials from the rest of the vault.

Table 60: V21 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB 714	Adult	Wooden	Y	N	N	N	N
HB 707	Adult	Wooden	N	N	N	N	N
HB 666	Adult	Wooden	N	N	N	N	Y
HB 667	Adult	Wooden	N	N	N	N	N
HB 734	Juvenile	Wooden	N	N	N	N	N

V21 contained the remains of five adults and one juvenile. Preservation of the burials and associated coffins was poor. The coffins only survived as fragmentary wood and stains, with corroded metal fittings. A gold wedding ring (SF 40) was found with HB 666.

Vault 23 (V23; Plate 18)

Table 61: V23 Structural summary

Structure type	Rectangular burial vault
Exterior dimensions	1.58m x 2.42m
Preservation	Excellent
Orientation	North-south
Associated structures	V22 (possible)
Construction	Clamped red brick, limed mortar
Roof type	Vaulted with ledger stone
Flooring	Dry-laid brick
Internal divisions	None
Internal features	Pudlocks (later addition)
Human burials	HB 723, HB 722, HB 697, HB 698, HB 691, HB 702, HB 692, HB 681, HB 676

This burial chamber was situated against the boundary wall in a solitary position. Internal features included two rows of pudlocks, cut into the east and west walls. This suggests that any individuals interred in V23 would have been orientated north-south. There did not appear to have been any spatial pressure to locate V23 in such a cramped position against the boundary wall, or on a north-south alignment. From the surface, however, V23 would have appeared to be on an east-west alignment. The vaulted roof had been strengthened to receive a ledger-stone orientated in this direction. The flooring (3052) consisted of dry-laid bricks placed flat. The entrance was situated in the south elevation and comprised an arched opening that had been closed by a triple skin of brickwork.

Table 62: V23 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB 723	Adult	Lead/wooden	Y	Y	Y	N	N
HB 722	Adult	Lead/wooden	Y	Y	Y	N	N
HB 697	Juvenile	Wooden	N	Y	N	N	N
HB 698	Juvenile	Wooden	N	N	N	N	N
HB 691	Adult	Lead/wooden	N	Y	Y	Y	N
HB 702	Adult	Wooden	N	Y	Y	N	N
HB 692	Adult	Wooden	N	N	Y	Y	Y
HB 681	Adult	Wooden	N	Y	Y	Y	N
HB 676	Adult	Wooden	N	Y	Y	N	N

At first it appeared that this vault was filled with empty coffins. On closer inspection, however, it became apparent that there were the degraded remains of nine individuals (HB 723, HB 722, HB 697, HB 698, HB 691, HB 702, HB 692, HB 681 and HB 676) from three collapsed levels of timber coffin supports within the vault. The coffins had been supported by two timber beams (3047 and 3048) received by the pudlocks.

All the remains were poorly preserved and could not be removed from site for detailed examination. With the exception of HB 697 and HB 695, all the burials

appeared to be adults. Coffin types varied, there was a mixture of wooden and lead types. There was also evidence for the lining of some of the coffins with fabric. A number of the coffins had *deposita*. One of the *deposita* had a semi-legible inscription which read *Hannah [...] died January [...] 1st 18[...]7 [...] 68 years.*

Vault 30 (V30)

Table 63: V30 Structural summary

Structure type	Rectangular burial vault
Exterior dimensions	2.70m x 2.80m
Preservation	Excellent
Orientation	East-west
Associated structures	V35, V36
Construction	Quality clamped red brick, limed mortar
Roof type	Vaulted
Flooring	Natural sandstone
Internal divisions	Sandstone slab partitions, brick partitions
Internal features	Whitewashed, iron fixings
Human burials	HB 831, HB 830, HB 829, HB 841, HB 840, HB 792, HB 793, HB 794

This was a very well-preserved burial chamber (Plate 19), and was abutted by V35 and V36 to the south. The burials within V30 were separated into two levels by a layer of sandstone slabs laid horizontally. Further divisions were formed by internal brick partitions. The burial chamber was sealed with a vaulted roof; built on top of the roof was a rectangle of brickwork which appears to have been intended to receive a ledger-stone. V30 was a very well-built, high-status burial structure in overall excellent condition, located in a prominent position on the western side of the church near the west entrance. Documentary research (Section 8.3.5, below) suggests this was the family vault of a professional family, the Haines, including a solicitor amongst its number.

Table 64: V30 Burial details

Human burial	Age group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
HB 831	Juvenile	Lead/wooden	N	Y	Y	N	N
HB 830	Juvenile	Lead/wooden	N	N	Y	N	N
HB 829	Adult	Lead/wooden	Y	Y	Y	N	N
HB 841	Adult	Lead/wooden	Y	Y	N	Y	N
HB 840	Adult	Lead/wooden	Y	Y	N	N	N
HB 792	Adult	Lead/wooden	Y	N	Y	Y	N
HB 793	Adult	Lead/wooden	Y	N	Y	N	Y
HB 794	Adult	Lead/wooden	Y	Y	Y	N	Y

Table 65: V30 Named individuals

Burial	Name	Age	Date of death
HB 840	William Haines	54	2 nd July 1851
HB 841	Jane Lloyd Haines	64	21 st January 1864
HB 792	Campbell Lloyd Haines	42	18 th June 1878
HB 829	Frank Haines		16 th September 1860
HB 793	Eliza Haines	60	3 rd August 1904
HB 784	William Tertius Haines		31 st August 1869

V30 contained the remains of eight individuals: six adults and two juveniles. It appears that the bodies had been placed into three distinct groups within V30. Burials in the lower level were divided into two groups by crudely built brick partitions (see Fig. 12; Plate 20). The first group comprised two juveniles (HB 830 & HB 831), and one adult burial, *Frank Haines* (HB 829), which were located in the southern half of the chamber. The adult burial (HB 829) was orientated west-east. The second group was located in the northern half of the chamber and comprised two adult burials, *William* and *Jane Lloyd Haines* (HB 840 & 841), both orientated east-west. The upper level contained three adult burials *Campbell Lloyd Haines* (HB 792), *Eliza Haines*, (HB 793), and *William Tertius Haines* (HB 794), one of which (HB 793, *Eliza Haines*), the last to be buried, was orientated west-east (see Fig. 13).

The associated coffins were lead shells with wooden outer shells. In some cases the fabric coverings and other decorations had survived. Wood used in coffin construction was sampled and has revealed the use of both oak and elm in V30. Coffin grips, grip plates and *deposita* were also recorded.

Of special mention are two textile samples. *Campbell Lloyd Haines* (HB 792) was interred wearing a pair of fine knitted wool socks which had been darned. Part of the funerary garment worn by *Jane Lloyd Haines* (HB 841) incorporated a silk satin ribbon with looped edges. A shell button was recovered from the burial of *William Tertius Haines* (HB 794). A gold wedding ring was also found with *Eliza Haines* (HB 793).

Vault 34 (V34)

Table 66: V34 Structural summary

Structure type	Irregular shaped burial vault
Exterior dimensions	2.84m x 2.92
Preservation	Poor
Orientation	East-west
Associated structures	None
Construction	Machine-cut red brick, cement mortar
Roof type	Vaulted
Flooring	Not known
Internal divisions	Not known
Internal features	Not known
Human burials	N/A

This burial vault was situated to the southeast of the site in a relatively isolated position. The irregular design of the structure was due to it being built around one the buttresses on the eastern side of the church. This provides a construction date after the 1873 rebuild of the church. The shape of the vault can best be described as L-shaped. This vault was severely truncated by live services. No detailed work was carried out as V34 was to be preserved *in situ*.

6.2.6 Chambered Burial Vault

Vault 10 (V10; Fig. 14)

This structure was the largest and most elaborate burial vault at St. Martin's. It was situated to the north of the site, and was evidently a very high status vault. The only spatial relationship evident existed with the later V09, which slightly cut the northeast corner of V10. Vault 10 was the only example of what has been termed a 'chambered vault'.

Table 67: V10 Structural summary

Structure type	Rectangular chambered burial vault
Exterior dimensions	5.50m x 9.75m
Preservation	Excellent
Orientation	East-west
Associated features	None
Construction	Clamped red brick, limed mortar
Roof type	Composite vaulted
Flooring	Natural sandstone, dry-laid brick
Internal divisions	4 chambers, 1 corridor
Internal features	Brick coffin supports, iron fixings, mortar candle holders, inscriptions in render, worked stone, air-vents
Human burials	HB 318, HB 341, HB 370, HB 372, HB 376, HB 382, HB 383, HB 390, HB 391, HB 392, HB 400, HB 542, HB 543, HB 544, HB 545, HB 513, HB 514, HB 515, HB 516

Essentially, V10 comprised four east-west orientated vaulted burial chambers (A, B, C and D) served by a north-south orientated access corridor that ran the length of the structure. One of the chambers (chamber A) had an earlier back-filled rectangular feature (F331) cut into the natural sandstone floor. This feature may have been an early stone-cut burial chamber, but no human remains were recorded in the back-fill. The build of the vault (3414) comprised multiple skins of clamped red bricks laid in header, stretcher and other decorative courses, and bonded with a limed mortar. An analysis of the brickwork has dated this structure to the mid 19th century. The exterior brickwork was pointed in places, but most attention had been paid to the interior pointing. There was no evidence for whitewashing in the burial chambers. Close inspection of the interior brickwork revealed that many of the bricks had been recycled from other contexts, such as chimney breasts. It was apparent from the condition of the brickwork that the construction of V10 took place in at least two phases. Flooring within the vault consisted of the natural sandstone and dry-laid bricks placed flat. The interior of the vault had several interesting features such as brick coffin supports, iron fixings, mortar candle holders, inscriptions in render and

worked stone. Two circular openings in the roof of the vault appear to have served as air-vents. The construction of this vault would have involved a great deal of planning, and would probably have incurred a great deal of expense. Wood samples have revealed that oak and elm were used in the construction of the coffins in V10.

Table 68: V10 Burial details

Human burial	Chamber	Age Group	Coffin type	<i>Depositum</i> (Coffin plate)	Coffin furniture	Eco-factual samples	Textile samples	Personal ornaments
IIB 318	A	Adult	Wooden	Y	Y	N	N	Y
HB 341	B	Adult	Lead/wooden	N	N	Y	Y	N
HB 370	B	Adult	Lead/wooden	N	N	Y	N	Y
IIB 372	B	Adult	Lead/wooden	N	Y	Y	Y	Y
HB 376	B	Adult	Lead/wooden	N	Y	Y	Y	N
HB 382	B	Adult	Lead/wooden	N	Y	Y	Y	N
HB 383	C	Adult	Lead/wooden	N	N	Y	Y	N
HB 390	C	Adult	Lead/wooden	N	Y	Y	Y	N
HB 391	C	Adult	Lead/wooden	N	Y	Y	Y	N
HB 392	C	Adult	Lead/wooden	N	N	N	N	N
HB 400	D	Adult	Wooden	N	Y	Y	N	N
HB 542	D	Adult	Wooden	N	N	N	N	N
HB 543	D	Adult	Wooden	Y	N	N	N	N
HB 544	D	Adult	Wooden	N	Y	Y	N	N
HB 545	D	Adult	Wooden	N	Y	Y	N	N
HB 513	D	Juv.	Wooden	N	N	N	N	Y
HB 514	D	Juv.	Wooden	Y	N	N	N	N
HB 515	D	Juv.	Wooden	N	N	N	N	N
HB 516	D	Adult	Wooden	Y	Y	N	N	N

Chamber A contained a single adult burial (IIB 318) in a poor state of preservation. The associated coffin survived only as fragmentary wood and metal fittings.

Chamber B contained five adult burials (HB 341, IIB 370, HB 372, HB 376 and HB 382) in a good state of preservation. A *depositum* has identified one of the burials (HB 382) as *Daniel Rowlin* (see 8.2.5, below). The associated coffins, one of which had been placed on top of two grinding stones, were primarily decorated lead shells with some wood lining and covering surviving (Plates 21 & 22).

Chamber C contained four adult burials (HB 383, HB 390, HB 391 and HB 392) in a fairly poor state of preservation. The associated coffins were primarily decorated lead shells with some wood lining and covering surviving.

Chamber D contained nine burials (HB 400, HB 542, HB 543, HB 544, HB 545, HB 513, HB 514, HB 515 and HB 516) in a poor state of preservation. A *depositum* has identified one of the burials (HB 543) as *James Cookley*. The associated coffins were of a wooden construction and survived in a fragmentary condition.

6.3 Earth-cut graves (see Fig. 6)

Of the 857 burials recorded during the excavations at St Martins, 749 were in earth-cut graves. A large amount of disarticulated human remains was also recovered from charnel pits and archaeological layers. Soil conditions at St. Martin's were such that much of the dateable diagnostic coffin furniture did not survive. Preliminary phasing of the site was achieved by identifying burial style, and by the analysis of any surviving coffin furniture. Grave-cuts were relatively dated by their stratigraphic relationship to features of a known date.

Table 69: Burials by phase

Phase	Number of burials
2/3	6
3	1
3/4	20
4	443
6	377

There were several varieties of earth-cut burials at St. Martin's; the most common was a single inhumation in a supine posture buried in a wooden coffin with metal fittings. The high density of burials meant that many of the grave-cuts were truncated by later burials. The coffins and coffin furniture survived in varying degrees of preservation, ranging from barely visible stains to pieces of quite well-preserved timber. Analysis of coffin wood samples has revealed the presence of several tree species, including elm, oak and Scots pine. It was very rare for inscribed *deposita* to survive in a readable form. In some cases, two or more burials were stacked on top of each other in a single grave-cut (Plate 23). There was one example of a double adult burial (HB 502 and HB 503); here two adults had been interred, side-by-side, in a shallow grave cut (Plate 24). Both these individuals had their arms crossed over their chests. This would suggest that they had been buried in funerary shrouds, or tightly wrapped in winding sheets. The use of funerary shrouds or winding sheets was evident from the numerous fastening pins recovered.

There are some burials which deserve special mention. Several of the burials had been subject to autopsy prior to interment. This was evident from lateral surgical cuts around the top of the cranium, as was the case with HB 170 (Plate 25). Some burials were of unusually large adults (Plate 26). Many of the burials, such as HB 183, exhibited interesting pathological features (Plate 27). Further work promises to enhance our understanding of the health and lifestyle of those buried St Martins (see Section 8.1, below). Neonates were often buried with only a winding sheet; in many cases they were buried with the mother if both had died during childbirth. In some instances foetal remains were recorded *in situ* within the womb area of female burials. In keeping with Christian traditions, very few of the burials were interred with personal effects, although some individuals had been buried with items such as wedding rings, jewellery and coins. One adult burial (HB 408) was recorded with copper alloy lettering on the coffin lid. The lettering read [M?] [172?] [(A)GE] [85] (Plate 28). HB 408 was the earliest datable burial at St. Martin's; the burial had cut an earlier charnel-pit (F563), filled with poorly-preserved human bone.

The burials at St. Martin's appear to exhibit discernible patterns of spatial distribution. The requirements of the archaeological brief stipulated that archaeological excavation should only be carried out to the depths required to accommodate the intended landscape design proposals. Two different dig depths of 0.8m and 1.5m below the modern ground surface applied to three separate areas of the site, referred to as Zones A, B and C (Fig. 49). As a consequence, there was an obvious recovery bias in areas with deeper dig depths. Zone B, for example, had the deeper dig depth of 1.5m and consequently a very high density of burials were recorded there in comparison with Zones A and C, with shallower dig depths.

Recovery bias apart, certain spatial groupings and patterns are apparent. Zone A shows a paucity of recorded burials, especially to the west where they are virtually non-existent. Consequently, there is very little inter-cutting of graves in Zone A. Some of the burials in Zone A did, however, relate spatially to burial chambers. Although this paucity of recorded burials can be partially explained by the shallow dig depth in Zone A, it does seem that this area was not a particularly favoured location for earth-cut graves. A known lack of earth-cut graves in this area may have provided the impetus for the construction of the numerous burial chambers there.

Zone B was excavated to a depth of 1.5m and understandably contained a large number of recorded burials. The general density of burials was high, with a great deal of inter-cutting. There are concentrations of inter-cutting burials around Vault Groups III, IV and V. This high density of burials petered out at the western and eastern extent of Zone B. No burials were recorded in a linear diagonal area running northeast-southwest across the site; this appears to be the result of a former graveyard path preventing burials.

Zone C exhibited a similar paucity of recorded burials. There did however appear to be some grouping of burials, especially around Vault Groups I and II. There was also some evidence for the damage to the church caused by a Second World War air-raid. Many fragments of lead and stained window glass were recovered from the uppermost archaeological layers directly opposite a large arched window opening, the glass of which had been blown out by the bomb blast.

The low density of recorded burials at the west, north and, to some degree, east extremities of the churchyard is possibly due to the effects of earth-moving activities during the working life of the churchyard, and also to later landscaping. It may be that the churchyard originally sloped downwards, away from the church. Prior to the 2001 excavation the churchyard had been landscaped. The ground appears to have been levelled, possibly with uncontaminated soil bought into the churchyard from elsewhere. This would have had the effect of masking the true topography of the churchyard, and may go some way to explain why only one of the thirty five recorded burial chambers was visible prior to excavation. Documentary evidence shows that the height and design of the boundary wall was altered several times during the use of the churchyard. As the level of the site was archaeologically reduced to the required dig depths, burials closer to the surface at the top of the slope in Zone B proliferated. Those in Zones A and C were masked by a greater depth of soil at the bottom of the slope. Alternatively the spatial distribution of burials may simply reflect the desire to be interred as close to the church itself as possible.

6.4 Church foundations and boundary wall

6.4.1 Introduction

A limited programme of building recording was carried out during the excavations at St Martin's. An opportunity to record the medieval and Victorian foundations of the church was provided by various aspects of the groundworks. Excavation of the churchyard also revealed the brick foundations of the Victorian sandstone churchyard boundary wall, elements of which were still visible at the time of the investigations. The construction date for the first church on the site of St Martin's is unknown, although the evidence suggests a 12th-century date (see Section 3.2, above). The Medieval remains recorded during excavation comprised the foundations of the western tower of the church. A major rebuilding programme took place in 1872; all of the building apart from the western tower was demolished, and a new church 50ft longer than the old one was built in the Gothic tradition.

6.4.2 Method

Upstanding structures were recorded using *pro-forma* record cards, supplemented by scale drawings at 1:10 and 1:20, colour slide, colour print, and monochrome photographs. These records were added to the site archive.

6.4.3 The Church Foundations (Fig. 15; Plate 29)

A sondage was excavated close to the church in order to establish the nature and extent of the church foundations. The excavation of the sondage was carried out under archaeological supervision but was intended to answer certain civil engineering questions for the developers.

The sondage was approximately 1.6m x 1.0m and revealed two elevations of foundations of medieval (E1) and Victorian (E2) dates. The medieval foundations had been built directly upon the natural sandstone (1002). The medieval foundations (3383) comprised both large and small roughly-hewn, squared and irregularly-shaped sandstone blocks, which ranged from orange to pink in colour. The blocks were laid in irregular courses and bonded with liberal amounts of light buff-coloured limed mortar. The mortar contained various small inclusions, including shell. Some larger inclusions such as tile or pottery fragments were present in the mortar; these were probably intended as 'packers' to assist in levelling the uneven sandstone blocks. Above the rough foundation was a course of evenly-sized, ashlar-cut sandstone blocks (3415). The ashlar blocks were neatly laid and had tight beds and joints of light buff-coloured limed mortar. This neater course of stonework appears to represent the above ground or 'seen' remnants of the medieval church.

The Victorian foundations (E2) dated to 1872 and comprised several elements of construction. The foundations were formed by a trench filled with concrete (3379). The concrete was a strong sand and cement mix with inclusions of stone, gravel and large pieces of brick. The concrete was recorded with a depth of 0.8m. Above the concrete were four courses of red engineering bricks, (3380) laid in header and stretcher courses and bonded with a hard, light grey cemented mortar. A thin course of slate (3381) had been placed above the engineering bricks. This served the dual

purpose of damp-course and 'packing' to achieve a level for the ashlar sandstone blocks. The ashlar sandstone blocks (3382) were placed above the slate. The sandstone blocks measured 0.8m x 0.4m and were laid in irregular courses. They were bonded with tight beds and joints of mortar. The sandstone blocks had been discoloured by the effects of pollution and the formation of lichen. Preparatory work carried out by the church architect revealed the sandstone to have been originally light brown in colour.

A total linear length of 28.85m of church foundations was recorded around the western tower.

6.4.4 The churchyard boundary wall (Plate 30)

The Victorian boundary wall extended for approximately 132m around the churchyard. Due to the recent construction work around the Bull Ring, portions of the sandstone block-work had been removed, and elements of the wall demolished and paved over. The boundary wall survived in an upstanding state around the east and northeast sides of the churchyard. The boundary wall along the west side of the churchyard was adjacent to the former course of Spiceal Street. In this area, none of the sandstone elements of the wall survive intact. Fragments of the sandstone blocks were visible, however, in the made-up level of St. Martin's Passageway, a modern pathway that runs along the former course of Spiceal Street.

Due to excavation depth restrictions and health and safety concerns, the boundary wall was not fully archaeologically excavated. Later groundworks for service installation truncated a portion of the wall; this facilitated a more comprehensive recording of the construction of the wall. The boundary wall was recorded in three stages and allocated three equivalent feature numbers, F336, F527 and F977. The foundations were formed by a trench filled with concrete. The concrete was a strong sand and cement mix, with inclusions of stone and gravel and large pieces of brick (3416). A solidly-constructed brick wall (3139, 3395 and 3525) was built on top of the concrete foundations. The solid construction was necessary to retain the rising ground-level of the churchyard caused by intensive burial and vault construction. The brick wall comprised a stepped foundation, pier and panel construction, incorporating predominately machine-cut red bricks bonded with a limed mortar. The bricks were laid in regular header and stretcher courses; finished height was achieved with a course of bricks laid on edge. The brick panels were approximately 2.2m to 2.3m in width, the intervening brick piers were 0.34m wide. Although not fully excavated, the brick walling survived to a depth of over 1m. This retaining brick wall was then faced and topped with cut and moulded sandstone blocks (3395). When viewed from without, this would have given the impression that the boundary wall had been totally constructed of sandstone. The majority of the sandstone blocks were rough-faced, which mimicked the architectural style of the church. Chamfered coping stones capped the top of the wall. Iron railings (3417) on top of the wall survived to the east of the site. The iron railings were of a decorative Gothic design, incorporating a *fleur-de-lys* motif, and were finished with black lead paint. The majority of the iron railings had been removed during the Second World War, as a contribution to the war effort.

There were four identified openings in the boundary wall. The first opening was an iron-railed gateway and stone steps that led up from the junction of Moat Lane and St.

Martin's Lane to the churchyard and vestry. This gateway had survived intact and was still in use during the excavation. Two apparent openings were located in the north section of the boundary wall. These were indicated by returns of the masonry, and their presence is backed up by cartographic evidence. The remains of a gateway and stone steps (F998) leading to the west door of the church were uncovered during the removal of overburden by machine. The gateway survived as truncated elements of the boundary wall returning towards the church, stone steps and two semi-circular iron runners for a double gate. A later wall (F978) probably dates to the 1960s Bull Ring development, and overlays the main boundary wall. This wall was constructed from modern red-brick laid in header and stretcher courses, and was bonded with a cemented mortar. The brickwork is faced and topped with rough-faced sandstone blocks and coping stones, in a style reminiscent of the Victorian boundary wall.

7.0 ASSESSMENT: QUANTIFICATION OF RECORDS AND FINDS

7.1 Site records

Table 70: Site Records

Context cards	1474
Feature cards	767
Grave Memorial sheets	33
Human Burial Record sheets	868
Human Burial Sample sheets	
Vault Record sheets	36
Building Recording sheets	3
Drawings: plans	64
Drawings: profiles	1
Drawings: detail	5
Drawings: elevations	17
Photographs: Colour Print	1980
Photographs: Black & White	1548
Photographs: Colour Slide	360

7.2 Quantification of finds

Table 71: Quantification of Finds

Finds Material	Quantity (by count)
Coffin Handles	1109
Coffin nails	3545
Coffin plate fragments	12276
Coffin studs	94
Ceramic tile	74
Ceramic brick	90
Mortar	1
Medieval pottery	29
Post-Medieval pottery	892
Clay pipe	295
Miscellaneous ceramic	2
Copper alloy coins	8
Miscellaneous iron	4
Copper alloy	47
Lead	3
Slag	476g
Window glass	146
Other glass (beads)	126
Flint	1
Worked bone	2
Animal bone	571g
Shell	12
Leather shoes	2
Textiles	136
Coffin wood	56 contexts

8.0 ASSESSMENT: SPECIALIST REPORTS

8.1 Human Bone by Megan Brickley

The human bone recovered from the excavations at St. Martin's falls into three broad categories: articulated individuals from earth-cut graves, articulated individuals from burial structures (brick-lined graves and vaults), and disarticulated human bone. A total of 857 human burial numbers were assigned to articulated individuals recovered from both earth-cut graves and burial structures. As is usual for assemblages of this size (Mays *et al.* in press), a sub-sample of approximately 450 individuals was examined to produce this report. Exact figures will vary slightly from the estimates provided here, but it is not anticipated that such variation will be significant.

8.1.1 Quantity and provenance

Preliminary site phasing indicates that few if any burials date from prior to the 18th century. Only a small number of burials date to the 18th century or earlier (Phases 2 and 3; approximately 7), with potentially slightly more coming from the late 18th/early nineteenth century (Phase 3/4; approximately 20). The largest group dates to the 19th century (Phase 4; 443). Work on the phasing of the burials is still not complete, and approximately 377 individuals have not yet been securely dated. However, the pattern of date distributions recorded is similar to that from other cemeteries associated with rapidly growing urban centres in Britain (for example, Redcross Way & Farringdon Street, London; St. Mary's Churchyard, Coventry). Urban cemeteries, such as St. Martin's, were so intensively used that they rapidly became full and had to be cleared. As a result of the intensity of burials taking place and of clearance, it is rare for individuals buried in earlier periods to survive as articulated skeletons (Brickley 1999).

The time and resources available are insufficient to allow full analysis of all 857 individuals recovered during the excavation, and the order and depth of analysis undertaken will need to be prioritised. As there were such a large number of individuals that were not assigned to a phase during the preliminary analysis of the data, part of the assessment focussed on estimating the number of individuals in this category that would warrant analysis.

Approximately 34% of the individuals not currently assigned to a phase were both largely complete (ca. 100%) and well preserved (stage 0-1). These individuals almost certainly date to the 19th century and warrant study; further work on phasing will hopefully clarify the date of burial for many of these individuals. The assessment demonstrated that the level of preservation, and more importantly completeness (< 25% present), of approximately 27% of the individuals who were not assigned to phase was such that these individuals could be excluded from analysis. Little if any meaningful data can be derived from poorly-preserved and incomplete individuals, and exclusion of these individuals would not be to the detriment of the report.

The position of the remaining 39% of individuals who have not yet been assigned to a phase is more ambiguous. Many of these individuals have well-preserved bone surfaces and are at least 50% complete: it would be possible to determine important biological information, such as age and sex, for a significant number of individuals in

this group. It is anticipated that as work progresses the position of many of these individuals will become clearer and approximately half will be analysed.

The high proportion of less complete individuals in the un-phased category is not typical of the site as a whole. Indeed the partial nature of many of these individuals has probably contributed to difficulties in assigning clear dates to these burials.

8.1.2 General condition of the remains

There are several factors that should be considered when assessing the condition of human bone material. Completeness, degree of fragmentation and surface preservation all need to be considered when making an assessment of the amount and type of information that can be obtained.

Completeness

The completeness of each individual was assessed and individuals were assigned to one of the four broad categories below:

Table 72: Estimate of completeness of articulated individuals excavated

	Approximate completeness			
	ca. 100%	ca. 75%	ca. 50%	<25%
%	41%	16%	20%	23%

Table 72 demonstrates that the majority of individuals, especially those from dateable contexts, were largely complete. Completeness is important, as in order to suggest a differential diagnosis for many pathological conditions that are manifest in the skeleton, the pattern of changes across the skeleton need to be assessed.

Preservation

The level of preservation of the surface of bones excavated was rapidly assessed using the weathering stages published by Behrensmeyer (1978). For assessment purposes the general level of preservation across all bones present was considered, rather than scoring individual skeletal elements. Although general, the data gathered in this way provide a good indication of the overall preservation of the bone.

Table 73: Percentage of individuals in each category of surface preservation

Surface Preservation			
Good (stage 0-1)	OK (stage 2-3)	Poor (stage 4-5)	variable
72%	18%	5%	5%

(The stages referred to are those defined by Behrensmeyer (1978))

As can be seen in the results presented above, the majority of skeletons had very good levels of preservation. The individuals recorded as having variable levels of preservation were normally well preserved (stage 0-1) but one area of the skeleton exhibited much poorer levels of preservation.

Fragmentation

No formal system of recording the degree of fragmentation was employed during the assessment of the skeletal material. However, during assessment a note was made if a number of the bones of a skeleton was fragmented to an extent that would seriously limit the amount of metric data that could be obtained. Fragmentation was only noted in approximately 5% of individuals assessed. The results of this assessment indicate that very little metric data will be lost.

8.1.3 Preservation summary

Overall, all aspects of bone preservation recorded during the assessment were found to be good. The levels of completeness and bone surface preservation present in material from St. Martin's means that this material has a high potential for contributing to knowledge on pathological conditions affecting the skeleton at this time. Completeness of individuals and limited amounts of fragmentation will also ensure that good levels of metric and non-metric information can be recorded.

8.1.4 Statement of Potential

The skeletal material recovered from the excavations at St. Martin's has a number of features that make it of very great potential.

- The very good levels of preservation in bone should ensure that the maximum potential information is obtained from the human skeletal remains.
- Age range and distribution
Initial assessment has shown that individuals of a variety of ages are present on the site. A large number of well preserved sub-adult individuals are present.
- The range of burial types
The site contains evidence for a wide range of different burial types: there are examples of earth-cut graves, brick-lined graves and burial in vaults, together with a range of coffin types as well as funerary clothing, plant remains and some personal possessions.

St. Martin's is the first significant site of this date to be properly excavated from the Midlands region. Although a large number of individuals were removed from the site of St. Mary's Churchyard, Coventry, only 100 individuals were analysed.

There are a number of themes that analysis of human skeletal material from St. Martin's has the potential to contribute to significantly.

- Funerary practice and its development during the period of study.
- The effect of urbanisation and industrialisation on human health.
- Patterns of migration to early urban centres.

Useful comparisons can be made with data from contemporary sites of a similar character, both in the Midlands region and further afield. Data from St. Mary's

Churchyard, Coventry will be consulted, as this assemblage is a close group of comparable date. However, this data cannot be given significant weight as the individuals analysed were not randomly picked, but selected because they had skeletal features that made them of particular interest. If available, data from the recently excavated portion of St. Peter's churchyard, Wolverhampton will provide a valuable comparison. Initial assessment of the individuals from Wolverhampton indicates that there may be different levels/patterns of trauma and pathology between the sites. A small number of contemporary individuals (17 from earth cut graves and 8 from a family vault) were excavated and recorded from St. Philip's cathedral, Birmingham. The sample is very small but it will be of interest to see if any apparent trends observed in the St. Philip's material are reflected in the results obtained from analysis of St. Martin's.

Further afield, important sites of this date with which comparisons can be made are mainly in London and include Christ Church Spitalfields, St. Bride's crypt and the Lower Churchyard of St. Bride's (Farringdon Street), Redcross Way and Number One Poultry.

8.1.5 Recommendations

Recording

The time and resources available mean that not all the material excavated can be recorded, and information obtained from individuals selected for study will not be exhaustive. A site report normally serves to provide basic information on a skeletal assemblage and to alert other researchers to the existence of a collection. It is normally the case that significant research is only undertaken on a skeletal assemblage after the site report has been produced. However, in this case, where the skeletons are to be re-buried, very little work will be done apart from that undertaken to produce the basic skeletal report. It is therefore vital that recording is carried out as thoroughly as possible, and that considerable care is taken over putting together the site archive, as this is all that will be available for future research.

The limitations on time and resources demand that a prioritised recording strategy is adopted. The material can be ordered from highest priority to lowest priority, as follows:

1. Individuals from vaults. Many of these individuals are known or can be linked to family groups. In terms of potential information on techniques of age and sex determination, as well as linking skeletal indicators to 'lifeways' of individuals (two key areas of research in physical anthropology), these individuals have the highest potential.
2. Individuals ca. 100 % complete from securely-dated contexts.
3. Individuals > 25% complete from securely-dated contexts.
4. Individuals ca. 100% complete.
5. Individuals >25 % complete.

6. Individuals < 25% complete from securely dated contexts.
7. Individuals < 25% complete.

It is very unlikely that time or resources will permit analysis of any individuals in category 6 or 7 (it is possible that not all category 5 individuals will be analysed). However, very little information will be lost through exclusion of these categories and the overall aims of the project will not be compromised.

Data selected for recording includes:

- Record of all bones present and completeness.
- Age determination.
- Sex determination (adults only).
- Metric data, to allow calculation of information such as height estimation, cranial index, sexual dimorphism, 'shape of long bones'.
- Presence of new bone growth and entheses (workloads/types and trauma).
- Non-metric traits (possible relatedness of individuals).
- Detailed vertebral pathology (including features such as Schmorl's Nodes indicating heavy work being undertaken during adolescence).
- Full recording of any skeletal pathology in the rest of the skeleton.
- Dental assessment (including levels of dental health).

Basic data of the type listed above are essential if any meaningful information is to be derived from analyses of the other classes of finds from the site. For example, are high-status coffin types linked to good health and low levels of stress indicators?

There should be full integration of data derived from skeletal analyses with all other classes of information (historical, artifactual and chemical analyses). In particular, data derived from the stable isotope data can be linked to dental and skeletal indicators of health and nutritional status. Interpretation of both isotopic data and that derived from skeletal indicators of health and nutrition is not simple. The analysis of both types of data in selected individuals will assist interpretation of health and diet in all individuals from the site.

Disarticulated bone

Work to date on the disarticulated material has demonstrated a number of interesting pathological conditions, such as severe rachitic changes in juvenile bones, healed fractures and evidence of infection. One skull examined displayed a healed circular cut cranial trephination.

All bone will be rapidly scanned and assessed for the presence of features of note, for example unusual pathological conditions or evidence of individuals from different ethnic backgrounds. Detailed recording of unstratified disarticulated material would add little to knowledge about the site, and resources are better focussed on the articulated bone material.

A small amount of the disarticulated bone was recovered from a discrete charnal pit. The bone from this feature should be recorded in slightly more detail to enable basic

information such as minimum number of individuals, age and sex distribution, stature, build and pathological conditions of these individuals to be assessed.

Analysis and radiographs of pathological conditions

A number of pathological conditions were noted during the assessment of the human bone that will require radiological analysis in order to make a diagnosis. The Department of Radiology at City University, London have agreed to undertake the radiological work required.

8.2 Isotope analysis of hair samples by Michael Richards

8.2.1 Summary of stable isotope analysis for palaeodietary reconstruction

Palaeodietary reconstruction using human tissue (e.g. bone collagen and hair) stable isotope analysis is a well established technique that has been widely applied in archaeology since the late 1970s. In contrast to traditional, indirect, methods of dietary reconstruction, such as analysis of faunal and plant remains, stable isotope analysis is a direct measure of past human diet. This is because as “you are what you eat”, our body tissues have been formed using components from the food we have consumed over our lifetimes. These foods each have specific ‘stable isotope ratios’. If we measure the ‘stable isotope ratio’ of a human bone, we can determine what foods were used to create the bone, and therefore, what foods the humans consumed over their lifetime.

The resolution of the technique is such that we can only determine, generally, what protein the human consumed over the last ten or so years of their life for bone collagen protein, while hair records the last few months of diet. We can tell whether an individual derived the protein in their diet from either plants or animals, or a combination of the two. It is also possible to determine whether that protein came from marine or terrestrial sources. In areas of the world where C_4 pathway plants (e.g. maize and millet) are found, isotope analysis can tell us about the importance of these plants in the diet.

The first step in stable isotope analysis is to clean the samples and, in the case of bone, to extract the protein component of the bone, called collagen, as this is the best preserved bone component (it is the same fraction extracted for radiocarbon dating). The next step is to measure, in a mass spectrometer, the ratios of the isotopes of nitrogen, ^{15}N to ^{14}N , called the $\delta^{15}\text{N}$ value, and the isotopes of carbon, ^{13}C to ^{12}C , the $\delta^{13}\text{C}$ value, of the extracted collagen. The nitrogen and carbon isotope ratios are measured relative to a standard, the AIR standard for nitrogen, and Pee Dee Belemnite for carbon. The isotope ratios are expressed as “delta” values, measured as ‘per mil’ (‰).

For temperate Europe, where there are no C_4 plants that were consumed by people, at least in the prehistoric period, human bone collagen and hair keratin $\delta^{13}\text{C}$ values of $-20\text{‰} \pm 1\text{‰}$ indicate that the protein that the individual has consumed has come from terrestrial C_3 -pathway plants, or from the flesh (or milk) of animals that also subsisted

on only C₃ plants. A human bone collagen or hair keratin $\delta^{13}\text{C}$ value of $-12\text{‰} \pm 1\text{‰}$ indicates that the protein came from marine sources, either plants or animals.

The collagen $\delta^{15}\text{N}$ values can indicate the trophic level of an organism in a food web, as there is an increase in the $\delta^{15}\text{N}$ of about 3 ‰ each step up the food chain. Therefore, if soil plant nitrogen isotope values are about 3 ‰, herbivores that consume those plants have $\delta^{15}\text{N}$ values of 6 ‰, and carnivores who consume those herbivores will have $\delta^{15}\text{N}$ values of about 9-10 ‰. Humans, as omnivores, can have values that are between these two extremes, and therefore the $\delta^{15}\text{N}$ value can be used to tell us whether the people of interest had diets more like herbivores (e.g. vegetarians) or carnivores.

These hypothetical values are close to the published values for western European fauna. However, these values can vary throughout the world, and it is important to establish the local faunal $\delta^{15}\text{N}$ values before drawing conclusions about the human $\delta^{15}\text{N}$ values.

Hair isotope values are similar to bone collagen values, and are expected to be offset in $\delta^{13}\text{C}$ by about 1 ‰, but identical in $\delta^{15}\text{N}$ values. However this expected difference in $\delta^{13}\text{C}$ has not been observed archaeologically (O'Connell and Hedges 1999a). Therefore, in order to directly compare the results from the hair samples from St. Martin's to the wide body of published bone collagen data, it should be noted that the $\delta^{13}\text{C}$ values may need to be altered slightly (e.g. 1 ‰), and perhaps not as much as that recommended by O'Connell and Hedges (1999a).

8.2.2 Sample preparation

Hair samples were cleaned prior to analysis in multiple washes of deionized water, to remove visible contaminants. Following this the hair samples were soaked for 3-4 hours in 2:1 chloroform:methanol to remove lipids. The samples were then rinsed in deionized water and then dried at approximately 50 °C. The isotope measurement of the samples was undertaken at Isoanalytical, Cheshire. $\delta^{13}\text{C}$ measurements were made relative to the vPDB standard and $\delta^{15}\text{N}$ measurements were made relative to the AIR standard.

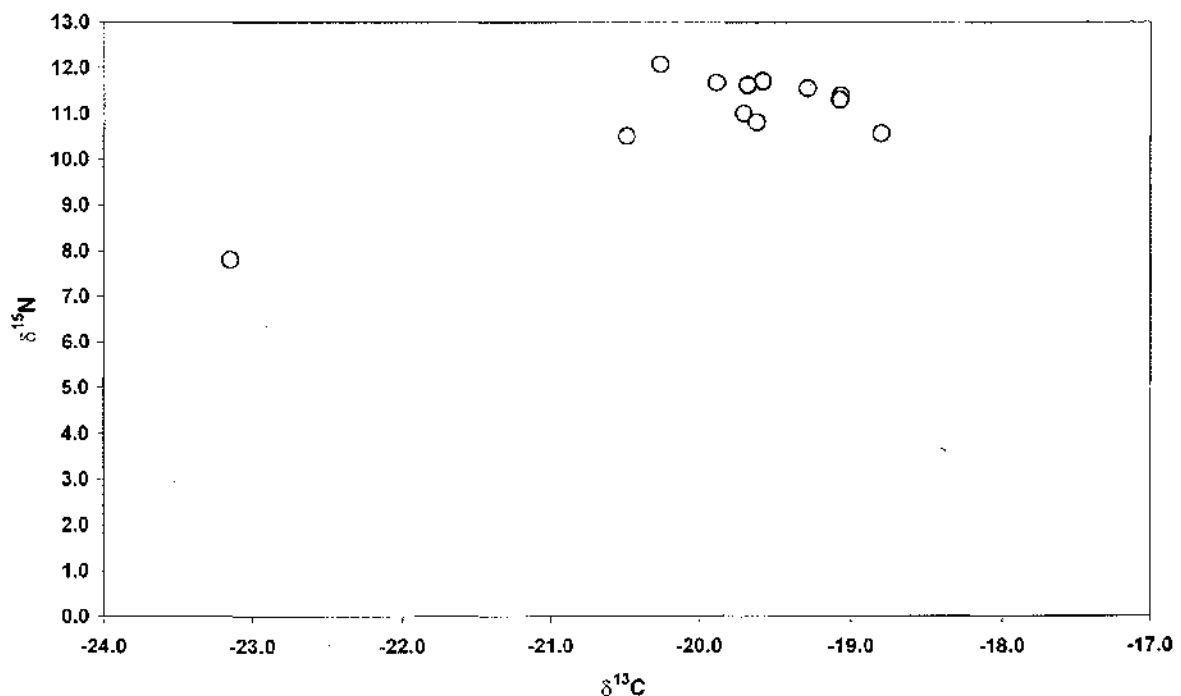
8.2.3 Results

The data are presented below in Table 74, and a plot. C:N ratios and %C and %N in the measured samples are good general indicators of the preservation of the samples. The C:N ratios and %C and %N values are within acceptable ranges, compared the values to the expected values for modern hair, with a calculated expected C:N ratio of 3.4 (O'Connell and Hedges 1999b). It should be noted that as hair isotope measurements are rarely reported, agreed ranges for acceptable hair C:N values have not yet been determined.

Table 74: Stable isotope values and various indicators of preservation of hair samples

HB Number	Context	Isotope number	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	%C	%N	C:N
297	1827	HB 297	-23.1	7.8	51.0	20.2	3.0
304	1795	HB 304	-19.6	11.7	66.8	23.3	3.3
321	1922	HB 321	-19.7	11.6	44.9	16.6	3.2
329	1946	HB 329	-19.7	11.0	51.1	18.1	3.3
333	1955	HB 333	-19.9	11.7	49.1	17.1	3.3
334	1956	HB 334	-20.3	12.1	48.3	15.9	3.5
336	1958	IIB 336	-18.8	10.6	52.9	17.2	3.6
573	2580	HB 573	-19.6	10.8	54.1	17.5	3.6
574	2581	HB 574	-19.1	11.4	44.7	14.5	3.6
597	2636	HB 597	-19.3	11.6	54.3	18.8	3.4
598	2635	HB 598	-19.1	11.3	53.5	17.9	3.5
607	2654	HB 607	-20.5	10.5	52.1	18.2	3.3

Plot of $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ values of hair taken from individuals interred at St. Martins.



8.2.4 Preliminary interpretation of the results

The majority of the isotope data cluster around a value of approximately -19.5 ‰ for $\delta^{13}\text{C}$ and 11.5 ‰ for $\delta^{15}\text{N}$. These samples are very similar to bone collagen isotope values of humans from later medieval and post-medieval urban contexts in the UK (Muldnr, unpublished Master's dissertation, University of Bradford, Richards, unpublished data). The relatively high $\delta^{15}\text{N}$ values could either indicate the consumption of freshwater fish in some quantity, or the consumption of pigs, which in turn have high isotopic values. Studies are currently underway to explain the high $\delta^{15}\text{N}$ values often observed in these later medieval and post-medieval individuals, which are not observed in any other time period in Britain.

The $\delta^{13}\text{C}$ values are consistent with a terrestrial-based diet, so it is unlikely that marine foods have contributed to the diet. However, should we need to add 1 ‰ to the hair values to compare them to collagen then the values may indicate a very small contribution of marine resources. One individual (HB 297) has significantly different isotope values, with a much more negative $\delta^{13}\text{C}$ value and much lower $\delta^{15}\text{N}$ value. The lower $\delta^{15}\text{N}$ value indicates a diet of a lower trophic level, perhaps with a large contribution from plant foods. This is interesting as the hair isotope values indicate diet over the last few months of life, so it is possible that this person changed their diet at the end of their life, or that this person lived elsewhere with a significantly different diet than the others buried at St. Martins, and died shortly after arriving in Birmingham. This hypothesis can be tested by comparing the hair values from this individual to their bone collagen isotope values, as bone collagen records the diet over the last few years of life.

8.2.5 Recommendations

The hair isotope values indicate that there is a general similarity in diet between the individuals buried at St. Martin's, with one exception (HB 297). The isotope values have unusually high $\delta^{15}\text{N}$ values, which have only been observed at later medieval and post-medieval sites in the UK. The high $\delta^{15}\text{N}$ values indicate either a strong contribution of freshwater foods to the diet, or the consumption of pigs that have been raised in an urban environment. Further work is currently underway exploring these unusual isotope values in this time period, and when that work is complete we will be better able to interpret the St. Martin's data. Also important is to explore the reasons for the unusual isotope values reported for HB 297.

It is recommended that bone collagen isotope measurements are now made, to compare with the hair isotope values. The hair values were measured initially as they are much easier, and faster, to prepare and are an indicator of the preservation of the material. Also, they could be taken before the skeletal analysis was complete, as sampling of bone had to wait until the osteological report was finished. The hair isotopes have been valuable, and indicate the last few months of diets of these individuals, and the comparison to the bone isotope values will be an important next step. The bone records the last few years of diet, so the comparison between the two will be valuable, especially in the case of the outlying sample, HB 297, who may have changed their diet in the last few months of life, possibly due to an illness, which will not be recorded in the bone collagen values.

Additional measurements on other individuals will also be valuable, to provide a greater picture of the diets of the individuals buried at St. Martins. So far there is a great similarity in diets, which we might not expect for an urban context. Isotope measurements have rarely been undertaken on individuals from this time period and more measurements will make an important contribution to our understanding of diet and nutrition at St. Martin's.

8.3 Documentary research on identified burials by Jo Adams

8.3.1 Introduction

Of the 108 burials excavated from the vaults, 28 had some identifying information that could be used for further documentary research on the individual. No burials in the earth-cut graves could be identified. There were a number of gravestones within the churchyard, the information on which was recorded, but since they had been moved, possibly on several occasions, they could not generally be associated with specific burials. The exception to this was the Warden stone, which will be discussed in more detail later. However, the information recorded on the gravestones was useful in some cases to provide more detail about individuals identified by other means in the vaults.

The named burial sample is biased. The sample was compiled primarily using evidence from coffin plates which, in itself, limits the scope of the research, since only plates from a certain time period have survived. Also, all except two of the surviving coffin plates came from burials in the vaults, and the two recovered from the open churchyard could not be associated with specific burials. The resultant information is therefore restricted by these facts, and will only provide information about those people who were buried in vaults during a restricted time period. Further research on these people will try to ascertain whether the sample is representative of a certain type of person who, for whatever reason, wanted to be buried in a vault rather than in the open churchyard.

8.3.2 Aims

The central aim of the documentary research is to discover as much as possible about the named sample from St. Martin's churchyard. Many different aspects of their lives can be examined, including occupation, family relationships, social status and health. This can then be studied alongside the skeletal and archaeological analysis of the burials (funerary attire, coffin type, funerary ritual, vault, architecture, etc), to enable parallels to be made and conclusions drawn.

At the assessment stage three main aims were identified:

1. To directly identify as many individuals as possible using the sources available. In the majority of cases this source was the coffin plate that was, sometimes, badly damaged or corroded, making it very difficult to decipher.
2. In order to widen the research sample, to associate as many other burials as possible to the named individuals, using location, gravestone or documentary research.
3. To use the information thus gained as a starting point to compile histories, first of the individuals, then of their associated family groups, in order to build up a picture of the lives some of the people who lived and died within the Parish of St. Martin's.

For the purposes of assessment, research to achieve the third of these aims was limited to burials from a single vault, Vault 5, with the intention that this would be sufficient to evaluate the potential of the research and to provide an estimate of the further work needed to carry through the research to all the identified burials. Particularly detailed attention was paid to just one of the burials in Vault 5, Ann Maria Browett (HB 297), as a case study with the aim of exploring fully the potential of the documentary research.

8.3.3 Method

The documentary research on the named individuals in the churchyard began with the primary source of the information, which was in most cases the coffin plate. The only exception to this was the information obtained from a mourning ring associated with HB 372. The condition of the coffin plates varied greatly. The inscriptions on some were completely illegible, whilst others crumbled when touched and were impossible to salvage. In some cases the wooden coffin had completely decayed and the plate was lying on the individual's ribcage. The information on the majority of the plates consists of the individual's name, age and date of death, although a few include date of birth, place of residence and parents' names. Of the 30 coffin plates recovered, 25 had complete names and dates of death.

The name and date of death of an individual provided the starting point from which the research was developed using the relevant resources. The amount of information that can be obtained in each case depends upon several different factors:

- In the first place, the date of death is important since Civil Registration, (St Catherine's Index -SCI) when all births, deaths and marriages were registered centrally, only began in 1837, so tracing families before that date is more difficult.
- The church burial registers can be consulted to confirm the entry and they may give further information about the individual's address or family. These records are often difficult to read, and the information may not be complete. If an address is available, this can be used for research in the census records that are available from 1841. The value of these varies since the early ones are not always complete. The 1851 and 1881 census returns for Birmingham are particularly useful in that they include a surname index, whilst the others can only be used if the correct address is known.
- Sometimes further information can be obtained from the International Genealogical Index (IGI). This is a county by county index of parish registers compiled by the Church of Jesus Christ of Latter Day Saints. It is particularly useful for the pre -1837 period, but cannot always be considered to be completely accurate.
- Trade directories and post office listings, which catalogue people either alphabetically or by their profession, can provide information about an individual's occupation and business, or residential address.

- Obituaries published in the Aris Gazette, the Birmingham weekly newspaper, can provide useful information, even though the entry itself may just consist of a few lines. Occasionally, there is a longer description of the individual in the paper.
- In some cases there is a will lodged, which confirms family relationships and may give some indication of the material wealth of the individual. They can also supply valuable factual information and provide interesting pieces of social history. If the will is lodged prior to 1858, it is held at Lichfield Diocesan Office.

There may be other items lodged in the Archives, on Floor 7 at Birmingham Central Library, or in the Local History section on Floor 6. These consist of other pieces of documentary evidence not covered by the previous sources, and may include details of property or business deals, photographs, invoices, receipts or any other type of personal paper.

Other sources that can be consulted include:

Electoral Records	Land Registry
Rate Books	National Burial Index
Service Records	Existing Birmingham histories
Coroners Records	Local History Society Journals
Monumental Inscriptions	Probate Records
Poor House Registers	Maps

Sometimes, other avenues of research present themselves following conversations with librarians, archivists and other interested parties. These aspects of research are difficult to quantify, but often yield information not obvious from the main sources.

8.3.4 Results: research on burials in Vault 5

Vault 5 was a brick-built rectangular vault located in the main part of the churchyard. The vault had been divided both vertically and horizontally to provide four separate floors. A total of 14 burials was recorded. Sometimes up to four coffins were placed side-by-side. This was the only vault visible above the ground surface prior to the reduction of levels associated with the current development. A gravestone (ST16) was also noted in association with this structure.

The list of known burials within the vault consisted of five individuals identified from coffin plates:

Table 75: Vault 5 Named Coffin Plate details

Burial	Name	Age	Date of birth	Date of death
HB 297	Ann Maria Browett	81	-	8 th April 1894
HB 336	A(lfred) Browett		-	184?
HB 573	Ann Maria Warden	52	-	17 th February 184?
HB 587	George Warden	33	-	26 th November 1863
HB 598	Sarah Emma Warden	47	-	14 th December 1866

Three names were noted from the associated gravestone (ST16):

Joseph Warden
Sophie Warden
Edwin Warden

The fact that there appeared to be two distinct family groups in the vault initially seemed unusual, since investigation of the other vaults had suggested that a vault would be purchased for one family's use only. However, the documentary research revealed that the Wardens and the Browetts were related by marriage, and various branches of the two families remained close on a business and personal level throughout most of the 19th century. This explained why some of them were buried together in the same vault.

It would appear that in the late 18th century members of both the Warden and Browett families moved from small villages in the Coventry area to Birmingham. This illustrates the migration that occurred at that time as people moved from rural communities into the newly emerging industrial centres. Both families had their origins in small shops and, as they became more prosperous, they and their descendants diversified into related small industries in the town. They could both be considered to be part of the newly emerging lower middle classes that aspired to better themselves as their businesses grew. This was clearly illustrated by their place of residence, which changed from 'living over the shop' to the more fashionable suburbs of Edgbaston, and even the acquisition of property in the developing spa town of Leamington.

The Warden Family (Fig. 16)

Joseph Warden, the central figure in the family tree (Fig. 16), lived in Bulkington, to the northeast of Coventry. He was born in 1787 to Joseph Warden and Ann Whetstone, who had married in 1772. Joseph moved to Birmingham and subsequently married **Ann Maria** Marston (HB 573) on April 28th 1812 and, on the birth of their first daughter, Ann Maria, in 1813, was described as an Ironmonger. In the early 19th century an ironmongers shop was a vital part of the community, supplying a huge variety of goods from screws and latches to lighting and heating fixtures, cooking appliances, cycles and sports goods. They often had workshops on the same premises as the shop, where some manufacturing and repair of goods would take place. Consequently, tinware, copper and japanned ware, along with many small household items like saucupans and kettles, may have been produced. In some shops the manufacturing aspect of the business became more important. It would seem that Joseph progressed from being a shopkeeper because in 1825 he is described in the trade directories as an 'ironmaster' trading as Warden & Marston, at 14 Smallbrook Street. This would seem to be a partnership between Joseph and his wife's family, which was initially described as an 'iron merchants', but changed shortly afterwards to 'iron and steel merchants'. In 1829 he is listed as the sole trader, and from 1835 the description included tin plating and the business premises had moved to 5 & 6 Edgbaston Street. This illustrates diversification and expansion as Joseph adapts to the changing market that occurred as industrialisation in the town increased. In 1842 the business name changed to 'Joseph Warden & Son' to include William and, in 1846, it

was 'Joseph Warden & Sons' as Thomas joined the family firm (see Plate 32). The family firm was further strengthened in 1854 as sons Joseph and Thomas formed a partnership with Benjamin Williams. This lasted for 21 years at the Oak Farm Ironworks, illustrating something of the enduring quality of a firm that started as an ironmongers shop at the beginning of the century.

While Joseph's business was prospering, he and his wife brought up eleven children. To accommodate this growing family and reflect his increasing wealth, Joseph and his wife moved to Wellington Road, Edgbaston (Plate 33). A family of eleven children would be considered unusual nowadays but in the early 19th century infant mortality was high and methods of contraception were still scarce and often unreliable. Condoms were available but were used mainly by prostitutes as prevention against venereal disease, so the more 'respectable' members of society were reluctant to be associated with them (Bartley 1996, 20-21). The fact that all eleven children survived to be adults was remarkable for this period.

After Ann Maria died in 1852, aged 52, Joseph married **Sophie** (Grave memorial ST 16) who lived with him at Wellington Road until her death, aged 68, in 1860.

Amongst the male children, William and Thomas, mentioned above, joined the family firm. However, by 1851 William must have died since his wife Mary is described as '*head of the household and iron merchant*', suggesting that she had taken over her husband's role (1851 Census). This could be considered an unusual role for a 19th century woman and merits some further research.

The younger **Joseph Warden**'s career mirrored his father's, in that he too began life as an ironmonger and then diversified. In 1839, his business was based at 3 St. Martin's Lane, but by 1842 it had developed into a spring, axle and cart arm manufactory. By 1845 he was described as an agricultural implement maker at 25 Jamaica Row, Edgbaston Street. However, the advertisement in the Trade Directory of that year lists him at Old Church Works, Jamaica Row, making carriage and gig springs. This clearly illustrates how the small manufacturing ironmonger could expand from a small shop into larger premises as their business developed. They could then diversify to accommodate changing demand. In 1864 the business had moved to 1 High Street, Dretend and by 1871 he was listed as having two premises on Cheapside and Balsall Street. He married **Sarah Emma** Fortesene (HB 598) in 1844 at St. Philip's Cathedral, and lived first in Hob Lane before moving to Green Lane, Small Heath. They then moved to 80 Francis Road, Edgbaston.

Edwin Warden (Grave memorial ST 16) was a builder with premises in Benacre Street. He lived initially on the Bristol Road before moving to 3 Mary Street. Edwin was included in his father's will but a later codicil changed his bequest.

George Warden (HB 587), Joseph and Ann Maria's last son, was unusual in that when he died, aged 33, in 1863 he was living at Worcester College in Oxford. This may suggest that he had some sort of academic position in contrast to the ironmongery profession associated with the rest of the family.

The Browett Family

The connection between the Warden and Browett families began when two of Joseph and Ann Maria's daughters married into the Browett family.

Ann Maria, the eldest daughter, married Alfred Browett in 1836. He was the son of William Browett, who ran a Chandlers shop in Smallbrook Street, close to where Joseph Warden's ironmongers shop was situated.

Ann Maria Browett was born in February 1813 to Joseph and Ann Maria Warden, an ironmonger and his wife, who lived on Bristol Street. She was named after her mother, suggesting that she was their first daughter and, 33 years later, was to follow the same tradition and give her own first daughter the same name.

On 26th July 1836 she married Alfred Browett, the son of William Browett, who was a draper and had moved from Stoke, a small village in the Coventry area. Alfred worked with his father in a shop at 47 Smallbrook Street. This was described in a Trade Directory of 1833 as a '*grocer, tea dealer and chandler*'. Over the ensuing years this description varies. In 1842 it is listed as '*chymist and druggist*', in Jamaica Row, but in 1849 the business returned to Smallbrook Street, with the added description of '*cheesemonger and maltster*'. This shop, like the ironmongers that Ann Maria grew up in, was situated close to St. Martin's in an area of small crowded streets, full of a variety of shops. These shops included butchers, nail makers, umbrella makers and jewellers, all very close to the markets from where supplies would have been readily available. Many shops also had the facility for small-scale manufacturing. Joseph Warden may have had a small forge and foundry in his ironmongers; Alfred may have had facilities for processing cheese. Alfred was described primarily as a '*tallow chandler*' and would probably also have made candles and soap, both vital commodities in the Victorian household. He would, therefore, have been subject to the same taxes and excise restrictions as a soap boiler, who had to inform the excise officers twenty four hours before making soap (Walters 2000, 211 & 225).

It is impossible to know whether Ann Maria helped Alfred in the shop. However, women were more actively engaged in the retail trade than any other, so it may have been a possibility at the beginning of their married life (Davidoff & Hall 1992, 304).

In 1849, William Browett's name disappears from the shop's title. This suggests that either he has died or has retired from the business, leaving his son in charge. The family may have lived over the shop during the first part of their married life, as the lock-up shop was still unusual in 1850 (Alexander 1970, 11). However, in the 1851 Census they are listed as living on Bristol Road, illustrating the growing trend to move away from the place of work into nearby suburbs.

Also in the 1851 Census, they are listed as having five children. Alfred, aged 13, and Thomas, aged 9, are described as '*scholars*', while George, aged 4, is listed as a '*scholar at home*'. In contrast young Ann Maria, aged 5, has no such description, indicating that she does not seem to be receiving any tuition at all – a clear illustration of the gendered attitude to education at the time. They also employ a nursemaid and

cook, who were born in Westbury on Severn and Bromsgrove respectively. This again illustrates the migration which was occurring at the time, as people moved from rural areas into the towns to find employment. The family's ability to employ two servants also gives some indication of their level of income. Further proof of this financial stability is indicated in the 1861 Trade Directory, where Alfred is still described as a '*tallow chandler*' at 47 Smallbrook Street, but now listed as living at 9 Yew Tree Road in the nearby suburb of Edgbaston. The two eldest boys are now at Commercial College, and the 15 year-old daughter (Ann Maria) and the 14 year-old son (George) are described as '*scholars*'. There are three other children, Emily, aged 11, Evalina, aged 9, and Frederick, aged 7. The family still had help in the house with two domestic servants aged 16 and 19. By this time the couple had seven surviving children, Joseph having died in 1839, aged 3 months. The move to Yew Tree Road illustrates the aspiration of many people at that time to move away from their place of business and live in a house with a garden, not far away from but '*insulated from all view of the town and its annoyances*' (Davidoff & Hall 1992, 17).

The house they lived in was not one of the biggest in Edgbaston, but had a garden back and front and was close to neighbouring streets where the more affluent Birmingham families lived, in rather larger properties. Although other areas developed, Edgbaston was the most popular because it overlooked the countryside and was only 10 minutes carriage drive or a brisk walk away from the town centre (Davidoff & Hall 1992, 368). It was described by H H Horton in a poem about Birmingham as:

*'See Edgbaston, the bed of prosperous trade,
Where they recline who have their fortunes made;'* (ibid.)

In 1867, Ann Maria's daughter, her namesake, died and, on 16th March 1869, her husband Alfred (HB 336) died at home after being ill for a month with Phthisis, a progressive wasting disease, which was possibly pulmonary consumption. He had probably worked long hours in the shop all his life. Opening times varied but often shops stayed open 12 to 16 hours per day, and longer on Fridays and Saturdays. Hours were extended in the summer and those shops catering for the working classes, as Alfred's would have done, would also have been open longer. The shop may have been small and badly ventilated, all of which might have contributed to the cause of his death (Alexander 1970, 191). This illustrates that despite a relatively high standard of living, the fear of fever, cholera and consumption was an ever-present threat in the growing industrial cities (Davidoff & Hall 1992, 22)

It would seem that none of Alfred's sons took over the shop since the eldest, also called Alfred, became a manufacturer in Dean Street, and George and Thomas became '*coal and brick manufacturers*' in the town. The family still lived in Yew Tree Road in 1870, and on 20th September of the same year Frederick died; using preliminary skeletal evidence it is possible that he is HB 335. At some time in the next ten years the family moved and Ann Maria settled in a house in Greenfield Crescent, Edgbaston, where she and her daughter, Evalina, are listed in the 1881 Census as lodgers, with an income from a house in Leamington.

By 1894, Ann Maria had moved again, to 185 Bristol Road. This is near to where she lived as a child and she died there on 8th April, aged 81. At the time of her death she

still had the leasehold of a property in Leamington, three of her sons were businessmen in the town, her daughters Emily and Evalina were married and two of her children had pre-deceased her. She was buried in a vault at St. Martin's along with other members of the Browett and Warden families that had been first united by her marriage to Alfred 58 years before, in 1836.

Ann Maria Browett in Victorian Birmingham

At the beginning of the 19th century Great Britain was experiencing tremendous change as increasing industrialisation altered the face of the country. People were moving away from a rural lifestyle, where their days were largely governed by seasonal variations in the weather and the related growing seasons. They moved to find work in the rapidly growing industrial centres. There, many worked long fixed hours in dark grimy workshops, and lived in rows of hurriedly constructed small back to back houses, where a different sense of community developed.

Birmingham was an example of such a city and, during the 19th century became famous for the diversity of its trades, whose products were exported throughout the world as transport links improved, earning Birmingham the description of 'The workshop of the world'. Its population grew rapidly, from 71,000 in 1801 to 760,000 one hundred years later (Mitchell & Deane 1962, 19).

The lives of women changed dramatically too as increasing industrialisation emphasised differences in society. The role of the women depended largely upon their status. Not many women conformed to the archetypal Victorian ideal of being 'gentle, submissive, passive, self sacrificing domestic creatures, an ideal largely inspired by Queen Victoria's example' (Knelman 1998, 9-14). This may have been the case amongst some of the wealthier families, but other women were an integral part of the family unit, not only as a mother, but also as a wage earner or as unpaid support in the family business.

While it is impossible to know what daily life was like for the Browetts it is interesting to note the contemporary advice that Ann Maria may have found in the famous 'Philosophy of Housekeeping', written by Mrs Beeton in 1865. She would have read that if:

'she considers that she is steward of her husband's property, and that upon her diligence, knowledge, and capability depends the entire happiness of her household, she will understand how important is her post, and how any negligence on her part must necessarily repeat itself in the conduct of her domestics' (Beeton 1865, 10).

In a wider context, the lives of women changed considerably during the 19th century as new opportunities were opened up. In 1813, when Ann Maria was born, women could still be put to death for abortion. The use of birth control was frowned upon and marriage was often the only viable alternative to destitution. The provision of a formal education system, as we know it today, did not exist and, where there was some provision, it depended on one's status in society. This was always heavily gendered, allowing the boys to learn mathematics and English, whereas the emphasis for girls was on obtaining domestic skills. At the beginning of the century, women were not

allowed to enter further education, yet by the end some colleges had been founded specifically for women and some universities changed their rules to allow entry.

Ann Maria would have lost her legal status when she married in 1836. She and her husband were considered as one person and she had to accede to her husband's decisions about how and where they lived. The husband owned their home and all possessions, and could dispose of anything if he wanted to, even if they no longer lived together. Wives could not sign contracts, sue, run a business or make a will without the husband's permission. Perhaps the only advantage of the system was that if the wife ran up any debts then the husband was liable! In the unlikely event of a divorce, the husband had custody of the children, although this situation was to improve somewhat in 1839 after the passing of the Infant Custody Act. This allowed mothers custody of children under 7, but only if the mother was of good character and the Lord Chancellor agreed (Bartley 1996, 9-45).

This situation improved again in 1870, after Ann Maria's husband had died, with the passing of the Married Women's Property Act, which considerably improved women's financial status.

At the beginning of the century women did not have the vote but by the end the women's Suffrage movement had begun campaigning to change this. In Birmingham, in 1868, a Woman's Suffrage Society existed, consisting almost entirely of middle class women, like Ann Maria (Barnsby 1989,473). However, there is no evidence that she was part of any Suffrage movement.

At first glance it would seem that Ann Maria Browett lived an unremarkable life. She was born in 1813, got married aged 23, had 8 children and lived, until her death in 1894, in Edgbaston, not having moved more than a few miles from where she was born. However, this lady, who lived for 81 years - an achievement in itself in Victorian times, - spanned almost a whole century and witnessed unprecedented changes, in Britain, in Birmingham, and indeed in the lives of contemporary women.

The Bright Browett Family

Mary, Joseph and Anne Maria Warden's third daughter, married Jacob Bright Browett, a draper who was probably the son of William and Ann, a draper and his wife from Stoke, a village to the east of Coventry. Although drapers sold a few articles of ready made clothing, their primary role at that time was to sell materials for people to make clothes at home. They often stocked a large range of materials, small items of haberdashery like pins, ribbons and threads, and some 'fancy goods'(Alexander 1970, 125-129).

Children of the Browett/Warden marriages

Preliminary research has provided some information about the children of Browett/Warden marriages, showing that many of them stayed in the locality and began businesses of their own. Alfred, the eldest son of Ann Maria and Alfred Browett, became a silversmith and manufacturer of electro-plated silver ware, with his works at 14 Dean Street (Fig. ??). His brothers, Thomas and George, as already mentioned, were '*coal & brick manufacturers*', working in the town but living at a different address, 84 Ryland Street, Edgbaston. These occupations, together with the

iron & steel connections of the Warden children, illustrate how closely both families were involved in some of the most important aspects of Birmingham industry in the 19th century.

The connection between the families continued up to 1883, when Joseph W Browett, a solicitor of Messrs Powell & Browett, signed the younger Joseph Warden's will. This is evidence that some members of the Browett family went into the legal profession, and suggests that the increased fortunes of the Browett family allowed later generations to follow a profession rather than a trade.

An 1879 plan of St. Martin's churchyard documents the gravestone (Grave Memorial ST16) associated with three members of the Warden family. On this plan, the gravestone was located to the south of the Church. However, during the current excavations it was recovered in association with the roof of Vault 5. This may have some connection with how and when burials were interred in this vault.

8.3.5 Results: preliminary research on the other identified burials

In this section, the results of preliminary research on the identified burials in the other vaults is described. Recommendations are also made on the value and viability of more in-depth research.

Vault 3

This was a rectangular brick-built vault, butting onto Vault 4, in the main part of the churchyard. It contained three burials, HB 185, HB 189 and HB 190, two of which were on a lower level. It appeared to be designed to be just over a single coffin size in width. There were two coffin plates naming two individuals:

Table 76: Vault 3 Named Coffin Plate details

Burial	Name	Age	Date of birth	Date of death
HB 189	John Sanson	65	-	3 rd March 1873
HB 190	Helen Mary Sanson	18mths	-	23 rd December 1862

John Sansom is listed in the Trade Directories of 1861 as a Retail Brewer in Sherbourne Road, Kings Norton. Eleonor Sansom is listed in the 1881 Census as living in the same road. This suggests that she is John's wife, who is listed in the parish records as having died on 14th January 1887. Therefore, she is likely to be HB 185.

Helen Mary Sansom, the other occupant of the vault, is unlikely to be their daughter since they would have been 54 and 50 when she died. It is probable that she was their grand-daughter.

The burial entry states that John was living in Leamington when he died. There is a will lodged in the archives listing his address as The Queens Moat Hotel, Brunswick Street, Leamington. Eleonor was listed as living in Balsall Heath when she died in 1887.

It is interesting that John Sanson was brought back to St. Martin's from Leamington to be buried. Apart from involving the family in considerable expense, it could

suggest strong links with the church or the town. This may be a significant cultural aspect that should be considered further.

Recommendations

In this case, further research is viable since the dates of death are in the second half of the 19th century, which makes it easier to obtain information. The death certificates would confirm John Sansom's occupation, cause of death and the person registering the death could be another family member. There is a possibility of further research in the census returns that may confirm addresses and provide details of the rest of the family.

Examination of the will lodged in the archives is essential, as this may well provide useful detail and hopefully reveal more family relationships. This may confirm the link to the brewery trade in the town.

Vault 9

Located on the boundary wall, this vault was as wide as Vault 5 and as deep. It was not, however, divided into separate floors. The barrelled roof had been designed to allow slabs to be removed, so further burials could take place. Despite its depth (over 3m) only 11 coffins were placed there. These were recorded *in situ* but not removed as they were to be unaffected by development plans.

There were five legible coffin plates:

Table 77: Vault 9 Named Coffin Plate details

Burial.	Name	Age	Date of birth	Date of death
N/A	Mary Jenkins	73	1788	20 th April 1861
N/A	Edmund Jenkins	25	-	2 nd January 1848
N/A	Leoline Jenkins	37	-	21 st March 1862
N/A	Helen Jenkins	72	-	25 th April 1882
N/A	Vernon Jenkins	3mths	-	14 th November 1827

Mary Jenkins' coffin plate includes her year of birth (1788) and states that she was *'the wife of William Walter Jenkins late of Digbeth House and daughter of Thomas and Mary Scudamore, late of Spiceal Street'*. This is valuable information that could be used to build up a complete profile of Mary's life. As the family lived in Spiceal Street, which bordered the churchyard, this could provide information about a family that lived in the heart of the parish. The address also provides the starting point for census research that would probably clarify the rest of the family background and help to identify the other individuals in this vault. This, together with the information from trade directories, may clarify the trades that the family were involved in.

There is evidence from burial records and census returns that the family may have moved into the city from Water Orton.

Three of those named above have obituaries that include addresses and details of family relationships. Mary and Leonard Jenkins are listed as having wills available to examine. All these sources would provide more details of the family and their status.

There were very few burials in the churchyard after 1870, and initial research in the parish records has already identified two other members of the Jenkins family that are probably to be included in the group:

Leonard Jenkins who died on November 19th 1877, aged 59, and
Thomas Jenkins who died October 3rd 1871, aged 57.

Recommendations

If further research in the parish records was carried out, it would probably enable identification of the remaining 5 burials, two of whom were children. This is one of the later groups of burials and since all the dates of death are after 1837 further research in the civil records is also possible. There are some additional references to the Jenkins family in the archives at Birmingham Records Office that may yield more information about their lives.

Initial research has suggested that this Jenkins family was involved in iron and steel and related industries in the town. This, together with the many viable research strands that are available, would make further research into this family interesting. A detailed family history could be drawn up providing an insight into another aspect of parish life.

In this case however, the remains were left on site, so there would be no scope for comparison with the skeletal evidence.

Vault 10

Vault 10 was a very large structure located centrally towards the northern boundary of the churchyard. It had an access corridor along the western side and was divided into four chambers (labelled A-D) on the eastern side, all accessible from the corridor. There were a number of burials in lead coffins located in these chambers, but only three produced any correlating name and date evidence.

Chamber 10B

This chamber contained a total of 5 burials, one of which was accompanied by an inscribed gold ring:

Table 78: Vault 10B Mourning Ring details

Burial	Name	Age	Date of birth	Date of death
HB 372	Mr Tho(ma)s Martin	53	-	13 th September 1808

It was sometimes the custom for a widow to have such details engraved on a wedding ring after the death of her husband. This would suggest that HB 372 is Mrs. Martin, who must have died sometime after 1808. The coffin is also interesting as it was placed on two grinding stones within the vault (see Bevan, below).

Recommendations

The ring and the grinding stones are unusual features and, together with the fact that this is the earliest named burial in the graveyard, further research on this person is very important. However, since 1808 is before civil registration this would be difficult. It would be possible to consult the burial records or IGI for the death of a Mrs. Martin after 1808, but without any substantiating evidence of any family connection this research is tenuous.

Table 79: Vault 10B Named Coffin Plate details

Burial.	Name	Age	Date of birth	Date of death
HB 382	Daniel Rowlin	-	-	March 30 th

This coffin plate is very hard to read and the only discernible information is insufficient to make further research viable.

There is a possibility that, as these two burials are in the same chamber of Vault 10, they may be part of the same family group, although the lack of information about the burials in the whole of the vault makes this theory difficult to substantiate.

Vault 10D

Table 80: Vault 10D Named Coffin Plate details

Burial	Name	Age	Date of birth	Date of death
HB 543	James Cookley	83	-	20 th February 18??

At 83 this burial is one of the oldest named burials.

No further research has taken place on this coffin plate at this point.

Recommendations

The coffin plate is very hard to decipher and the lack of a complete date would mean the only line of research possible would be to search the February burial records for the whole of the 19th century. This would take considerable time and since the surname is also not clear, this may not be a productive line of research.

Vault 12

This was a brick-built vault designed for one burial, very carefully shaped to accommodate the coffin. It was in the northern part of the churchyard, quite close to the church and flanked at each end by Vault 21 and Vault 11.

Table 81: Vault 12 Named Coffin Plate details

Burial.	Name	Age	Date of birth	Date of death
HB 703	Sarah Parker	-	-	November

The coffin plate disintegrated on touch and so was impossible to salvage. The only details that could be deciphered before it crumbled were the name and month of death, November.

Recommendations

An examination of the National Burial Index has revealed that there were three Sarah Parkers buried in St. Martin's during November, in 1777, 1790 and 1825. Examination of the burial records may give the age of these burials and this, together with skeletal evidence and archaeological evidence (coffin design and furniture, vault construction), may help in identification – the most likely date is 1825.

Vault 18

This vault was located very near to the northern churchyard wall and in association with Vaults 16 and 17. Although of reasonable depth, it only contained a single layer of three coffins, two of which were particularly well preserved. A brick dividing wall separated HB 552 from HB 575 and HB 576.

There were two coffin plates naming the individuals as:

Table 82: Vault 18 Named Coffin Plate details

Burial.	Name	Age	Date of birth	Date of death
HB 576	Frances Home	53	-	20 th November 1833
HB 575	John Home	50	-	27 th October 1828

John Home is listed in trade directories as a '*Chemist and Druggist*' at 70 High Street from 1803 until 1825. In 1816, he moved to Union Street, but subsequently, in 1818, he returned to High Street. The shop could have been in existence before this, but the earlier directories are much smaller and less comprehensive. In 1829, after John has died, the reference to the shop disappears.

John and Frances Home are listed prior to 1829 as living on the Bristol Road in Edgbaston and, after John dies, Mrs Home is listed as living alone.

At this stage, there is no indication from the records of the identity of the third person in the vault, but it is likely to be another family member.

Since these two dates of death are before 1837, the research is more problematic than for burials after that date.

There are, however, obituaries available for John, Frances and two children, Sophia Frances, who died in 1816, and Edward H, who died in 1817. One of these children may be the third person in the vault, so the parish burial records could be checked to verify this. The obituaries are often difficult to locate, but sometimes have valuable information. If one child died in 1816, the parish marriage records could be examined before that date to see if the couple married at the church. If located this may provide details of the previous generation.

There may be wills lodged, which would provide further information. As the date of death is before 1858 these would be held at Lichfield Diocesan Office. This would be a further line of research. There are no other references in the Archives.

Recommendations

Further research into the Homes' family may provide interesting detail of small-scale retail industry in the parish.

Vault 23

This vault was located in the northwestern corner of the graveyard, on the boundary wall. On excavation it initially appeared to contain only discarded coffin shells. However, further excavation revealed a number of poorly preserved burials contained within some of these coffins. The coffins with discernible coffin plates belonged to the middle layer of three. The layers had been separated by wooden beams that had rotted through, resulting in the collapsed state of the coffin material.

This vault contains 9 burials:

HB 676, 681, 691, 697, 698, 702, 722, 723, 692

Two of these were identified from coffin plates.

Table 83: Vault 23 Named Coffin Plate details

Burial .	Name	Age	Date of birth	Date of death
HB 691	Hannah Ainsworth	68	-	1 st January 1827
HB 702	Isaac Ainsworth	80	-	11 th December 1837

Initial research on these individuals in the obituary lists revealed that they both lived in St. Martin's Lane, very close to the church, and that Isaac was a saddler. Their son Isaac also has an obituary and could be one of the other burials in the vault.

Further research into this family would be difficult, as it is one of the earlier groups of burials. However, preliminary research in the National Burial Index indicates that other members of the Ainsworth family are buried in the churchyard. So the Parish records should be consulted further in an attempt to identify the seven other individuals in the vault. The IGI may also provide useful detail. The death certificate for Isaac Ainsworth could be obtained since he died just after 1837. The information on this early certificate may be limited, but it should confirm his occupation, the cause of death, and the person who registered the death may be a family member. There are no references in the Archives, and if there were wills lodged for any member of the family these would be held at Lichfield Diocesan Office. The obituaries are the only definite sources of information at this stage.

Recommendations

Further research may reveal valuable details about a family that lived so close to the Church, and provided an important service in the Parish.

Vault 30

This vault was located on the western side of the church, in a prominent position, associated with the church entrance. The rectangular vault contained 8 burials:

HB 792, 793, 794, 829, 830, 831, 840, 841.

Six of the burials can be identified by coffin plates:

Table 84: Vault 30 Named Coffin Plate details

Burial	Name	Age	Date of birth	Date of death
HB 840	William Haines	54	-	2 nd July 1851
HB 793	Eliza Haines	60	-	3 rd August 1904
HB 792	Campbell Lloyd Haines	42	-	18 th June 1878
HB 841	Jane Lloyd Haines	64	-	21 st January 1869
HB 829	Frank Haines		10 th October 1840	16 th September 1860
HB 794	William Tertius Haines		5 th November 1831	31 st August 1869

Details of the other burials have been obtained from a Vault Record Book held in the Central Library Archives (MS943/13/1). This lists vaults and gravestones in the churchyard in 1879 and is associated with a plan of the churchyard, drawn at the time.

Table 85: Vault 23 Vault Book Details

Burial	Name	Age	Date of birth	Date of death
N/A	William Haines	2	10 th November 1828	8 th July 1831
N/A	James Haines	9 mth	13 th July 1830	25 th April 1831
N/A	Alfred Haines	10 mth	30 th October 1838	1 st September 1839

This vault was very close to the front of the church, suggesting that the people buried there had some special significance, or enough money to pay for such a privilege, or perhaps it was located there simply because it was the only space left.

The vault is unusual in that using the coffin plates and the Vault Record Book identification of the burials is possibly more accurate. However, there is a discrepancy between the number of burials excavated (8) and the documentary evidence (9), so final identification may depend upon the skeletal analysis. It is possible that one of the two infants who died at less than one year of age have not been recognised in the skeletal assemblage at this stage.

William Haines is described as a '*Solicitor*' in the Vault Record Book and his wife is listed as Jane Lloyd Haines, suggesting that her maiden name may have been Lloyd. The information in the Vault Record Book confirms that in this vault were William, his wife Jane and four sons, one of whom died aged 19, and three others who died before they were three. There are obituaries for William and three of his sons, giving an address, in 1839, in Lower Hurst Street and, in 1851, of Harborne Lodge. This provides the information necessary for examination of the 1841 and 1851 Census returns.

Most of the adult deaths were after 1837, so all the death certificates could be obtained. Further examination of the entries in the parish registers may provide an address, based upon which census research would be possible.

There are four references to William Haines in the archives that relate to property transactions and one relates to a court case at Warwick Assizes. These references may provide valuable detail about his life, which would help build up a picture of someone described as a '*Gentleman*' in the 1830s. It is quite possible that, as a man of property, there may be a will lodged, which would be held at Lichfield Diocesan Office.

Initial investigation indicates that William Haines may have been quite a wealthy man with interesting connections in the town. He and his wife Jane lost three children aged under three. This demonstrates that the high infant mortality rate of the time was not confined to the less wealthy.

Examination of the will of William Tertius Haines, HB 794, shows that he and Campbell Lloyd Haines were brothers. Their relationship to William Haines will become clearer after further research.

Eliza Haines was buried in 1904, thirty-five years after Jane Lloyd Haines. The graveyard was closed in 1915 and she was one of only three people to be buried there in the 20th century. It would be worthwhile pursuing further research into Eliza because of the late date of the burial.

Recommendations

Using the information already available, research into this family should be straight forward. However, it may take some considerable time because of the number of individuals involved and the large amount of information that is potentially available.

Research on the burials from this vault would be particularly valuable in that considerable information could be gathered about a whole family, which appears to be amongst the wealthier members of the parish.

Vault 33

A brick-built, barrel-roofed vault, located to the southwest of the modern church, in association with Vaults 31 and 32. This vault was only designed to contain a single coffin in width, although two were stacked on top of each other. The burial containing the coffin plate, HB 779, was above an earlier coffin, HB 789.

Table 86: Vault 33 Named Coffin Plate details

Burial.	Name	Age	Date of birth	Date of death
HB 779	Capt Adj Benjamin Robinson	60	-	5 th June 1834

This person is interesting because of his military rank.

His obituary in the Aris Gazette of 16th June is as follows:

'On Thursday in the 61st year of his age Captain Adjutant Benjamin Robinson at Cheapside. The deceased was a native of this town and served in the Guards in the expedition of Walcheren and in the memorable retreat of Sir John Moore to Corunna during which he filled the arduous post of Quarter Master to the 6th Regiment of Foot as part of the rear division'.

He is listed in the 1808 Army List as being Quarter Master of the 6th or Royal 1st Warwickshire regiment.

His wife Elizabeth died aged 55 and is formally listed in the obituary list as living in Cheapside. Whilst there is no date of death, the entry was in 1831, before the death of Captain Robinson, whose coffin was the uppermost of the two in the vault, suggesting that she is probably the other burial.

Captain Robinson died before civil registration began, so no death certificate is available. There are no references to him in the archives. If there were wills lodged for him or his wife they would be at Lichfield Diocesan Office.

Recommendations

Whilst it would be interesting to discover more about this person, further research is difficult. The Warwickshire Regimental Museum may have further information.

The parish marriage and baptism records could be searched, but this would be very time consuming and, with no evidence that they always lived within the parish, may not justify the effort involved. Captain Robinson does, however, represent a particular aspect of parish life, and although possibly unique, he should be included to illustrate the wide range of people buried in the churchyard.

Coffin plates not from vaults

Two coffin plates were found during the excavation of the open churchyard. Unfortunately, both coffin plates were from disturbed deposits and were not associated with any burial.

Henry Flavell and John Gough

Table 87: Non-Vault Named Coffin Plate details

Burial	Name	Age	Date of birth	Date of death
N/A	Henry Flavell	87	-	26 th January 1816
N/A	John Gough	82	-	23 rd March 1843

Since the date of death is before 1837, research on Henry Flavell presents difficulties, but examination of the burial register may give his address and the IGI may also provide further detail. There is an obituary for him and his wife available stating that they lived in Worcester Street. There is no reference to him in the Archives. The Vault Record Book lists Henry and his wife as being buried together.

Initial research from the IGI has produced a possible match for this name. A John Gough is listed as being christened on 8th January 1761 in Montford, Shropshire. His parents are listed as John and Marg Gough. This connection is still very tenuous. Theoretically, as the date of death is after 1837, further research is possible.

Recommendations

As the coffin plates do not directly relate to any excavated skeletal remains, any further research has a low priority.

8.3.6 Grave Memorials

Below is a list of the grave memorials recovered from site. While the information contained upon them was noted and photographed, only ST 16 could provide further information because it related to Vault 5. The remaining stones had previously been moved so could not be related to specific burials. No further research is therefore recommended on the remaining names.

Table 88: Grave Memorial Details

Memorial No.	Name	Relationship	Age at death	Year of death	
ST 1	Farrar Sarah	wife	61	29/12/1824	
	Farrar Robert	husband	85	16/4/1837	
ST 2	Jackson S W				
ST 3	Morgan Thomas		28	13/1/1791	
	Morgan Mary			29/3/1812	
	Gleave Elizabeth		75	13/2/1827	
ST 4	James Ann		47	22/5/1837	
ST 5					
ST 6	J.C			1816	
ST 7	Blakemore Thomas	husband	49	4/7/1819	
	Blakemore Sarah	wife	64	14/2/1826	
	Blakemore Drusilla	daughter		1821	
	Blakemore John	brother?	38	25/3/1834	
	Blakesmore Thomas	brother?	41	14/5/1834	
ST 8					
ST 9	Thomas William	son	5months	11/5/1827?	Parents-Frederick
	Thomas Mary Ann	daughter	2yrs 5mths	11/12/	& Mary Ann Thomas
ST 10	Langley James			19/4/	
ST 11					
ST 12	Willmore David?		20	5/7/1810	Re-used gravestone-Elizabeth
	?	children			
	?	wife		28/7/1815	
ST 13	Baker Benjamin		27	5/5/1814?	
ST 14	Couradine Mary			30/6/	Wife of Benjamin
	Children				
ST 15	Porter Sarah Ann		2	23/8/1827	Parents-Richard & Sarah

				Porter
ST 16	Warden Sophia		68	18/6/1860 2nd wife of late Joseph
	Warden Edwin	Stepson	41	28/4/1861 Son of Joseph & Ann Maria
ST 17	?Marianne		8?	27/?/18??
	?Mary	daughter	child	
	?Maria	daughter	child	
ST 18			75	
ST 19	W.H.			1813
	S.H.			1824
ST 20	Simpson Catharine		75	11/4/1821
ST 21	Munro Susannah	wife	56	23/4/1861 husband - George
	Munro George	son	29	22/3/1862
ST 22	Shuttleworth ?	wife		19/3/1811
	Shuttleworth John	husband		4/1/1823
ST 23	Wilson Joseph		39	29/11/1828
ST 24	Johnson Elizabeth		6?	12/?/?
ST 25	???ttier Elizabeth	wife	62	15/11/1825 wife of Thomas
ST 26	Willets John			29/12/18>??
	?			10/4/1839
	Marford Edward	son-in-law	31	20/4/18??
ST 27	Collins John	husband	??	2/3/1815
	Collins Ann	wife		
ST 28	R.R.H.			1818
ST 29	Wh? Edward			
ST 30	Ferne Charle	son	3	Apr
	Ferne Elizabeth	daughter	2	
ST31	Gale William	son	16	2/5/1774 son of John
ST32	Bradly? Joseph	son	6	8/?/?
	Bradly? ?	son		?/4/son of
ST33	?ower/s vault			18??
ST300	Onions Martha	wife	59	31/1/1836 of James
	Onions James	husband	66	23/12/1841?
	Onions Thomas	son		
ST301	Ball Benjamin		49	?/4/1826
ST302	Whittle Mary	wife	22	3/7/1830 of David
	Whittle Sarah Ann	daughter	infant	
ST303	Wood Joseph	or woodgent?	76	7/6/1813
ST304	Jukes Ann	wife	60	19/8/1786
	Jukes Joseph	husband	81	9/10/1811
	Jukes John	son	66	10/10/1822
M200	Camoden Mary	wife	36	15/7/1692
M201	Moore John			1698

8.3.7 Potential and recommendations

It is clear from the initial research into the named sample that there is a variable amount of information available, and the degree to which certain avenues of research may be pursued differs. This is particularly true of burials made before Civil Registration began in 1837. It is also true that the value of certain avenues of research can only be judged after it has taken place. This makes quantifying the amount of further work required very difficult.

Further research into all the named sample would yield interesting information about the people buried in St. Martin's. However, those coffin plates with incomplete information (Cookley, Parker & Rowlin) would prove difficult to research, very time consuming and possibly would not produce any further information of value. The Sansom, Home and Ainsworth families would be easier to research, and have a greater potential to produce information about small retail outlets in the parish. The Jenkins' family coffin plates provide a great deal of information that already suggests that research would be productive, and early indications are that they may have been connected to the steel industry in the area. However, the remains were not excavated so supporting skeletal evidence would not be available. The Haines family vault has yielded a great deal of information that would make research easier and early evidence suggests that this was a wealthy professional family in the area. Research into this family would provide a contrast to the manufacturing and retail families already studied.

If we take the detailed results obtained from researching the individuals buried in vault Vault 5 to be typical, then the value of pursuing any of the named burials can be judged to be high. However, particular attention should be paid to the correlating skeletal evidence, textile information, ecofactual evidence and coffin furniture. Consideration of all these aspects may provide a much more rounded insight into family history, status and attitudes to death than would be available from the documentary sources alone.

8.4 Coffin Wood by Rowena Gale

8.4.1 Introduction

The remains of wooden coffins were associated with a large number of interments in earth-cut graves and vaults dating from the late 18th – 19th century. The wood was sufficiently well preserved to allow species identification for many of the coffins. In some instances, church records and local documentation, together with evidence from the burials themselves, have provided details of the history and social status of the families involved.

The coffins of local families would almost certainly have been made by Birmingham craftsmen, most likely using timber from local resources. The identification of the coffin woods indicated the range of wood species used for their construction (oak, elm, pine, hazel or alder, and an unidentified exotic timber). A full analysis of the data obtained during the wood identification may show distinct categories of use, e.g. association with status or the time of burial. It may also be possible to comment on the character of local woodland and the supply of timber for commercial use.

This report includes the assessment of wooden components of coffins from 82 burials:

- earth-cut graves – 27 contexts (28 samples)
- vaults – 55 contexts (62 samples)

8.4.2 Materials and methods

Preservation appears to have been best where waterlogging or very moist conditions occurred, although a couple of samples were preserved through partial mineralisation. Many wood fragments, particularly those from the earth-cut graves, were very degraded or fragmentary (some appeared to have dried out following excavation). Approximately 81 samples were submitted from non-vault contexts and, of these, only 27 were considered suitable for species identification, in contrast to the vault samples of which the total quota was examined.

The condition of the samples included in the wood identification varied from firm to degraded and friable. The samples were prepared for examination using standard methods (Gale and Cutler 2000). For waterlogged wood in reasonable condition, thin sections were removed from the transverse, tangential and radial surfaces and mounted on microscope slides. These were examined at magnifications up to x400 using transmitted light on a Nikon Labophot-2 compound microscope. For desiccated and mineralized wood, newly exposed surfaces in the same orientations were supported in sand and examined using incident light illumination on the same microscope. The anatomical structure was matched to reference material (Tables 1 and 2). Where possible the maturity of the wood was assessed (i.e. heartwood/sapwood), but the poor condition of the wood frequently prevented this.

8.4.3 Results

The taxa identified and the potential for C14 dating are shown on Table 89 (coffins from the vault) and Table 90 (non-vault coffins). These included:

- elm (*Ulmus* sp.)
- oak (*Quercus* sp.)
- pine (*Pinus* sp.), Scots pine group
- hazel (*Corylus avellana*) or alder (*Alnus glutinosa*)
- an unidentified exotic timber, possibly tropical

Table 89: Wood from coffins from the vaults: species identification and C14 potential (C14 potential: +++ excellent potential; ++ moderate potential; + low potential; - material unsuitable)

Human Burial	Context	Description	C14	Identification and comments
Vault 02				
-	1332	-	-	oak (<i>Quercus</i> sp.), heartwood
132	1361	wood in main sample bag	-	oak (<i>Quercus</i> sp.), heartwood
		small inner sample bag	-	cf. elm (<i>Ulmus</i> sp.), very degraded and partially mineralised
151	1419	coffin furniture	-	oak (<i>Quercus</i> sp.), heartwood
Vault 04				
269	1729	-	++	2 x pine (<i>Pinus</i> sp.), Scots pine group; 1 x ?exotic timber, partially mineralised and too degraded to id., probably tropical
270	1732	-	-	Non-wood
Vault 05				
297	1827	-	+	elm (<i>Ulmus</i> sp.), large volume but very degraded
587	2020	-	+	elm (<i>Ulmus</i> sp.)

598	2635	-	+	elm (<i>Ulmus</i> sp.)
607	2653	<227> wood external	+	elm (<i>Ulmus</i> sp.)
		wood with metal decoration	+	elm (<i>Ulmus</i> sp.), heartwood
		wood internal, inside coffin	+	elm (<i>Ulmus</i> sp.)
Vault 07				
082	1241	-	+	elm (<i>Ulmus</i> sp.), heartwood
-		wooden supporter	++	pine (<i>Pinus</i> sp.), Scots pine group
Vault 08				
221	1600	-	+	elm (<i>Ulmus</i> sp.), heartwood, numerous small fragments
224	1607	-	-	cf. elm (<i>Ulmus</i> sp.), numerous small fragments
226	1614	-	-	too degraded to id
233	163	-	+	elm (<i>Ulmus</i> sp.), thin slivers of degraded wood
Vault 09				
-	1975	-	-	oak (<i>Quercus</i> sp.)
862	3320	wood with shroud material	+	elm (<i>Ulmus</i> sp.)
		interior wood <290>	+	elm (<i>Ulmus</i> sp.), heartwood
863	3280	lid of coffin	+	elm (<i>Ulmus</i> sp.)
Vault 10				
317	1870	small fragments with nails	-	elm (<i>Ulmus</i> sp.)
318	1872	coffin wood <139>	+	elm (<i>Ulmus</i> sp.)
372	1874	<144>	+	elm (<i>Ulmus</i> sp.)
376	1878	<147>	+	elm (<i>Ulmus</i> sp.)
382	1880	<155>	++	oak (<i>Quercus</i> sp.), sapwood
383	1884	<157>	-	oak (<i>Quercus</i> sp.)
390	1882	<166>	+	elm (<i>Ulmus</i> sp.)
391	1886	<161>	+	elm (<i>Ulmus</i> sp.), heartwood
400	1895	<179>	+	elm (<i>Ulmus</i> sp.), heartwood
544	2488	<181>	+	elm (<i>Ulmus</i> sp.)
545	2489	<182>	+	elm (<i>Ulmus</i> sp.), very degraded
Vault 14				
312	1899	large amount of material but fragmented, 6 pieces selected for id	+	2 x pine (<i>Pinus</i> sp.), Scots pine group;
			+	1 x elm (<i>Ulmus</i> sp.);
			-	3 x oak (<i>Quercus</i> sp.)
312	1919	-	-	oak (<i>Quercus</i> sp.)
330	1948	-	+	pine (<i>Pinus</i> sp.), Scots pine group
	1947	coffin furniture	-	oak (<i>Quercus</i> sp.)
342	1982	-	+	elm (<i>Ulmus</i> sp.), heartwood
Vault 15				
255	1682	coffin wood	+	elm (<i>Ulmus</i> sp.), heartwood
Vault 18				
575	2096	coffin wood	+	elm (<i>Ulmus</i> sp.), heartwood
576	2097	coffin wood	+	elm (<i>Ulmus</i> sp.), heartwood
Vault 19				
262	1701	coffin wood	-	elm (<i>Ulmus</i> sp.), very degraded;
			+	pine (<i>Pinus</i> sp.), Scots pine group
Vault 20				
746	3006		+	elm (<i>Ulmus</i> sp.), very degraded
Vault 23				
404	2129	coffin <183>	+	elm (<i>Ulmus</i> sp.), heartwood
676	2815	coffin wood <232>	+	elm (<i>Ulmus</i> sp.), heartwood
681	2844	-	-	oak (<i>Quercus</i> sp.), heartwood
691	2817	wood on top of lead lid <239>	-	oak (<i>Quercus</i> sp.)
		internal wood <240>	+	elm (<i>Ulmus</i> sp.)
697	2904	<249>	+	elm (<i>Ulmus</i> sp.), heartwood
		<250>	+	elm (<i>Ulmus</i> sp.), very degraded
702	2816	interior wood <247>	+	elm (<i>Ulmus</i> sp.)

722	2391	-	+	elm (<i>Ulmus</i> sp.)
723	2932	-	-	elm (<i>Ulmus</i> sp.), heartwood
Vault 26				
489	2372	-	-	elm (<i>Ulmus</i> sp.)
Vault 30				
794	3134	coffin: inner lining <265>	+	elm (<i>Ulmus</i> sp.)
	3237	coffin board wood lining <279>	-	oak (<i>Quercus</i> sp.)
	3238	coffin board wood lining <276>	+	elm (<i>Ulmus</i> sp.), heartwood
829	3241	box 1003	-	cf. elm (<i>Ulmus</i> sp.), very degraded
831	3243	box 1015	-	cf. Elm (<i>Ulmus</i> sp.), very degraded
840	3262	external wood <282>	+	elm (<i>Ulmus</i> sp.)
841	3264	internal wood <286>	+	elm (<i>Ulmus</i> sp.)
Vault 32				
723	2932	coffin wood	+	elm (<i>Ulmus</i> sp.)
Vault 36				
868	3337	interior wood <294>	+	elm (<i>Ulmus</i> sp.)

Table 90: Wood from coffins from non-vault contexts: species identification and C14 potential

(C14 potential: +++ excellent potential; ++ moderate potential; + low potential; - material unsuitable)

Human Burial	Context	Feature	Description	C14	Identification and comments
003	1010	F0107	-	-	oak (<i>Quercus</i> sp.), heartwood
016 +018	1046	F0118	-	+	elm (<i>Ulmus</i> sp.), heartwood
021	1056	F0122	-	+	elm (<i>Ulmus</i> sp.), heartwood
022	1059	F0123	?struts/ beading	++	pine (<i>Pinus</i> sp.), Scots pine group
			?planks	++	pine (<i>Pinus</i> sp.), Scots pine group
026	1073	F0128	-	-	elm (<i>Ulmus</i> sp.), partially mineralised
040	1106	F0141	-	+	elm (<i>Ulmus</i> sp.)
043	1116	F0143	-	+	elm (<i>Ulmus</i> sp.)
046	1124	F0146	-	+	elm (<i>Ulmus</i> sp.)
050	1135	F0148	-	+	elm (<i>Ulmus</i> sp.)
055	1154	F0151	-	++	pine (<i>Pinus</i> sp.), Scots pine group
078	1202	F0176	-	-	elm (<i>Ulmus</i> sp.)
080	1210	F0178	-	+	oak (<i>Quercus</i> sp.)
125	1339	F0216	-	+	elm (<i>Ulmus</i> sp.)
146	1401	F0234	coffin wood from base	+	elm (<i>Ulmus</i> sp.), degraded
148	1408	F0236	-	+++	hazel (<i>Corylus avellana</i>) or alder (<i>Alnus glutinosa</i>), very degraded
228	1620	F0305	-	-	oak (<i>Quercus</i> sp.), heartwood
251	1676	F0407	coffin	-	oak (<i>Quercus</i> sp.), heartwood
253	1687	F0408	-	-	elm (<i>Ulmus</i> sp.)
288	1800	F0507	-	+	elm (<i>Ulmus</i> sp.)
290	1804	F0414	-	+	cf. elm (<i>Ulmus</i> sp.), very degraded
324	1931	F0433	-	-	oak (<i>Quercus</i> sp.), heartwood
340	1971	F0437	-	-	oak (<i>Quercus</i> sp.), heartwood
385	2084	F0552	-	-	elm (<i>Ulmus</i> sp.), heartwood
428	2202	F0566	-	-	elm (<i>Ulmus</i> sp.)
439	2239	F0478	-	+	elm (<i>Ulmus</i> sp.), heartwood
546	2480	F0720	-	+	cf. elm (<i>Ulmus</i> sp.), very degraded

8.4.4 C14 samples

The potential of each sample for C14 dating was assessed and is indicated as +++ (high potential), ++ (moderate potential) and + (low potential) and – (unsuitable) on Tables 88 and 89. Despite the large amount of material, only a single sample provided really reliable dating material, i.e. hazel (*Corylus avellana*) or alder (*Alnus glutinosa*), from a non-vault context (HB 148). Wood from the remaining categories was mostly derived from wide planks and essentially represent trees of unknown and possibly considerable age. The wood was too degraded or fragmented to assess whether it was likely to have originated from inner or outer areas of the trunk.

Although pine (*Pinus* sp.) is comparatively short-lived, especially when grown for timber, the samples identified could include wood up to a century or more in age, and has therefore been graded as only of moderate use for dating. Oak (*Quercus* sp.) and elm (*Ulmus* sp.) both have natural life-spans of some centuries, although oak will usually out-live elm. Elm has been categorised here as of low potential and, with the exception of sample 155 (HB 382), which was clearly oak sapwood (categorised as ++), the oak samples are not recommended for dating.

8.4.5 Statement of potential

The samples included in this assessment were obtained from a large number of burials from designated areas of the burial ground, including 62 samples from 55 burials in vaults and a further 28 samples from 27 non-vault burials. Four taxa were identified: elm (*Ulmus* sp.), oak (*Quercus* sp.), pine (*Pinus* sp.), hazel (*Corylus avellana*) or alder (*Alnus glutinosa*), and an exotic remained unnamed. From this large body of data it may be possible to correlate the use of specific timbers with documented burials and/or with temporal use of the graveyard. Most of the timber used would have been of local origin and evidence of timber supplies and woodland management should be considered. The supply and use of exotic timbers is also of interest.

Due to the generally low potential of the samples for C14 dating and the relatively recent date of the vast majority of the burials, a programme of C14 dating is unlikely to refine or clarify the dating sequence established on architectural, artefactual and stratigraphic grounds.

8.4.6 Recommendations

It is recommended that the data contained in this assessment should be considered with contextual and documentary evidence to indicate the economic use of local and imported timbers, particularly in relation to social status, type of interment or period. The source/ supply of timber to local craftsmen should also be discussed together with implications for woodland management (as outlined above).

Radiocarbon dating is not recommended.

8.5 Coffin Furniture by Emma Hancox

8.5.1 Introduction

A total of 57 boxes of coffin furniture was recovered from the excavations. The furniture mostly consisted of grips, grip plates, *deposita* and nails from the coffins. The vast majority of the assemblage came from the earth-cut graves, 46 boxes, with the rest coming from the vaults.

The material from the vaults all appeared to be post c.1725 in date. However, there are some problems with the dating of the assemblage from the earth-cut graves. Due to the corroded nature of the material from the earth-cut graves, much of it was discarded on site because it would not be diagnostic. There is also the problem that furniture from the fills of grave cuts may be residual and not associated with the body buried there. The presence of several contexts each containing a variety of handles of different sizes and shapes suggests this. Whilst a few contexts may be secure, with the handles photographed or recorded as having been part of the associated coffin and being roughly datable, the bulk of the coffin furniture from the earth-cut graves is too corroded and contaminated to provide useful dating or other evidence.

The preservation of the assemblage varied immensely. From the earth-cut graves the grips and coffin plates were all very corroded. The grips were made of iron, and the vast majority was too corroded to assess even the shape or decoration. There were generally only small fragments of plate surviving, virtually none of which had any legible writing, and in most cases the wood from the coffins only survived as a dark stain. In the vaults the preservation varied greatly from vault to vault and within the vaults themselves. Some were in excellent condition, whilst others had rotted away almost to nothing.

The coffin furniture from the vaults was recorded *in situ* and samples were kept. The samples from the vaults and the material from the earth-cut graves were quantified (Tables 90 and 91) and rapidly scanned to assess their preservation and archaeological potential. Any material in good condition was photographed.

8.5.2 Coffins from the earth-cut graves

From the end of the 17th century the usual style of coffin used was single break, single case and wooden, with a stamped iron *depositum* and six stamped iron grip plates with wrought iron grips. Prior to this they had all been trapezoidal gable-lidded wooden boxes, with or without handles. The handles would have been of a type found on domestic furniture. *Depositum* plates are rarely found before 1700; the initials, date of death and the age of the deceased were usually outlined in upholstery nails on the lid of the coffin (Litten 1991:99-102). All the coffins buried at St. Martin's were made of wood with iron grips and grip plates. There was not enough wood left in most cases to tell if they had been single or double case but they all appear to have been single break, becoming very narrow around the ankles. The only exception to this was a body buried next to vault 13 (HB 408). The coffin had had large copper alloy letters attached to the lid, which had survived intact. The letters formed the initials of the deceased, the age at death and the date. Due to the poor

preservation, the collection bias and the problems of contamination, the material from the earth-cut graves is not of significant archaeological importance.

8.5.3 Coffins from the vaults and brick graves

The funeral trade grew rapidly from the beginning of the 18th century, and by 1750 some funerals had become very ostentatious. People were encouraged to spend as much if not more than they could afford on the dead "...for a cheap funeral with no flowers and a plain box would have made it clear to the world that the corpse went unloved and unhonoured to its grave" (Curl 1980, 20). Funerals became most elaborate from 1830-1860 (May 2000) and it is hard to overstate their importance at this time (see Morley 1971, Chapter 1). The majority of the vaults at St. Martin's appear to have been filled in this 'golden age' from the mid 18th to the mid/late 19th centuries.

During this time Birmingham was the centre of the coffin trade in England, and it continued to be so into the twentieth century. The 'Wrightson and Webb Directory of Birmingham' states that there were nine coffin furniture manufacturers and six coffin manufacturers in the city in 1846. By 1875 there were also 45 undertakers (Ely 2000; Patrick 2001, 51). The furniture from St. Martin's was probably produced locally, and it may be possible to match furniture to local pattern books if any still exist.

Of the coffins in the vaults, those that were in good enough condition to identify were all single-break coffins, with one exception, that of Benjamin Robinson (HB 779) in Vault 33, which was rectangular. They were either made of wood or they were triple shell wood/lead/wood. There were three types of wooden coffin, single case, single case with a double lid and double case. The majority of the wooden coffins in the vaults were too degraded to assess how many cases they had had. Of the ones that were recorded, all were single case. Most of them were covered in a velvet fabric fixed with upholstery nails. The number of wooden coffins at St. Martin's is unusual, normally most vault coffins are of the triple shell variety. Litten (1991, 100) states that "some did slip through the net and get into the vaults" but that mostly they would have been made of lead. This was to prevent the stench of rotting flesh leaking out, and was often insisted on by local church authorities (as at Spitalfields; Molleson and Cox 1993). There were a large number of wooden coffins in the vaults at St. Martin's. Almost half of the coffins described 48/105 (20 coffins were just labeled as 'present' on the context sheet) were just made of wood, including all eleven in Vault 10 Chamber D. This may indicate that the inhabitants of the vaults were too poor to have afforded the more expensive triple-shell lead coffins.

The lead coffins were mostly in good condition. Some of them were very sturdy with the lead shell being up to 4mm thick. The coffins were usually covered with a velvet or felt fabric like the wooden ones, attached to the outer wooden case with small circular copper alloy studs (called upholstery nails in the trade), although a few were covered with leather. The studs were attached in a variety of patterns, although there is no evidence that any of them formed the initials of the deceased, as has been noted at other sites (Boore 1998, 73). On a few of the coffins there was a 'lace' decoration round the edge of the lid rather than studding. 'Coffin lace' is tin-dipped filigree stamped iron, which was placed around the edge of the lid of coffins. At St. Philip's Cathedral, Birmingham (Patrick 2001) this was only noted on the later coffins, from

the early 19th century. The lead shell was often engraved with a cross-hatching decoration.

Plates were attached to the lid and sides of most of the coffins, usually one depositum or breast plate and either six or eight handle or grip plates. The grip plates were made mostly of copper alloy, but also of iron, lead, brass and tin/nickel. There were several different styles and sizes of grips, and some of them were highly decorated, again made mostly of copper alloy. One grip even had a date stamped on it (Vault 23 - 15th September 1842). The most popular motifs on the grip plates appeared to be the winged cherub and a floral pattern, both very elaborate. Boore (1993, 73) states that the winged cherub motif is found in most post-medieval graveyards and associated with all social classes. It dates from c.1743-1847 (Patrick 2001, 7) and was also found at St. Philip's Cathedral. Another popular design was a very plain geometric shape, very different to the ornate flowered and cherub designs. This simpler design probably reflects the late Victorian trend towards less ornate funerals. There was a movement at this time advocating very little ceremony and simple perishable wooden or wicker coffins that rotted quickly. Whilst very few wicker coffins were ever sold, there was a definite trend towards less ostentatious funerals and coffin furniture (Jalland 1996). Two coffins in Vault 5, an adult and a child, had urn decoration, which Penny (1981:25) refers to as a "pagan emblem". This is also a later style, appearing from the 1830s.

The depositums also came in a variety of styles. In some cases additional plates had been added to the lid, mostly plain-shaped plates but occasionally small decorated ones (see HB 297, 1827). In one case metal straps had been added to the lid as well. The breast plates were all laid out in the same format giving the name of the deceased, then the date (with the month, then the day and then the year), followed by the age of the person when they died. Two coffins were unusual as they each had two breast plates giving the same information, a plain, rectangular lead one attached to the inner lead lid and an ornate one attached to the outer wooden lid (HB 702, Vault 23 and HB 840, Vault 30). This has also been noted at St. Philip's on the coffin of Mary Baldwin, who died in 1858. The shape of the *depositum*, if not a plain rectangle, should, by heraldic convention, indicate the sex of the person buried there. A shield for a boy or young man, a lozenge for a girl or unmarried woman, rectangular with an oval panel for a married woman and rectangular with a square panel for a man (Litten 1991, 109). Litten states that the coffin furniture manufacturers did not always follow this convention as they did not always know that the different shapes should indicate different people. From the plates where the name is readable, St Martin's does not follow convention. The shield design was the most popular, but it was used for 2/3 of the women's plates and 4/6 of the adult men's. It was not used at all for a boy or young man. It would be interesting to know if the plates which are no longer legible but of recognisable shape also do not follow convention. It may be possible to look at this in relation to the findings of the osteological study.

Table 91: Coffin Furniture from grave cuts.

	Quantity	Weight (g)
Coffin Handles	870	168523
Coffin Plate	10496	123101
Coffin Nails	3102	15425
Coffin Studs	39	159

Table 92: Coffin Furniture from vaults and brick graves.

	Quantity	Weight (g)
Coffin Handles	234	60652
Coffin Plate	1603	17595
Coffin Nails	437	1831
Coffin Studs	55	159

8.5.4 Statement of potential

The coffin furniture recovered from the earth-cut graves is very corroded, and there are problems of residuality and contamination. This material is therefore considered to be of little archaeological importance. From the vaults, however, the material is in good condition and mostly well recorded. It is roughly datable, and styles and designs can be readily identified. This material has high potential for further comparative study with sites of similar date such as Christ Church, Spitalfields.

8.5.5 Recommendations

It is recommended that further work should be carried on the coffin furniture from the vaults. The material should be compared to any extant pattern catalogues from the period. If any survive from the Birmingham area these should be looked at along with those kept at the Victoria and Albert Museum, London. A record sheet should be designed and each coffin should be fully recorded including any pertinent information from the osteological, coffin wood and textile analyses, and any information from the local archives. It would also be useful to assess the coffin plates in conjunction with data on sex and age, to see if the shape of the *depositum* plate varies depending on who is inside.

8.6 Textiles by Penelope Walton Rogers

8.6.1 Introduction

The material recovered during the excavations proves to be one of the best preserved collections of shrouds and coffin fabrics recovered from outside London. Study of the textiles should:

- (a) provide information about the Birmingham funerary trade and
- (b) provide support, in terms of dating and status of individual burials, for other parts of the St Martin's project.

8.6.2 Quantity, date, provenance and contamination

There are 124 burials with textile, out of the 857 excavated. Approximately 37 of these come from vaults (V2, V4, V5, V8, V9, V10B, V10C, V15, V17, V18, V19, V23, V26 and V30) The remaining textiles are from earth-cut graves. The total number of separately itemised textiles is 160, but some of these are combined items, e.g. a wool lining with silk trim.

The burials are mainly dated to the late 18th and 19th centuries. All the textile finds appear to be associated with individual burials – there is no obvious contamination, nor any residual material from earlier levels.

8.6.3 Preservation and bias

The best-preserved material comes from the vaults. These represent the largest pieces, and include evidence for garments, shaping of shrouds, application of coffin trimming, etc.

The textiles from earth-cut graves are mainly smaller pieces and may be regarded as samples from which technical data can be retrieved (weave, spin, fibre), even though little can be discerned about shaping and stitching.

It is obvious that wool and silk have survived well, but the cellulosic fibres (i.e. linen and cotton) have not. This is particularly clear in the case of the 'wool unions' (see below), where only the wool has survived out of what was obviously once a wool-linen or wool-cotton combination.

8.6.4 Range of material

The material may be divided into different categories:

Coffin covers and linings

(a) A small number of blue-black heavily napped wool textiles almost certainly represent the black baize which was commonly used to cover the outer surface of the coffin boards until the 1830s or 1840s.

(b) A much larger number of undyed wool unions exist (a union has different fibres in warp and weft: in this instance, one is wool and the other, probably cotton or linen, has decayed away). A few of these have been identified as linings and wool union has also been identified in coffin linings at other sites. It seems likely, therefore, that most examples of wool unions at St Martin's (see Table 93) represent linings.

(c) Some of the silk ruffles and pinked and punched decorative edgings may have been decorative edgings on the coffin.

Funeral garments

(a) The undyed wool tabbies are probably the remains of the wool shrouds which were used from the late 1660s to c.1820. Shrouds at this date were sleeved garments, rather like a nightdress. Remains of seams, which should be analysed, are present on some of the largest pieces.

(b) There is an item known as a 'face cloth' from HB 321. This is a rectangle of undyed wool tabby, with a pinked and punched edging and a silk ribbon trim. It would have been placed over the face of the deceased.

Personal clothing

(a) A pair of knitted wool stockings were found on the legs of the body in HB 792. They are heavily darned and may be identified as a garment worn in life, rather than something provided by the undertakers/funeral directors.

(b) A further example of a fragment of wool knitting was found in HB 576, although the garment it came from is not known.

Miscellaneous

A distinctive group of undyed wool tabbies (marked 'worsted' in the table) have a smooth linen-like appearance and examination under the microscope showed that they had decayed (or suffered chemical processing) in a uniform manner. This curious feature has not been seen before and may indicate a bleaching process that has harmed the fibre and/or an attempt to make the wool cloth look like linen.

Trimmings

The following trimmings have been recovered:

(a) a range of silk ribbons in different weaves, some edging textiles, others free and tied in knots;

(b) covered buttons

(c) ornamental ribbon rosettes and bows

It is not always obvious whether these come from the coffin upholstery or the shrouds: careful examination at the analysis stage may provide answers.

Animal fibres

The animal fibres associated with the wool unions are likely to be from the padding of the coffin behind, or under, the coffin lining. Some fibres may be human hair – either from the head or from the body.

Table 93: Textiles

Strat Unit	Feature number	Vault Number	Human Burial Record Number	Comments (for key, see NOTES at end of table)
1007	F0106		002	poor, mineralised - exclude?
1019	F0108		007	[1018] wool union (and fibre?)
1024	F0111		010	[1025] wool union and animal fibre x 2
1047	F0119		019	[1051] wool union x 2
1120	F0166		044	animal fibres
1124	F0146		046	[1123], wool union x 2
1127	F0144		047	wool union
1134	F0147		049	wool union
1156	F0154		056	[1157] wool union
1193	F0164		?066?	[1184?] wool union?
1194	F0168		070	[1195] poor ?wool textile 'found under left ribs'
1201	F0170		072	[1200], non-textile: almost certainly plant roots 'felt' - exclude
1230	F0180		084	felted wool textile
1233	F0181		085	[1231] wool union and animal fibre 'pin and fabric'
1236	F0182		086	[1234] poor wool tabby
1250	F0188		091	[1251] wool union
1264	F0191		095	[1263] wool union
1270	F0193		097	poor wool tabby and animal fibre
1301	F0204		109	[1300] wool tabby
1305	F0203		111	crushed debris, including wool fibres
1308	F0205		112	wool? tabby and animal hair [shroud?], 'from top of skull'
1316	F0208		115	[1317] wool union
1324	F0207		118	skin? and fibre -- human hair?
1326	F0210		119	wool union and animal fibre 'from skull'
1331	F0223	V02	121	wool union and silk satin ribbon, pinked; 2 bags, separately packed
1332	F0223	V02	?121?	wool union, silk tabby ribbon w pinked edges
1347			128	animal fibre on wood (padding)
1351			129	poor wool tabby
1371	F0226		135	wool? tabby and animal fibre ' found by skull'
1376	F0227		137	WOOD - no textile visible - exclude
1390	F0232		142	[1391] animal fibres and wool (F) worsted tabby
1402	F0234		146	[1400] animal fibre and ?skin/leather?
1403	F0235		147	[1404] poor wool tabby
1408	F0236		148	[1407] small frag wool tabby
1434	F0244		155	skin and decayed textile
1447	F0250		161	Box 2 wool union, plain wool, animal fibre [1x coffin lining/coffin wood and also Box 5- crumbly wood and other debris - no textile
1483	F0246		173	animal fibres -- human hair?
1488	F0250		175	wool union
1512		V17	186	[1x textile fragment] see V17 below, 1609 etc
1524	F0277		191	wool union
1537	F0279		195	[1538] poor wool tabby
1543	F0282		199	[1544] wool union
1600	F0315	V08	221	v poor threads 'from skull'

Strat Unit	Feature number	Vault Number	Human Burial Record Number	Comments (for key, see NOTES at end of table)
1609p		V17		animal fibres ?human
1610		V17		wool threads
1611	F0315	V17	225	[3x textile fragments (1605) + (1612)] 1612 = 2 x wool union, brushed
1619	F0305		228	[1620] wool union
1623	F0309		230	[1626]. animal fibre
1624		V15	255	wool union of 1682 and 1x ribbon silk tabby folded
1635	F0311		234	[1634, sample 33] poor wool union?
1639	F0312		235	[1638] pwr poor animal fibre 'pins and packing by skull'
1649	F0401		239	wool? tabby (SF 34)
1674	F0319		244	wool union
1675	F0319		250	wool union
1682		V15		(see also 1624 – same burial?) wool union x 1
1701		V19	262	wool union, wool? tabby, silk ribbon?
1702		V19		knotted silk tabby ribbon (part of 262?)
1729	F0323	V04	269	[1728] wool tabby, dyed blue
1732	F0323	V04	270	2x wool tabby (more than one type?) includes dyed coffin cover
1794	F0416	V05	304	Box 1. extensive wool union, brushed.
1795	F0416	V05	304	Box 1 (and 1 bag in Box 3). wool tabby 'shroud' and more wool union. also 105 = silk tabby ribbon in rectangle with wool tabby. [Coffin material (sample 103); shroud (104); ribbon from shroud (105)]
1800	F0507		288	[1799]. poor skin? with fibre (human hair?) adhering
1801	F0417		289	[1802]. wool union
1805	F0414		290	wool (F) worsted tabby
1817	F0419		294	[1818] wool (F) worsted tabby
18236	F0512		295	[1822] poor wool tabby 'fabric found by skull' 2nd bag 1823, poor wool union 'fabric found by L&R hand/femora'
1827		V05	297	misc silks, including 1 black [Shroud/pillow?/4x small ribbon frags] also Box 1 satin ribbon edging wool shroud/pillow; wool tabby, seamed
1843			303	small frag wool tabby
1856	F0517		308	poor wool union
1860	F0425		310	wool union – 2 bags
1874		V10B	372	wool union on coffin boards
1875	F0345	V10B	372	1875 = small frag silk tabby ribbon. [Skull cap (sample 146)/1x ribbon frag./coffin wood with fabric attached (1874) sample 144]
1877	F0345	V10B	341	Box 1. 2 widths of silk tabby ribbon, 1 tied in bow [Hair ribbon SF23]
1878	F0345	V10B	376	[1879] 2 small frags wool union (2 bags)
1880		V10B	382	decayed fibres and wood – 'coffin lining'. Box 5 = wood, no textile. Also Box 2. wool coffin cover w metal lace. see 1881 below
1881	F0345	V10B	382	wool tabby [Coffin covering sample 150 (1880)/shroud 1881/ coffin wood 1880 (sample 155)]
1882	F0345	V10B		black wool tabby – 'coffin fabric'
1883	F0345	V10C	390	1x textile fragment sample 167
1885		V10C	383	misc threads etc, poor – see also 2085 below
1886		V10C		wool tabby (shroud?) is this the same as HB383? or HB391? also Box 2, large plain tabby, folded Record punched dec on 1886/7
1887	F0345	V10C	391	Box 2 plain wool shroud, stitched, punched [Skull cap and shroud frag]

Strat Unit	Feature number	Vault Number	Human Burial Record Number	Comments (for key, see NOTES at end of table)
1934	F0416	V05	321	[1922] Box 1 wool tabby ?shroud w.buttons/rosettes; wool face cover, pinked and punched, w. silk ribbon trim [1 head covering from shroud pillow s113 (1934)/Ribbons sample 117] Box5. silk satin bow and rosette of same, covered button, wool tabby
1958		V05	336	few threads – wool union?
1974	F0346	V09	862	Box 2 and 3. poor wool threads, covered buttons [Shroud sample 291]
1975	F0346	V09	862	Box 2. plain wool coffin cover [Coffin covering]
1979	F0345	V10B		single wool thread
1988	F0523		343	[1987] poor wool union
2014	F0443		351	[2015] poor wool tabby
2015	F0443		351	wool union – 1 frag; [2x textile fragments from 351, 2014 2015]
2025	F0441		353	[2024] wool union
2043	F0443		361	[2042] wool union
2085	F0552	V10C	383	large wool coffin cover [Sample 156 coffin covering/1x textile (1885)]
2092	F0451		387+388	[2091+2093] wool, worsted (F) tabby
2097			576	more of 2583; also Box 5 wool union on coffin board
2109	F0452		394	[2108]. wool union
2129		V23	692	Box 2. 3 silk ribbons, widest patterned + ruffled – see below
2130		V23	692	also Box 3. silk ribbons [Skull cap and ribbon (2129)]
2150	F0559		408	[2149] animal fibre (and skin?) 'cloth with pin attached'
2240	F0478		438	[2239] fine napped wool textile
2263			447	wool (F) worsted tabby [fragment with copper alloy]
2266	F0478		448	v.poor wool textile
2272	F0570		450	[2272]. wool union and 2nd packed separately
2371		V26	489	Box 3. small frag silk tabby ribbon
2411	F0705		509	[2411] wool union
2450			529	animal fibre; and 2nd packed separately = wool union
2471			539	1x textile fragment
2475	F0601		540	[2474]. crushed debris, including a little wool union
2480	F0720		546	plain wool tabby and animal fibre (human hair?)
2545	F0733		563	wool (F) worsted tabby
2580	F0416	V05	573	Box 1. punched silk (F) on wool (F) union [Skull cap and shroud samples
2581	F0416	V05	574	Box 1. wool union. 2x coffin lining sample 212
2582	F0416	V18	575	wool union [Sample 112 fabric]
2583		V18	576	3 packets: wool (F) union with silk (F) ribbon trim, 1 wool (F) tabby, 1 wool wool (F) knitted fragment; see also 2097. [Skull cap/shroud/2097 coffin wood with textile adhering (sample 193)]
2614		V05	587	wool union [Coffin lining]
2635		V05	598	x3 felted - stitched [Coffin fabric/skull cap/1x textile]
2636		V05	597	wool union as 2614
2653	F0416	V05	607	black wool coffin cover
2654		V05	607	wool union [Shroud with finger bone entwined/2653 wood with textile]
2805			665	wool tabby
2810			668	wool (F) worsted tabby
2817			691	[2817/2865] 3 silk ribbons, 1 tabby, 1 net-like, 1 folded
2844		V23	681	[2843] folded tabby silk ribbon = 'ribbon from skull cap'

Strat. Unit	Feature number	Vault Number	Human Burial Record Number	Comments (for key, see NOTES at end of table)
2904	F0802	V23	710	[2901] 2 wide silk ribbons, 1 tabby, 1 satin, ruffled and stitched
2924	F0632		727	poor wool union
2975	F0635		751	wool union
3030	F0828		759	wool union
3061	F0825		764	wool (F) worsted tabby
3098	F0837		778	poor wool union
3141	F0257	V30	792	Box 4. Knitted wool (F) socks, darned with wool (F). dye test?
3173			805	[3174] poor wool union – see below
3177			806	wool union ['textile with shroud pin and hair' prob = lining + padding]
3265		V30	841	silk satin ribbon with looped edges
3272			844	poor wool (F) union
3275			845	poor wool union
3309	F0850		857	Box 5. two types wool tabby with cu/a pin
3312			858	poor animal fibre
3320	F0346	V09	862	Box 2 + 3. large. wool union + tiny tape?

NOTES

The numbers in the left-hand column are those written on the bags.

[square brackets] indicate comments saved from original table

'quotes' indicate comments written on bags

[numbers] in square brackets are the numbers from the original table (which do not appear on the bags)

(F) indicates fibre identification confirmed by transmitted-light microscopy

All objects are in Box 3 unless otherwise stated.

8.6.5 Statement of potential

The St Martin's material in context

This is an unusually well-preserved group of textiles. Although smaller in number than the enormous Spitalfields collection, it is the largest of its type in the Midlands. There are already small collections from churches in Durham, Norwich, Lincoln, York, Wharram (Yorkshire) and various sites in Essex., but only one burial, from All Saints, York, has preservation comparable with that at St Martin's. It will be possible to compare the material with the others and to look for any differences between the Midlands and London.

The group comes from a period when the funeral trade was flourishing and providing a wide range of ready-made shrouds (sleeved gowns), caps, sheets and trimmings for the burial of the dead. The St Martin's collection will allow comparison with Victorian funeral director's catalogues.

Dating

There were certain changes in the use of textiles in burials in the 17th-19th centuries. In the second half of the 17th century, Acts of Parliament forbade anything other than wool to be used in burials. Archaeological evidence has shown that the terms of these acts were followed from c.1690 to their repeal in 1815. Linen was used until the

1670s or 1680s, and cotton and silk came to the fore with the repeal of the acts. This evidence may be used to give broad dates to some of the burials. Since there is no linen present, it is unlikely that any of the burials with textile are earlier than c.1670.

Baize coffin covers were in use until the second quarter of the 19th century, so that, where identified, these will give a date before the 1840s.

The dating may help other researchers working on the St Martin's material, such as those examining the skeletons from undated coffins.

Status

It is likely that the presence of silks and fine wool textiles will identify the more well-to-do ranks of society, which again may help those researching aspects of health.

The history of costume and textiles

The stockings, with their careful darning, are a personal touch amidst the more standardised funerary gear, and merit careful research.

The collection of silk ribbons of different types is especially interesting. They would mostly be provided by the undertaker/funeral director, but will probably also reflect the ribbons available in a Victorian haberdashery shop. These warrant careful study of technical details.

General

All these features will contribute to a picture of attitudes to death and burial in Georgian and Victorian Birmingham.

Some of these items are worthy of a display for local people to visit. While it is recognised that objects from burials are a sensitive area, a small number of the prettier items may not cause offence. We suggest the following:

- * the stockings
- * a selection of ribbons and bows
- * the face cloth.

8.6.6 Recommendations and method

Study of the material can be carried out at any stage – there is no need for further conservation work before analysis. The preliminary collection of data will be low power microscopy. Dye analysis will be by absorption spectrophotometry (visible) and thin layer chromatography. Fibre identification will be by transmitted-light microscopy, using a polarising analyser and mounts prepared as whole mounts, scale casts and cross-sections.

A specialist in animal fibres, Dr P.Greaves, Microtex International, will be asked to identify a representative sample of the animal fibres used as padding behind the linings.

Fleece-types will be identified by measuring the diameters of 100 fibres per sample and plotting the results as a histogram: the range, mean and distribution of the measurements will allow the fibres to be allocated to one of seven fleece-type categories.

A specialist in 18th- and 19th-century costume, Josie Shepherd, Castle Museum, York, has agreed to examine the stockings and other costume details.

8.7 Dentures by Annette Hancocks

8.7.1 Description

A single complete set of vulcanite dentures was recovered from Vault 5, F416 (C1827) HB 297 (SF 16; Plate 31), along with a partial copper alloy denture plate from F294 (C1573) HB211. The provenance of this material is secure. The vulcanite dentures date to the mid-19th century (R. Fea pers comm) and belonged to Ann Maria Browett (d. 1894, see Section 8.3.4 above). They were found in association with a single plain gold wedding band and hair slides (Bevan this report). This material survived because the burial was placed in a vault in a lead coffin, rather than in an earth-cut grave. This preservation bias explains the excellent condition of the dentures, which pose no long-term storage problems. The British Dental Association Museum houses an excellent reference collection and holds documentation of the processes of manufacture, fitting and maintenance (Tomes 1851). In contrast, a partial copper alloy denture was recovered from an earth cut grave. They were not designed to be removable and so were very difficult to maintain. This posed problems with the lack of oral hygiene. This particular denture acted as a banding around the remaining teeth.

The majority of 19th-century dentures were constructed with a mixture of natural 'Waterloo' and ceramic teeth, sprung with gold spiral springs. The set of dentures recovered comprise complete upper and lower set of 'tubeless' tube teeth, probably manufactured by Claudius Ash & Son of London in the late 1830s, using platinum pins to hold the teeth in place. The gold coil springs were a long-standing holding-in device, and were attached to each denture by a rotary pin. The dentures from St. Martin's are comparable to some examples from Christ Church, Spitalfields (Molleson and Cox 1993, 53-60.)

8.7.2 Manufacturing process using the high-pressure vulcanizing oven

A beeswax cast would be taken of the profile of the individual mouth. This would form the basis of a mould for casting the dentures. Vulcanite would be the casting solution. Porcelain teeth of the size and shape best suited to the patient's needs were mounted in pink wax as trial dentures that could be checked in the mouth for appearance and function.

The wax trial dentures were embedded in plaster in a metal flask (i.e. box) and the wax washed away with boiling water. The tinted rubber/sulphur mix, brown for the base, pink for the gum, was packed between and around the porcelain teeth. The flask, when filled, was clamped and subjected to 100lbs steam pressure at about 160 C for approximately two hours.

After the flask had cooled, the denture was separated from the plaster, trimmed with files and scrapers, and polished.

8.7.3 Statement of potential

Dentures of this date are known, but the set recovered during this excavation is rather better preserved than most (Plate 31). Their survival will compliment the data relating to human remains, and will add to consideration of the dental practices of the time. This is important, at both a local and regional level, in terms of social history and addressing the research aims and objectives of the project.

In conjunction with further detailed analysis of other associated finds from this particular burial (HB 297), it will be possible to build up a detailed insight into the individual's general health, wealth and well being.

Storage and curation

The dentures are stable in terms of both immediate and long-term storage and curation. Their preservation is exceptional and as such would benefit from display or active curation at a museum such as that of the British Dental Association, based in London.

8.8 Small Finds by Lynne Bevan

The small finds from the excavations can be divided into two main categories: those associated with the burials (i.e. personal items accompanying the corpse) and burial ritual, and finds not directly associated with the burials (e.g. residual material and chance losses). In terms of the research aims of the project, the first category is of the greater significance, and will be considered first. The finds are described first by functional category and second by material.

Objects associated with burials:

8.8.1 Jewellery

Gold and copper alloy rings

Four gold rings and a copper alloy ring were recovered from human burials, all within burial structures. The largest and most elaborate was a mourning ring from HB 372 (1874, SF 26), in Vault 10, Chamber B. The ring is dedicated to the memory of 'Mr THOS. (Thomas) MARTIN' who 'DIED 13 SEP 1808 AGED 53' (Plate 34). Presumably the ring would have been buried with Mr. Martin's widow or a close relative. Mourning rings were popular during the 18th and 19th centuries and there are published parallels for this early 19th-century style of ring, the face of which was usually enamelled (Becker 1980, Fig. 7.10, 93).

The other gold rings were all plain gold bands from the following human burials: HB 297 (Ann Maria Browett) (SF 17), Vault 5 ; HB 666 (2820, SF 40), Vault 21; and HB

793 (Eliza Haines d. 1904) (SF 48), Vault 30. These all appear to have been women's wedding bands. The ring from HB 666 was particularly thin and worn, suggesting that its owner might have been an elderly person at the time of death. The ring from HB 793 (Eliza Haines) was found on the left hand. The small copper alloy ring, the surface of which might be decorated, was in a fragile condition (HB 373, SF27, 2064).

Silver and copper alloy brooch

Of most interest in the collection was a small silver and copper alloy wire-work brooch with a bird in the centre, the end of which was inlaid with two turquoises or turquoise-coloured glass stones (SF41, 3008). The brooch, which is encrusted with soil but otherwise in a stable condition, is stylistically reminiscent of the late 19th century. This exquisite item is of museum quality. Unfortunately, it was not found directly associated with an individual, but in the upper vault fill of Vault 31.

Glass-faceted inlay and beads

The remains of a complete necklace were recovered. This consisted of approximately 300 pink glass beads and a small copper alloy pendant, inlaid with a cut-glass bead in the shape of a rose, to which four pink beads were attached (IIB 190, SF5, 1530). The necklace was associated with the remains of a young girl buried in Vault 3. Other glass items consisted of a medium-sized, faceted turquoise glass inlay from an item of jewellery (1643, SF 87), a small bead (HB 136, SF70) and a quantity of coloured beads of various sizes, with small fragments of remnant thread (HB 16, SF70,1046). Several coloured beads were also found incorporated into a fragment of preserved textile and coffin wood (HB 16, 1046).

Recommendations

This small collection of jewellery is interesting for several reasons, particularly in view of the significance attached to the mourning ring, a very fine example of its type, which relates to a named person whose descendants are probably alive today. The other gold rings, although less elaborate, are of no lesser importance in terms of their tangible relationship with people who lived and died in Birmingham.

Prior to reburial or to other disposal, the hallmarks on the gold rings should be the subject of further investigation with regard to their places and dates of manufacture and their makers. It would be of particular interest if the rings were of Birmingham manufacture, in view of the importance of the city's jewellery quarter which was well established by that time. Further research will be necessary on the mourning ring, which should be placed within a historical and ideological context. Photography will be required for all of the rings, particularly the mourning ring, for which additional illustration is also recommended.

The brooch and glass beads are also worthy of further study. In the past such items might have been considered of little value in comparison to the aristocratic jewels found in catalogues of historical jewellery or in museum displays. Yet they are, perhaps, of far more interest, particularly on a local level, for what they reveal regarding the less expensive tastes of the middle class of 19th-century Birmingham.

8.8.2 Shroud pins and other copper alloy items

A total of 60 complete pins and c.80 pin fragments was recovered, the vast majority of which were found in burials, where they had been used to pin shrouds around bodies. A few had become fused to skulls, following the decomposition of hair and soft tissue. Several of the pins and pin fragments had retained textile fragments. The pins tended to be plain, with either rounded or flat heads, the complete examples being of a fairly standard size.

Other finds connected with wrapping the body included two small rings with textile fragments attached. These were associated with HB 576 (2097), Frances Home, in Vault 18. A fragment from a similar ring (HB 773, 3078) and four clothing hooks (HB 34, 2097) were recovered from earth-cut graves.

Four buckles were recovered, either associated with earth-cut graves or unstratified: a complete rectangular buckle (HB 701, 2878, SF77), two possible shoe buckles (unstratified, SF78 and HB 261, SF11), one of which was fragmentary, and fragments from two smaller buckles (unstratified, SF76 and SF80).

Four ovoid studs and 22 buttons were recovered from a number of burials. The majority of this material was in a poor condition. A small hinge (HB 315, 1910, SF83), a lace end (HB 237, 1642, SF10) and a possible brooch pin (HB 595, 2631, SF82) were also found. The remainder of the collection consisted of fragmentary items, including a leaded copper alloy disc with textile survival on each side (HB 439, SF 32), a fragment of circular plate (3172, SF46) and a small hook-like object (HB 322, 1925). Other fragmentary items comprised a fragment of twisted wire (1009, SF81), a ring (unstratified, SF85), two rod fragments (HB 237, 1642, SF10, unstratified, SF85) and a strip fragment (HB 23, 1064, SF86).

Recommendations

Further work should include research and a report on the 19th-century shroud pins and fastenings and the buckles, and cataloguing, illustration and selective photography of some of the more complete items, such as examples of the two types of shroud pin. The buttons and the more fragmentary material will require a summary listing by burial/context.

8.8.3 Hair accessories

Bone and tortoiseshell combs and pin

Two main types of comb were recovered: simple bone combs and decorative tortoiseshell combs. In the 19th century, particularly during the 1860s-1870s, tortoiseshell combs were used to support elaborate coiffures, often supplemented by additions of false hair (Keycs 1967; De Courtais 1973). While the tortoiseshell combs probably entered the grave in the hair of the deceased, which it seems would have been dressed prior to burial, the simple bone grooming combs might have been kept in a bag or pocket or just placed in the coffins. The simple bone combs, which tended to be badly preserved, came from four burials in vaults: HB 266, SF53, 1718 Vault 4;

HB 270,1730, Vault 4; HB 370, SF25, Vault, Chamber B; and HB 692, SF54, 2130, Vault 23.

One of these burials also contained a poorly-preserved decorative bone comb (HB 266, SF53, 1718, Vault 4). Tortoiseshell hair combs consisted of two large examples (HB 304, SF18, 1795, Vault 5 and HB 868, 3338, Vault 36), a medium-sized hair comb (SF52, unstratified), a small hair comb, and a comb fragment from a tortoiseshell comb (HB 607, SF51, 2654, Vault 5).

Other finds comprised a small possible hairpin (HB 598, Sarah Emma Warden, SF35, 2021, Vault 5) and a well-preserved fragment from a decorative bone plate with a floral motif executed in cut-work (1727, SF55).

Pipeclay wig-curlers

Three broken wig-curlers were recovered, two of which came from earth-cut graves (HB 343, SF88 and HB 355, SF21), and the third of which was an unstratified find (SF89).

Recommendations

Tortoiseshell combs were particularly subject to breakage and discard and it is unusual to see so well-preserved and intact an assemblage as that from St Martin's. The combs can reveal interesting information regarding past hairstyle fashion and it should be possible to achieve closer dating from comparison with published catalogues of contemporary hairstyling or dating from documentary sources or coffin plates.

Further research, full cataloguing, including photography and illustration, is recommended for the hair combs, the decorated bone plate, hairpin and wig curlers. The poorly-preserved combs should be fully catalogued.

8.8.4 Worked stone

Two circular worked stones were recovered from Vault 10B (see Plate 22), each of which had a central square-shaped perforation. These stones, which were of a similar size, had been used to support a coffin (HB 372), containing the wife or other relative of Thomas Martin who was wearing the ring commemorating his death.

The morphology of the stones is more suggestive of an industrial use, that they were used in some kind of grinding or pressing process, perhaps in the metalworking industry. Moreover, the reason for their presence in the vault, where they had been deliberately placed to support a coffin, one at each end, is problematic. Was their placement an opportunistic use of available materials, perhaps from an abandoned workshop nearby, or did it hold some symbolic significance, being perhaps emblematic of the Martin family's business and the source of their evident wealth? Similar stones were recovered at the Park Street site which is almost adjacent to St Martin's cemetery.

Recommendations

Further research should focus upon geological identification of the stone and wear patterns as a clue to function, perhaps with reference to the collections of the Ironbridge Institute. Close comparison with the stones from Park Street is also recommended in view of the similarities between the two assemblages and the possibility that not all of the stones originated from the same industrial processes.

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The remainder of the small finds were probably not directly associated with the burials and most likely represent residual material, intrusive material or chance losses:

8.8.5 Coins

A total of nine coins and tokens and a metal disc was recovered, the generally poor condition of which precluded identification in some cases. Identifiable items included: a farthing dated 1814, with 'retailer's token' printed on the reverse, from the fill of an earth-cut grave (IIB 353, SF 72); a token called a 'Coventry Halfpenny', with an elephant and castle motif on one side and Lady Godiva mounted on horseback on the other, again from the fill of an earth-cut grave (1919, HB 314, SF 74); a very worn George II penny dated to the 1750s (3008, SF 42); and a recent two new pence coin (1919, HB 312, SF 74).

In addition, four very degraded, unidentifiable coins (1353, HB129, SF 1 x 1, 2158, SF 30 x 1, 1523, SF 3 x 1, unstratified x 1) and a plain metal disc, possibly a token (1381, SF 71), were found. The size of two of the coins suggests that they might have been halfpennies of possible 18th-19th century date, but their poor condition precludes positive identification. All these items either came from the fills of earth-cut graves or were unstratified.

It is possible that some of the coins contemporary with burials entered the graves on the eyelids of the deceased according to past funerary custom, but this is unlikely both because of the contexts in which they were found and because of the date of the burials. They are more likely to have been chance losses, perhaps from the pockets of mourners or undertakers.

8.8.6 Iron item

The only iron object found was a corroded pair of scissors (HB 771, SF45, 3081).

8.8.7 Lead items

Lead finds comprised a small length of window leading (HB 408, 2148, SF79), a bottle cap (HB 312, 1919, SF84) and two small balls, possibly lead shot (unstratified, SF75).

8.8.8 Clay tobacco pipes

A total of 14 complete bowls, 27 bowl fragments, and 257 stem fragments from clay tobacco pipes were found. Nine stamps were identified, three of which occurred on pipe stems and the others on bowls. The complete bowls, and some of the larger bowl fragments, were related to Oswald's dated typology of clay pipes (1975). Most of the dated bowls conformed to mid-late 18th-century to mid-19th-century types, although at least four of the bowls might date to the earlier-mid 17th-century.

8.8.9 Wooden items

A small, turned wooden ball, probably from a game (1985, SF22), was found.

8.8.10 Glass

A total of 302 small fragments of glass was recovered. The majority comprised 111 small fragments from 18th-19th-century wine and beer bottles, and 180 small fragments of window glass. There were five fragments from clear bottles of recent appearance, a fragment of pale blue glass, three necks and a base from 19th-century medicine bottles, and a clear glass rod of uncertain purpose, though it might be an apothecary's tool (HB 810, 3173).

8.8.11 Worked flint

One retouched flint flake was recovered (IIB 223, 1605, SF9). Its triangular shape was strongly suggestive of a preform for an Early Bronze Age barbed and tanged arrowhead. The material used was a light grey flint with the thin, compacted cortex typical of flint from secondary deposits. This is entirely in keeping with the flint sources exploited throughout prehistory in the British Midlands where primary flint from mines was unavailable. However, it is possible that it might have been a gunflint (de Lotbiniere 1977) in view of the general dating of the other finds and Birmingham's connection with the gun-making industry, but its shape and light colour argue against this.

Other prehistoric worked flint has been recovered from sites in Birmingham, including a flint flake from nearby Moor Street and a small, chronologically-undiagnostic side scraper from the Edgbaston Street site.

8.8.12 Statement of potential

On the one hand, the contexts of most of the artefacts and their relationship with their deceased owners are a poignant reminder of the fragility of human life. On the other hand, these small items of material culture present an interesting and unusual record of life in Birmingham during the 18th- and 19th-centuries, providing insights into contemporary burial ritual (Llewellyn 1951; Litten 1992), and the accoutrements of mourning (Bury 1985), as well as into fashions in jewellery and hair accessories (Becker 1980; Keyes 1967; De Courtais 1973).

These artefacts are also important in terms of gender and funerary ritual, a field of research which has recently attracted attention (Arnold and Lanham 2001), especially since the majority of the finds were found in female graves. There are numerous published studies regarding past burial ritual (e.g. Llewellyn 1951; Litten 1992; Jupp and Manchester 1999), particularly with regard to the pre-Victorian and Victorian periods, and the finds from St Martin's offer the opportunity to compare funerary practices through time, and to discover detailed information about the individuals buried there.

It is recommended that many of these items are fully researched and reported upon with reference to catalogues of post-medieval finds (e.g. Crummy 1988; Margeson 1993), as well as with published assemblages of finds from cemeteries such as Spitalfields (Reeve and Adams 1993). In addition, selective photography and illustration is recommended, as well as a summary listing by context for the less identifiable or complete of the objects. With regard to those individuals with 'grave goods', some effort should be made to relate the small finds to their owners, adding a social, cultural and historical dimension to the information revealed by pathology.

No further work is recommended on those items – coins, clay tobacco pipes, etc. – which were not directly associated with burials and which add little to the understanding of the site. However, an exception is the flint flake, which forms part of a small but important corpus of material documenting prehistoric activity in Birmingham. It is recommended that this flake is illustrated and discussed not in the St. Martin's report but in its sister report on the excavations, also undertaken in advance of the Bull Ring redevelopment, at Park Street, Edgbaston Street and Moor Street.

8.9 Ceramic tile by Erica Macey

A total of 74 fragments of ceramic tile weighing 3392g was recovered. The tile was counted and weighed by context and then examined macroscopically for the purpose of assessment. The assemblage, though largely unabraded, was of a fragmentary nature, with the exception of one complete Victorian floor tile (1009).

Macroscopic analysis of the assemblage noted three distinct fabric types, with one fabric dominating the assemblage. This appeared to be very similar to one of the fabric types noted at Moor Street (Macey, forthcoming). Two examples of this fabric were also glazed (1851 and 2059).

No further work is recommended on this material.

8.10 Leather items by Erica Macey

Fourteen fragments of leather were recovered from Vault 4. The fragments were examined macroscopically for the purposes of assessment and two separate pieces of footwear, either boots or shoes, were identified. These were found in a rubble layer (1713) directly under the collapsed barrel roof of the vault. This layer also produced

disarticulated human bone, gravestone fragments and coffin debris, and is assumed to be backfill from an earlier graveyard clearance.

The uppers of the shoes were in a very fragmentary condition and had almost disappeared. The soles, although in several pieces, were in a better state of preservation; of particular interest was a sole with hobnails attached.

No further work is recommended on this material.

8.11 Pottery by Stephanai Rátkai

8.11.1 Description

All the pottery was examined macroscopically. Medieval pottery was divided into broad fabric groups, e.g. whiteware, iron-rich glazed ware. These broad divisions are the same as those used in the pottery assessments for Edgbaston Street, Moor Street and Park Street, Birmingham. The post medieval pottery was divided into ware groups, e.g. yellow ware, blackware, creamware, etc. The pottery was quantified by sherd count only (see Table 94). Each context was spot dated.

A total of 921 sherds was recovered. Of these 29 were medieval. These covered a date range of c 1200-c 1550, with the greater part dating to the 13th-14th centuries. The same fabric groups were present which had been noted on previously excavated sites, e.g. Edgbaston Street, Moor Street and Park Street. The medieval sherds were generally small and often abraded, sometimes heavily. Most sherds were from cooking pots, with only seven sherds being glazed.

Medieval pottery was associated with grave fills (1013) HB4, (3105) HB780, (2937) HB725, (1381) HB129, (1259) HB94, (3065) HB765, (1925) HB322, (1077) HB27, (1988) HB343, (1227) HB83, feature fill (1416) F240, and contexts (1009) and (1412). All these contexts also contained post-medieval or modern pottery (mainly 18th or early 19th century in date). However, there were a small number of grave fills which contained only medieval pottery. These were (2836) HB677, (1285) HB103, (1605) HB223, (2409) HB508, (3137) HB788, (2059) HB371, (2549) HB564, (2830) HB675.

Grave fill (1751) HB271 contained 16th century pottery and the fill of grave HB808 contained pottery which probably dated to the 16th century. However, among these graves, HB271, HB675, HB677 and HB788 contained clay pipe stems. The remaining graves with only medieval or 16th century pottery in their fills may therefore be the earliest.

The post-medieval pottery spanned the range from the 17th-19th centuries. Again, the same wares were present which had been noted elsewhere in the historic centre of Birmingham. The greater part of this pottery was made up of blackware and coarseware dating to the 17th and 18th centuries. This strongly utilitarian aspect to the assemblage was leavened by the presence of trailed, feathered and jewelled slipwares, and tin glazed earthenwares. From the second quarter of the 18th century white salt glazed stoneware was made, to be followed some twenty to thirty years later by

creamware. Both these wares were present at St Martin's with other 18th century pottery. Because of the fragmentary nature of the assemblage, its functional make-up was not clear. However, amongst the creamware sherds there were a small number of tortoiseshell ware sherds including a teapot spout and a moulded piece which may have formed part of a "cauliflower ware" vessel. Other evidence of tea drinking was provided by a white salt glaze teapot spout and a late 18th century pearlware under glaze blue decorated tea bowl.

Later (ie mainly 19th century) wares were represented by pearlwares, blue transfer printed wares, industrial slipwares, painted wares, refined red earthenwares, utilitarian whitewares and modern yellow ware. Many of these wares represent the lower end of the market.

8.11.2 Discussion

The medieval pottery was very similar to that recovered from other Birmingham city centre sites. The medieval pottery, forming as it does such a small percentage of the total assemblage, most probably represents a general surface scatter in the area of St Martin's. The post-medieval pottery, particularly that of the later 17th and 18th centuries, presumably derived from the buildings surrounding the church and shown on Westley's map of 1731 and Bradford's map of 1751.

The medieval pottery was of mainly local manufacture with evidence of regional imports provided by the Boarstall-Brill sherd. Also in keeping with Moor Street, Park street and Edgbaston Street, the main period of medieval occupation seems to be represented by 13th and 14th century pottery. The post-medieval pottery is also much the same as that recovered from other Birmingham sites. Sources for this pottery are more difficult to determine. Some may have come from Wednesbury where a number of post-medieval kilns producing Blackwares, coarsewares, redwares, yellow wares and Midland Purple type wares are known (Hodder 1992, Raikai 2000); others may have come from the Potteries. The slipwares are divided between those that appear to be from the latter area and a smaller number which are clearly different. A single wastered coarseware sherd from (2572) HB569 may point to a more local production site for some of the coarsewares, but this one sherd may be anomalous since there was no evidence for post-medieval pottery production from the other Birmingham sites. By the 18th century the finer table wares are most likely to have originated in the Potteries.

The functional composition of the assemblage and the likely status of those using the pottery, particularly in the post-medieval period, is difficult to determine with any accuracy. There was a single crucible fragment from (1564) HB200, of the straight-sided post-medieval type found at Park Street, but little else to indicate industrial ceramics or ceramics used in industrial processes.

The presence of fine table wares, e.g. white salt glazed stoneware and creamware, demonstrate the revolution in ceramic manufacture and use which occurred in the 18th century. On internal evidence alone it is impossible to know how quickly after their first manufacture white salt glazed ware and creamware began to appear in Birmingham. This has important implications for the status of the inhabitants in the area of St Martin's, since an early use of these wares would suggest high status

whereas their purchase some twenty or thirty years after their initial manufacture, when they were no longer so fashionable, would suggest a much lower status. However, there were a sufficient number of contexts where only white salt glazed ware appeared to suggest that it may have had a period of use before the development of creamware, which could indicate a comparatively early (and thus high status) use. In addition the presence of at least two teapot fragments in wares which ought to date to before the Commutation Act of 1784, would seem to support the idea of higher status inhabitants in the area of St Martin's in the 18th century.

Perhaps the most significant aspects of the 19th century pottery were that it was not plentiful and that much of it dated to the first half of the 19th century, with little which needed to be dated later than 1840.

8.11.3 Proposals

The pottery from St Martin's provides useful general comparanda for the pottery recovered from Park Street and Moor Street. However, its use is limited by the fact that it is all essentially residual. There is therefore no taphonomic information to be gained from further study of the pottery, although a spatial analysis of the different phases of pottery could prove useful for understanding the development of the pattern of burial, especially when coupled with other work on the funerary objects and coffin wood.

The pottery generally consists of small sherds, making the determination of vessel form difficult and precluding detailed work on form and function.

It is therefore recommended that no further work is undertaken on this assemblage.

Table 94: Spot dating of Pottery sorted by Human Burial Number

HB Number	Feature	Context	Date	Comments
2	106	1006	?18th c	
4	108	1013	19th c	Residual 13th-14th c pottery
15	117	1045	19th c	
20		1052	?19th c	
21	122	1058	19th c	
22	123	1061	e 19th c	
23	124	1064	19th c	
27	130	1077	19th c	Residual 13th-14th c pottery
34		1095	19th c	
45	145	1122	1720-1760/70	
48		1129	17th-18th c	
51		1139	18th c	
60	159	1168	(later 17th) 18th c	
66		1184	17th-18th c	
71		1197	late 18th-e19th c	
80	180	1211	1720-1760/70	
82		1241	19th c	
83		1227	18th c)	Residual 13th-14th c
86	182	1235	later 17th-18th c	
87	183	1237	1720-1760/70	
91		1252	?e 19th c	
93	187	1258	18th c	

94	190	1259	later 17th c (?e 18th c)	Residual 13th-14th and 15th-16th c
96	192	1267	late 1th-e18th c	
96	229	1381	late 18th c	
98		1271	1720-1760/70	
103		1285	13th-14th c	
106		1292	18th c	
107	201	1295	19th c	
108	202	1297	17th-e 18th c	
129	229	1381	e 19th c	Residual 13th c
132		1360	late 18th c	
133	224	1363	18th c	
142		1390	late 18th-e 19th c	
143		1393	18th c	
145	242	1427	later 17th-18th c	
146	234	1402	later 18th c	
152		1424	17th-18th c	
162		1449	17th-18th c	
165		1461	1720-1760/70	
171		1477	later 17th-18th c	
172	282	1480	later 18th c	
173		1487	1720-1760/70	
176		1489	later 18th c	
179		1504	17th-18th c	
181		1500	17th-18th c	
184		1510	(late 17th c) 18th c	
188	275	1522	1720-1760/70	
193		1433	(16th c) 17th c	
200		1564	post med	
201		1550	17th-18th c	
223		1605	13th-14th c	
225		1610	post 1830	
234		1636	19th c	
238		1647	later 18th c	
239		1650	17th-18th c	
242		1655	?19th c	
247		1668	(late 18th c) e 19th c	
249		1673	late 18th -e 19th c	
251	407	1678	1720-1760/70	
253		1688	17th-18th c	
271		1751	16th c	
279	506	1769	17th-18th c	
286	410	1793	19th c	
287	324	1796	later 18th c	
288		1800	18th c	
289	417	1803	late 18th c	
290	414	1777	later 17th-e/mid 18th c	
294	419	1819	18th c	
299		1830	19th c	
302	537	2048	17th c (early 18th c)	
305		1851	c 1740-60	
310	425	1860	18th c	
312		1919	19th c	
314	427	1906	1720-1760/70	
316	428	1913	?17th-18th c	

319		1917	late 18th c	
322	431	1925	later 18th ?e19th c	Residual 13th-14th c
323	432	1928	later 18th c	
331	435	1953	1720-1760/70	
343	523	1988	late 17th c	Residual mid 13th-14th c
346		2004	later 18th c	
352	440	2016	18th c	
353		2025	later 18th c	
366	445	2055	17th-18th c	
366	446	2055	1740-1760	
369	451	2222	later 17th-18th c	
371	537	2059	14th c?	
377		2074	later 17th-18th c	
378	448	2074	1720-1760/70	
385	552	2083	17th-18th c	
394	452	2109	late 17th-18th c	
399	435	2127	1720-1760/70	
399	455	2127	18th c	
407	457	2144	17th-18th c	
407	458	2145	(?late 18th) e19th c	
419		2155	?late 18th c	
426	469	2198	18th c	
434	474	2228	18th c	
439	478	2240	18th c	
442	481	2251	?19th c	
445	556	2257	18th c	
470	493	2321	18th c	
484		2358	e 18th c	
485	700	2377	18th c	
491		2378	17th c	
497		2392	later 18th c	
508		2409	13th-14th c	
509	705	2413	post 1830	
513		1910	17th c	
526		2445	mid-late 18th c	
539		2471	18th c	
541	602	2477	1720-1760/70	
551		2500	18th-19th c	
553		2503	later 18th c	
561		2551	c 1760?	
564	730	2549	m 13th-e14th c	
569		2572	later 18th c	
572		2578	1720-1760/70	
595		2631	18th c	
603		2650	post 1840	
604		2651	(late 17th) early 18th c	
616		2672	17th-18th c	
637		2701	17th c	
655		2778	17th-18th c	
661	338	2796	post 1830	
669		2814	19th c	
670		2565	17th-18th c	
675		2830	m 13th-m 14th c	
677	332	2835	later 18th c	

677	338	2836	13th-14th c	
678		2819	later 17th c (e 18th c)	
694		2870	late 17th-e 18th c	
695		2873	17th-18th c	
696		2641	later 18th c	
708		2996	mid-late 18th c	
725	633	2937	(late 17th) 18th c	Residual 13th c
730		2853	17th-18th c	
743	818	2994	c1650-1700/1725	
747	825	3022	mid 16th-17th c	
748	825	3025	18th c	
751	635	2976	18th c	
754		3003	(?early) 18th c	
759		3032	1720-1760/70	
764		3062	late 17th (e 18th) c	
765	825	3065	17th c	
765		3065	1720-1760/70	Residual 13th-14th c
770		3071	17th c	
771		3081	1720-1760/70	
776		3092	late 17th-early 18th c	
778	845	3137	1720-1760/70	
780		3105	first half 18th c	Residual ?13th c cooking pot
782		3110	later 17th-18th c	
788		3137	13th-e 14th c	
799		3157	m17th-e18th c	
805		3175	mid-late 18th c	
808			?16th c	
809		3170	mid-late 18th c	
814		3200	1720-1760/70	
815		3204	17th-18th c	
816	870	3206	mid-late 18th c	
817		3209	17th-18th c	
817		3210	e 18th c	
818		3213	1720-1760/70	
834	875	3250	(late 17th) e 18th c	
844		3272	late 18th-e19th c	
854		3301	17th-18th c	
857	880	3276	later 18th c	
871		3355	17th-18th c	
145/156?	242/245?	1437	later 17th-18th c	
16/18	118	1046	17th c (18th c)	
193?		1533	1720-1760/70	Could be 143
193?		1536	17th-18th c	
387/388	451	2092	later 17th-18th c	
	127	1070	19th c	"coffin mat"
	219	1354	c 1760	
	240	1416	c1760	Residual 13th-14th c pottery
	477	2235	late 17th-m18th c	
	761	2714	17th-18th c	
	802	2900	17th c	
	854	3105	late 18th (?early 19th c)	
		1009	late 18th-e 19th c	Residual 16th c
		1412	e 19th c	Residual medieval pottery
		1777	post 1720	

		2165	18th c	
		2248	1720-1760/70	
		2510	17th-18th c	
		2905	e 19th c?	
		2986	?e 18th c	

8.12 Animal Bone by Emma Hancox

A small quantity of bone (571g) was hand collected from the excavations at St Martin's. No bulk samples were taken for sieving. Apart from one context (1919) all the bone derives from the fills of grave cuts. Context 1919 comes from the inside of a post-medieval vault.

Except for one rabbit and one dog bone, the species represented consisted of cow, sheep/goat, pig and chicken. Chop marks were visible on three pig bones (contexts 2478 and 2541). As bones from modern species were identified in several contexts and due to the nature of graveyard sites, the bulk of the material is probably residual.

The assemblage is of little archaeological significance due to its small size and the problems of residuality. Therefore no further work is recommended.

8.13 The Plant Remains by Marina Ciaraldi

8.13.1 Description

Fourteen hand-collected samples of plant material were recovered from some of the burials at St. Martin's. The samples were assessed in order to establish whether the plant remains were identifiable, and to determine their potential in understanding the funerary practices associated with the burials. The organic remains from the fourteen samples were preserved as waterlogged or dried, and their anatomical features were generally well identifiable. The samples are dated roughly to the 18th – 19th century and they all come from well-sealed contexts.

The plant remains identified from the samples are listed in Table 95. They consist mainly of leaves or wood fragments in form of sawdust or wood shavings.

8.13.2 Recommendations for future work

The good preservation of the fragments of leaves suggests that, with the exception of those belonging to the grass family (Gramineae), they can all be easily identified. Most of the leaves, except those belonging to the Gramineae, were part of wreaths or floral offerings. In that respect, their identification can provide important information about the status or sex of the dead person or temporal changes in the funerary practices. The leaves of Gramineae, on the other hand, represent stuffing material and, therefore, they are not strictly associated with funerary practices. Considering the problems posed by their identification and their limited contribution to the general study of the funerary practices at St. Martin's, it is suggested that no further analysis

should be undertaken. On the contrary, leaves recovered from wreaths and floral offering (highlighted in Table 95) deserve full identification.

Table 95: List of samples assessed for plant remains

Vault 5 F0416			
HB277	1820		Grass leaves. 1 piece of textile with holes (probably connected to false teeth)
HB297	1827		Leaves of Gramineae and small fragment of wool cloth (separated)
HB304	1794	Sample 112	Leaves of heather's family plant
HB333	1955	Sample 129	Leaves of <i>Prunus</i> sp.? Lots of fly pupariae
HB573	2580	Sample 218	Sawdust and hairs. Fly pupariae
HB607	2653	Sample 226	Sawdust and hairs. Fly pupariae
Vault 8			
HB226			Box leaves (<i>Buxus sempervirens</i> L.) Fragments of ribbon and wool cloth. Human tooth
HB233	1631		Box leaves (<i>Buxus sempervirens</i> L.). Fragments of wood and ribbon
Vault 10B			
HB370	1873	Sample 143	Large larvae cases. A small fragment of ribbon
Vault 23			
HB681	2844	Sample 234	Small branch of box (<i>Buxus sempervirens</i> L.)
Vault 30			
HB792	3141	Sample 252	Wood shavings
Vault 36			
HB262	1701		Body fat
HB749	3027		Box leaves (<i>Buxus sempervirens</i> L.)
Other			
HB321	1922	Sample 116	Body fat (from stomach area)

8.14 Insect remains by David Smith

The hair samples from St. Martin's were scanned for insect remains, particularly with a view to detecting the presence of human ecto-parasites.

In terms of the Diptera larvae present, there were large numbers of small phorids (the scuttle flies), probably of the genus *Megaselia*. This is a large group of flies, which has a wide range of life histories, and most species occur in many types of mouldering deposits.

In terms of the Coleoptera (beetles), there were often several individuals of *Rhizophagus parallelocolis* Gyll. This is one of the few beetles to have a common name; it is called the 'graveyard beetle' and is common on corpses in coffins buried at some depth. Usually it is associated with the later stages of the decay of corpses. Also present were a few individuals of *Philonthus* spp. This genus is also associated with a wide range of decaying materials, where it is thought to prey on fly larvae and other small arthropods.

The insect fauna recovered is exactly of the sort that one would expect to find associated with corpses in the last 'dry bone' stage of decay. Unfortunately no human ecto-parasites were noted.

No further work on this material is recommended.

9.0 UPDATED PROJECT DESIGN by Megan Brickley and Gary Coates

9.1 Background

The excavation of the churchyard at St. Martin's, Birmingham, was designed to provide information on health, lifestyle and life expectancy of the inhabitants of Birmingham's oldest parish from the medieval through to the post-medieval period. It was also designed to provide information about contemporary burial practices. Over the course of the excavations, it became apparent that the evidence from the burials would provide a much more detailed insight into life in the heart of post-medieval Birmingham.

A total number of 857 burials was recorded and excavated, along with 35 burial vaults. The available dating evidence suggests that the majority of these burials date to the 18th and 19th centuries and promise to be directly comparable with populations studied in London, Bristol and elsewhere in Britain. At a local scale, there were a number of legible coffin plates that provide the starting point for reconstructing detailed family histories of some of the middle class people who worked and died in St. Martin's. A range of occupations and professions is represented, which typify aspects of life in the 'workshop of the world'.

The range of burial structures, coffin material and burial attire uncovered will provide insight into burial ritual and the funerary industry in Birmingham during this period.

9.2 Summary Statement of Potential

The excavations have provided a wide range of evidence with which to reconstruct aspects of life in the parish of St. Martin's in the 18th and 19th centuries. A more detailed examination of the stratigraphic sequence and dateable artefacts may provide secure dating for medieval deposits, although the initial findings of this assessment indicate that this is unlikely. Any identification of medieval burials will be important in establishing the sequence of the early development of Birmingham and the role of St. Martin's in this.

Documentary research will provide a clearer picture of the development of the parish. The detailed family histories of the named sample will provide evidence of the type of people living, working and dying in the parish. The physical anthropology will add to this picture, with details of lifestyle that are not always available in the documentary sources - the health of the population, diet and possibly even evidence of population movement into the city from the country, fuelled by the ever expanding nature of industrialisation in this period. The documentary research will give a unique insight into the middle-class Victorian family in Birmingham. Already, initial research into the Warden/Browetts has shown how the middle class had developed from the beginning of the 19th century to its end; from shop keepers to factory owners and professionals, moving from the streets of St. Martin's to the wealthy suburbs of Edgbaston. The burial vaults themselves reflect the changing social and economic status and aspirations of such families. These people are the very essence of the whole development of Birmingham at this time.

The evidence for life in St. Martin's is equally matched by the evidence for death here. How you were buried varied enormously in the 18th and 19th centuries. Status afforded you a brick-lined grave or maybe a vault for you and your family, possibly an ornately decorated, felt-covered lead coffin. Then there was the stylistic *depositum*, so that you can be remembered for prosperity. On the other hand, if you were poor you may be squeezed into the ever shrinking, over-crowded churchyard with little practical chance of 'resting in peace'. A simple wooden coffin, or maybe just a shroud, was all that was afforded, and burials were soon disturbed by the pressure on space. The potential to expand the details of burial practices and the funerary industry in Birmingham is great, as has been demonstrated by the assessment of the coffin wood, fittings and textiles in this assessment document. There was not a wide range of personal items recovered from the burials, as to be expected from a Christian graveyard, but those that were recovered are often poignantly intimate and revealing of the values of the individuals or their relatives.

The potential of the archaeological evidence, human remains, artefacts and documentary sources to reconstruct life and death in 18th and 19th century Birmingham is very high. In fact, its potential for national and international comparison is also very high, and the projected publication will hopefully provide a springboard for others to pursue this research. The focus of our research will be at a local, regional and national level.

9.3 Aims and Objectives

The original aims of the archaeological excavations still remain valid (see Section 4.0, above), as do those updated for the assessment of documentary evidence (see Section 8.3, above).

The general aim of the post-excavation programme will be to integrate the results of the archaeological excavations into a thematic study of post-medieval life in the parish of St. Martin's. This will also include a study of burial practices and the Birmingham funerary industry in this period. This will culminate in the publication of a monograph, which will be accessible to the general reader, local historian and academic alike. Specific aims of the post-excavation programme will be:

- To record and make available all skeletal metric data to enable academic comparison after re-burial of the remains.
- To investigate the evidence of health, diet, lifestyles and demography in St. Martin's from the skeletal remains.
- To investigate the evidence of lifestyles from the documentary sources.
- To research the details of named individuals and families, identifying occupations, lifestyles and other information that contributes to our understanding of life in the parish in this period.
- To integrate results of recording the churchyard boundaries and church foundations with the known documentary evidence.
- To examine the evidence from the archaeological excavations to enhance our understanding of the use and development of the churchyard.

9.4 Publication Synopsis

The results of the excavation and associated research and analysis are to be integrated and published as an Oxbow Monograph.

Working Title

'Excavations of the Churchyard of St. Martin's in the Bull Ring, Birmingham. 2001'
by Jo Adams, Megan Brickley and Richard Cherrington,
with contributions by Lynne Bevan, Marina Ciaraldi, Rowena Gale, Emma Hancox,
Annette Hancocks, Mike Hodder, Steve Litherland, Mike Richards and Penelope
Walton Rogers.

Forward -- Birmingham Alliance & City Council (500 words)

Summary/Overview - Mike Hodder, Birmingham City Council Planning
Archaeologist

Acknowledgments (500 words)

Part 1 The Excavation (2500 words, 2 Figures, 5 Plates)

Site Location and Description
Planning and Development Background
Aims of the Excavation
Method of the Excavation
Skeletal Excavation and recovery
Historical Research

Part 2 The Parish (10,000 words, 10 Figures, 5 Plates, 5 Tables)

Development of The Parish
The History of the Church and Churchyard
Church Foundations and boundary wall
People of the Parish
Life in the Parish

Part 3 The People: Physical Anthropology (15,000 words, 12 Figures, 30 Plates, 15
Tables)

Introduction – sample selection
Demography
Metric Data – Infant, Juvenile, Adult
Non-Metric Data
Population Movement and Migration
Health and Disease - Nutritional Disease
 Dental Health
 Trauma
 Pathological Conditions
Lifeways and Interpretation

Part 4 The Families (15,000 words, 10 Figures, 20 Plates, 15 Tables)

The Browett/ Wardens – anthropology and documentary research

The Haines– anthropology and documentary research

The Ainsworths– anthropology and documentary research

The Homes– anthropology and documentary research

The Sansoms– anthropology and documentary research

Individuals– anthropology and documentary research

The family in Victorian Birmingham

Occupations

Social and Economic Status

Part 5 The Dead (20,000 words, 20 Figures, 30 Plates, 20 Tables)

Burial Structures

Coffins

Coffin Fittings

Wreaths

Funerary Textiles

Funeral Attire

Grave Goods

Burial Practices

Funerary Industry in Birmingham

Appendices (CD Rom)

Appendix 1 Skeletal Metrical Data

Appendix 2 Skeletal Inventory

Appendix 3 Specialist Report Empirical Data

Totals: 63,500 words, 54 Figures, 90 Plates, 55 Tables, 1 CD Rom.

9.5 Post-Excavation Programme

Contextual Analysis

Stratigraphic Analysis & Finalising Phasing	R.Cherrington	2
Updating Database	R.Cherrington	1
Library Research	R.Cherrington	5
Preparation of 'Burial Structure' Report	R.Cherrington	5
Preparation of 'Coffins' Report	R.Cherrington	5
Preparation of 'Burial Practices/ Funerary Industry'	R.Cherrington	5
Preparation of 'Building Recording' Report	R.Cherrington	3
	S.Litherland	2
Preparation of drawing roughs	R.Cherrington	2
Preparation of Site Illustrations	N.Dodds	5
Preparation of Plates	E.Newton	5

Skeletal Analysis

Recording of skeletal remains (First Assistant)	H.Berry	12 months
Recording of skeletal remains (Second Assistant)	G. Western	9 months
Lead Isotope Analysis: report	M.Richards	10
Analysis	M.Brickley	16
Preparation of Report	M.Brickley	30
Illustrations	N.Dodds	2
Plates	G.Norrie	5

Documentary Research

Documentary Research: Families	J.Adams	30
Historical Research	J.Adams	20
Preparation of 'The Families' Report	J.Adams	10
Preparation of 'The Parish' Report	J.Adams	10
Illustrations	N.Dodds	2
Preparation of Plates	E.Newton	1

Specialist Reports

Co-ordination of Specialists	A.Hancocks	1
Coffin Wood: analysis & report	R.Gale	3
Coffin Furnishing: analysis	E.Hancox	5
Coffin Furnishing: report	E.Hancox	5
Coffin Furnishing: illustration	N.Dodds	1
Coffin Furnishing: plates	G.Norrie	1
Small Finds: analysis & report	L.Bevan	6
Small Finds: illustration	N.Dodds	2
Small Finds: plates	G.Norrie	2
Textiles: analysis & report	P.Walton Rogers	14
Textiles: illustration	N.Dodds	2
Plant Remains: analysis & report	M.Ciaraldi	3
Review Meeting	November 2002	

Project Management

Overall project management	S.Buteux	3
	G.Coates	5

Integration of Contributions/ Specialist Reports

Review Meeting	July 2002	
Preparation of Introduction	G.Coates	2
	M.Brickley	1
Integration of 'The Parish' chapter	J.Adams	2
	S.Litherland	1
	G.Coates	2
Integration of 'The People' chapter	M.Brickley	1
	J.Adams	1
	S.Buteux	1
Integration of 'The Families' chapter	J.Adams	2
	M.Brickley	1
	G.Coates	1
Integration of 'The Dead' chapter	A.Hancocks	3
	S.Buteux	2
	R.Cherrington	1

Preparation of First Draft

Finalising illustrations	N.Dodds	1
Finalising Plates	E.Newton	2
Preparation of first draft of text	G.Coates	3
	S.Buteux	2
Editing of first draft	S.Buteux	3
Preparation of Appendices/ CD Rom	E.Newton	5
Amendments to text	J.Adams	1
	M.Brickley	1
	R.Cherrington	1
Amendments to Illustrations	N.Dodds	0.5
Amendments to Plates	E.Newton	0.5

Publication

Proof Reading	G.Coates	1
	M.Brickley	0.5
Preface & Reference	M.Hodder, Birmingham Alliance	3
Preparation of Camera Ready Text	tbc	5
Preparation of Site/Research Archive	K.Muldoon	2
Deposition of Archive	K.Muldoon	1

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Dr. Mike Hodder, Birmingham City Council Planning Archaeologist, monitored the excavations on behalf of Birmingham City Council.

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Figures

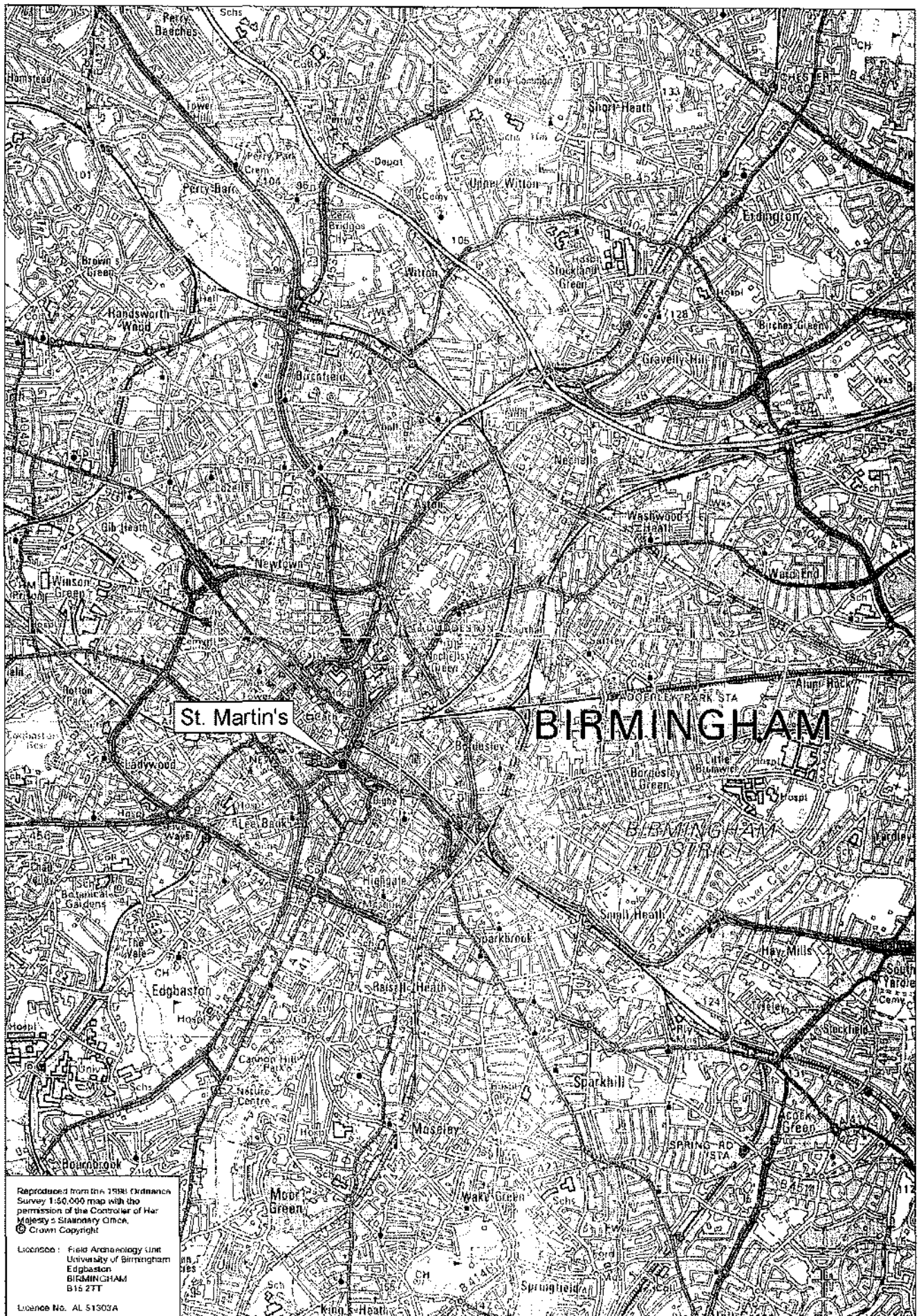


Fig. 1



Fig. 2

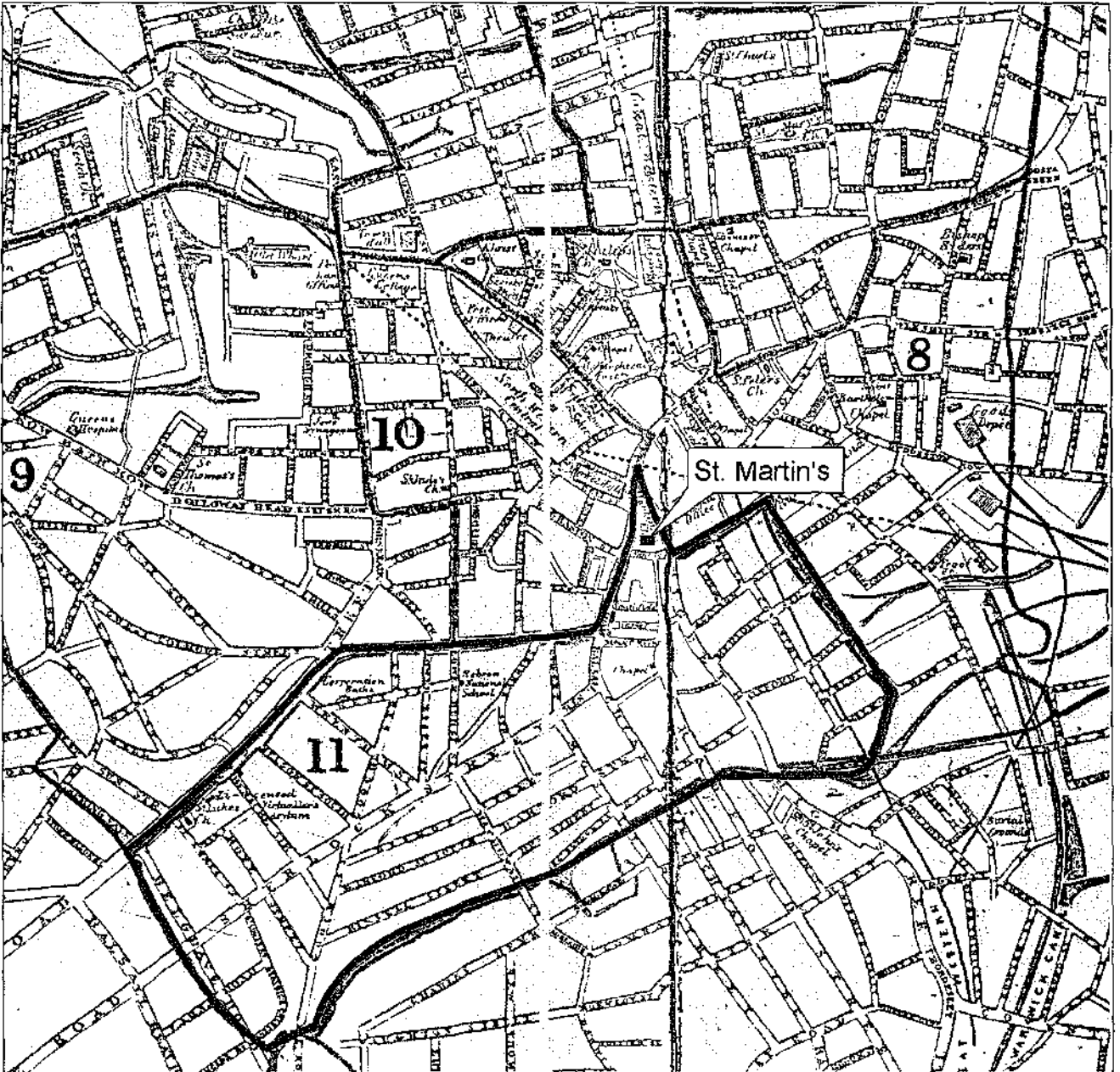


Fig. 3



Fig. 4

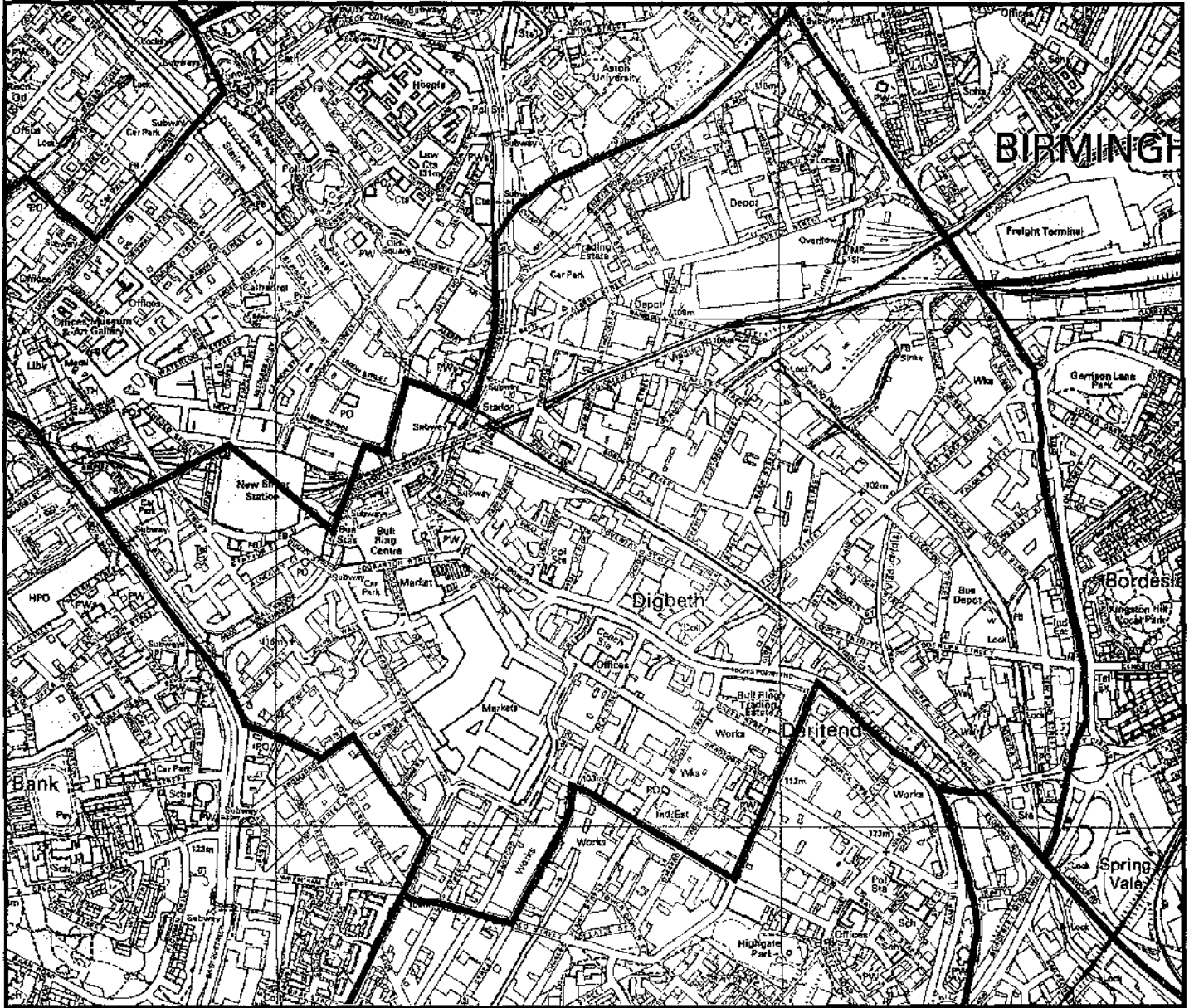


Fig.5

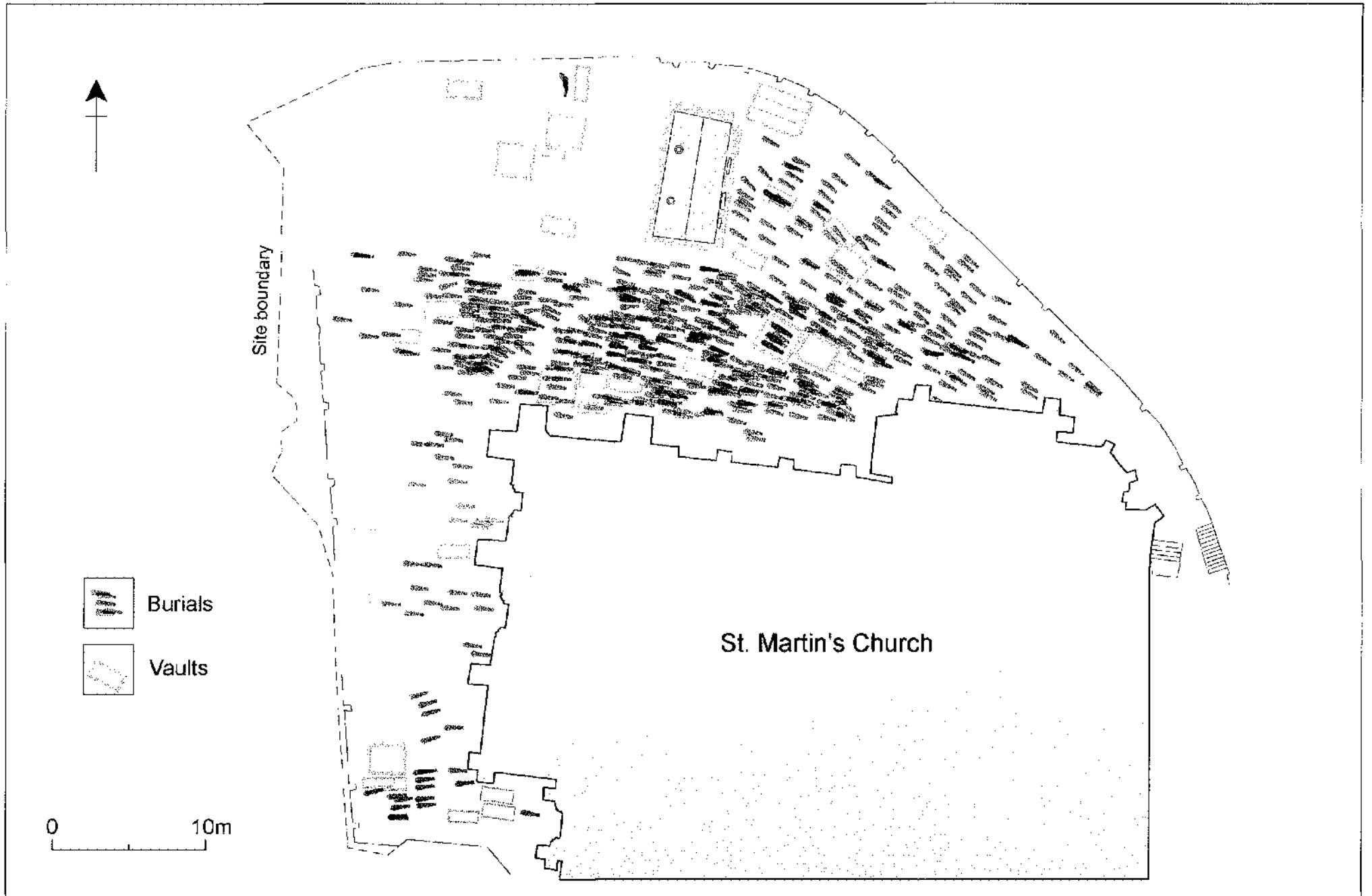


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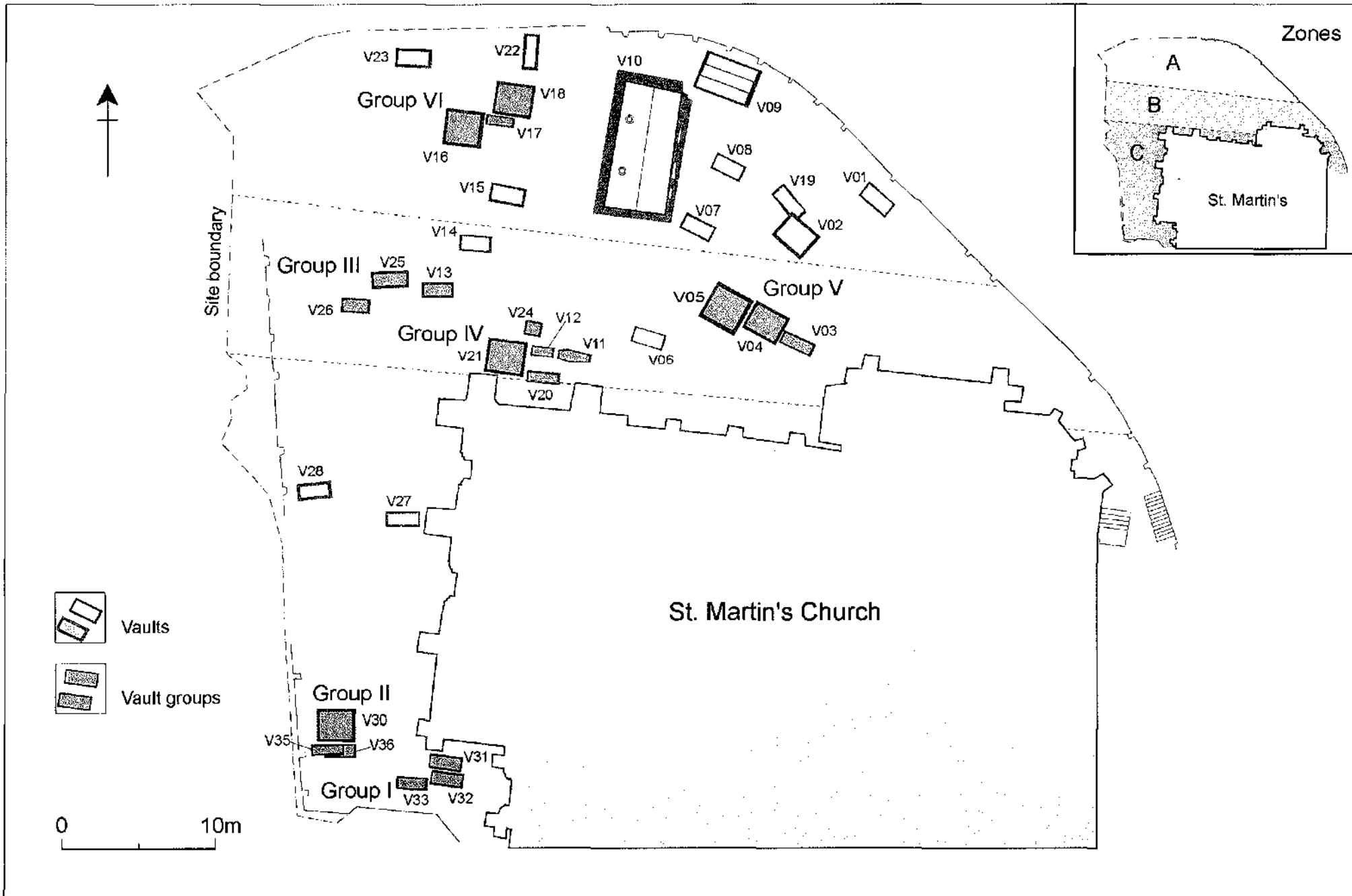


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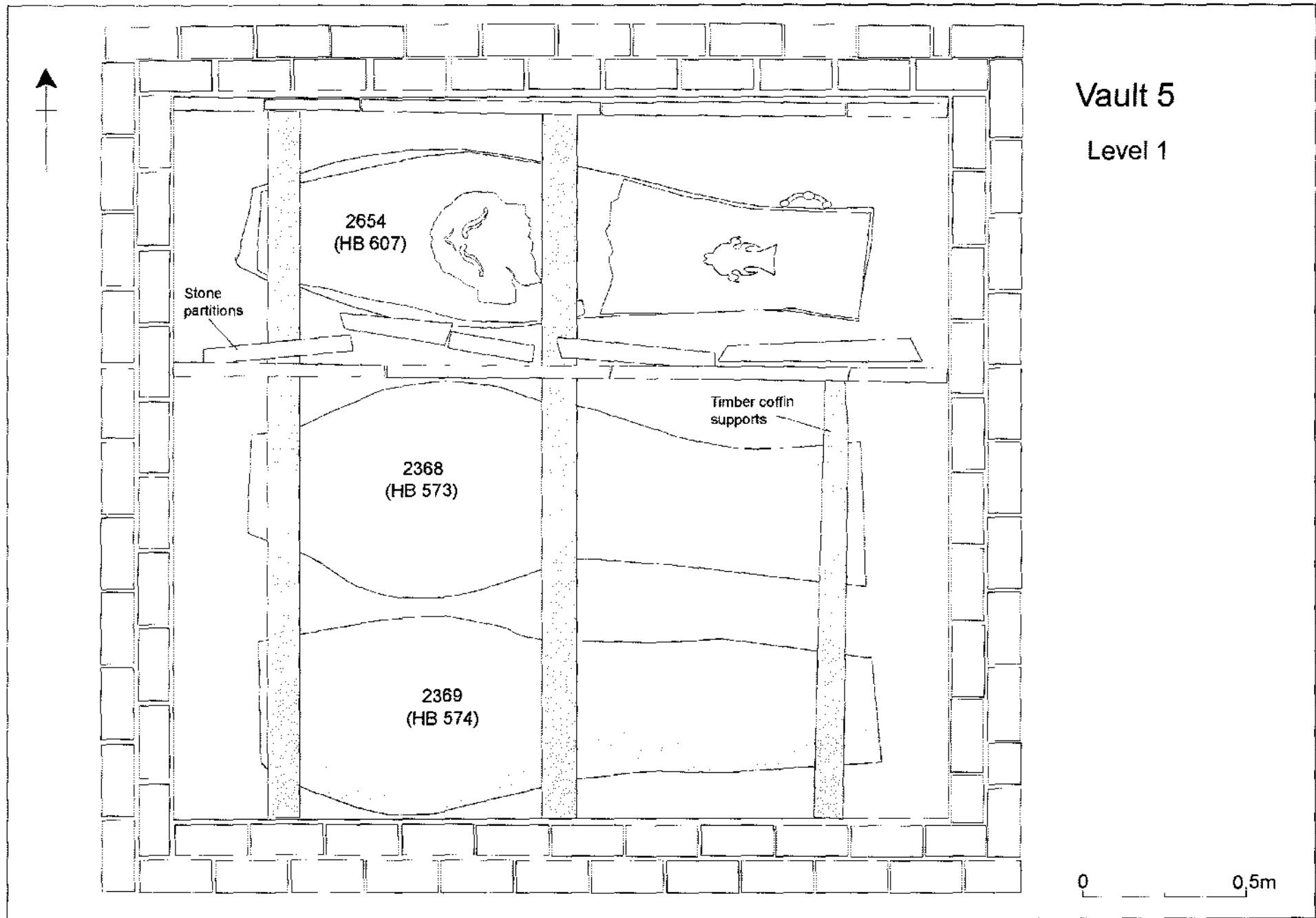


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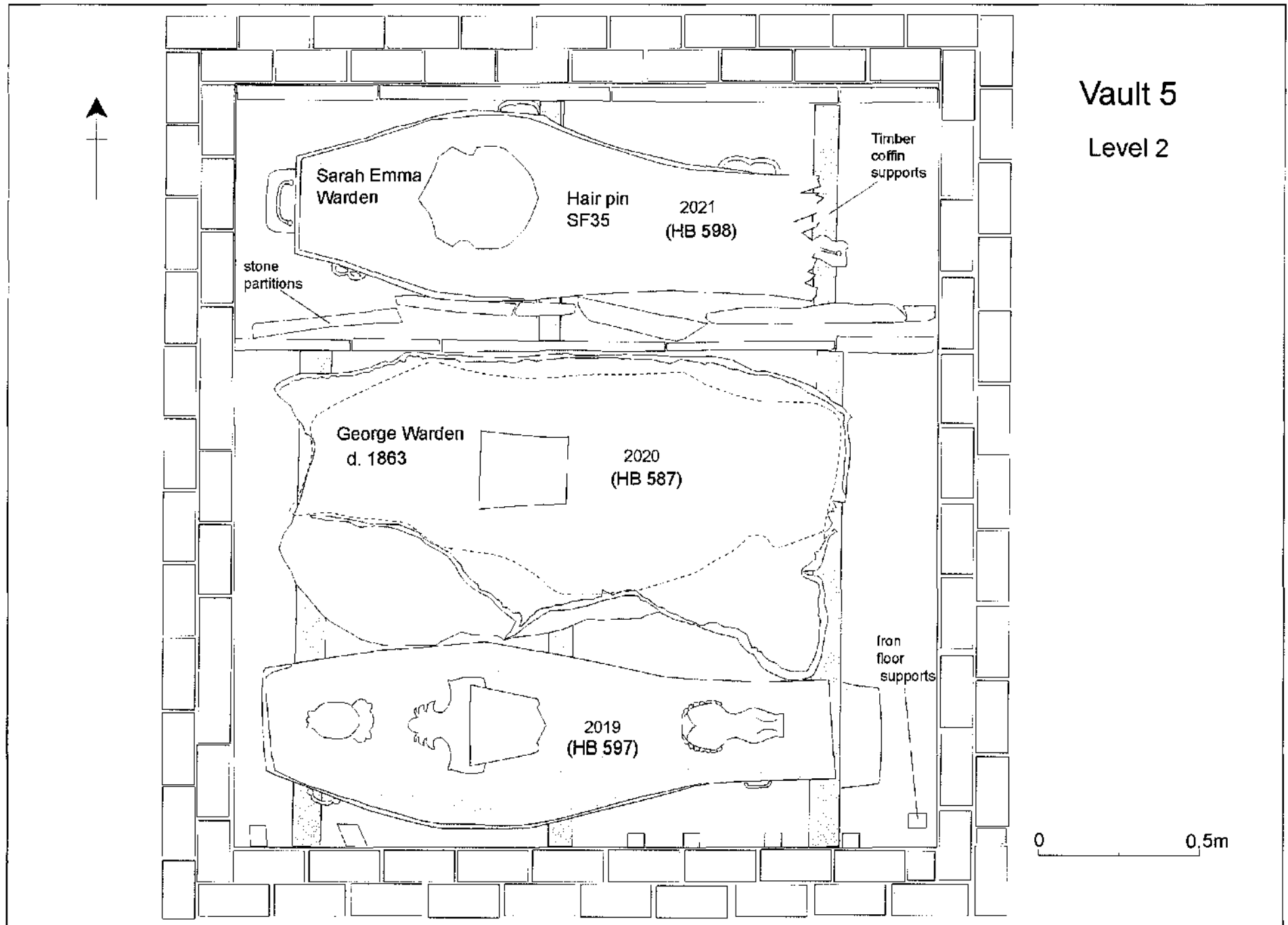


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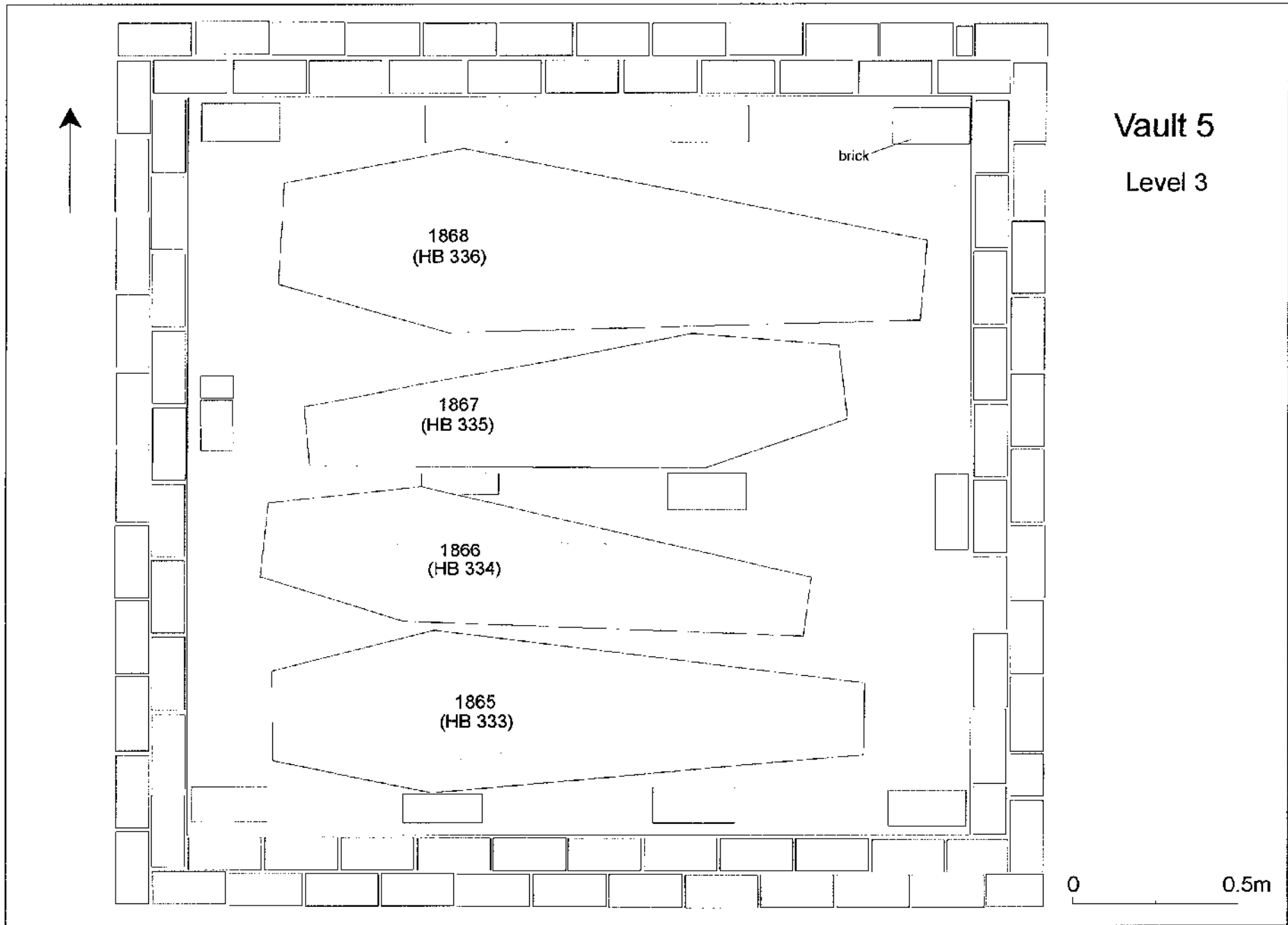


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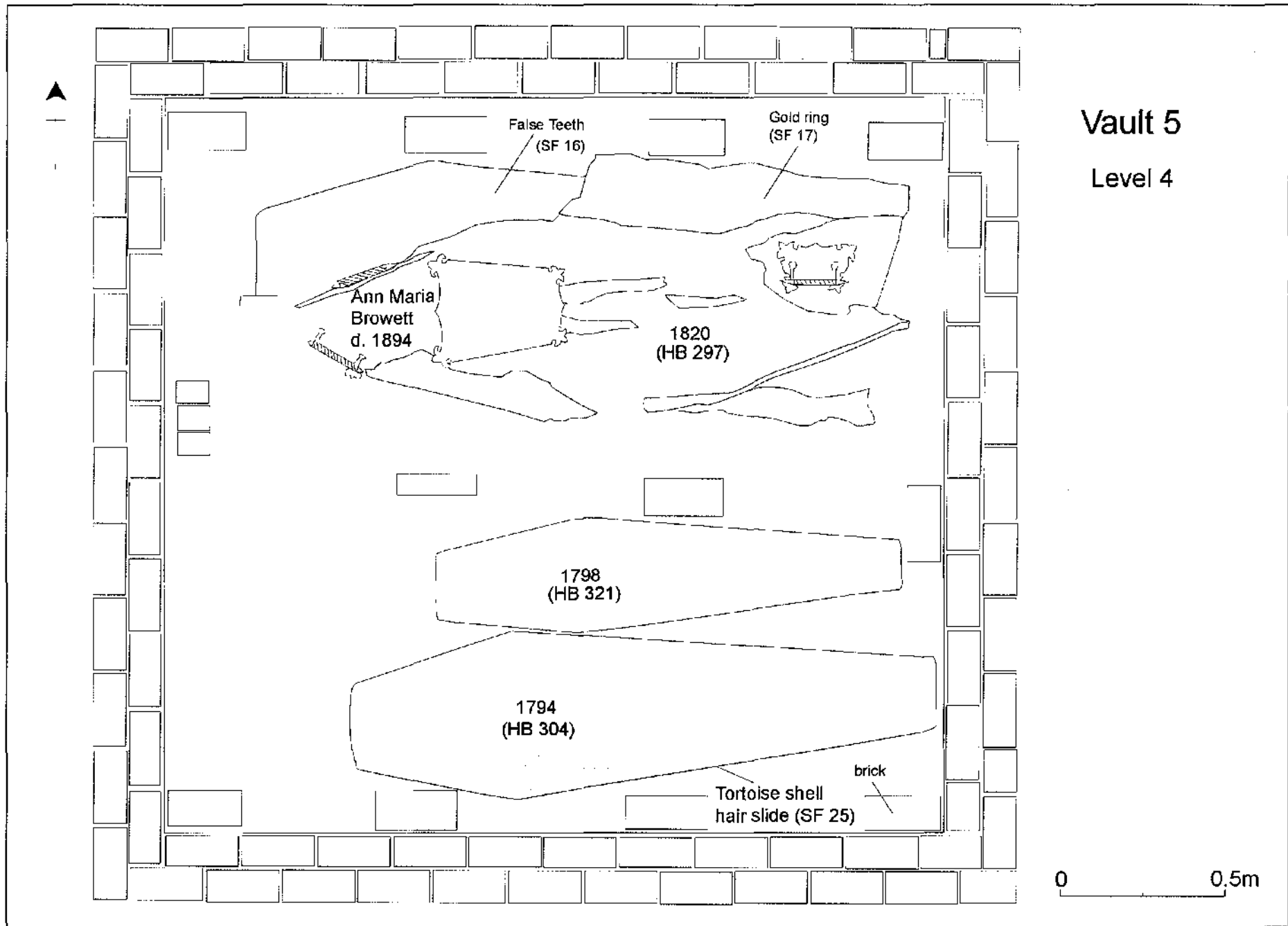


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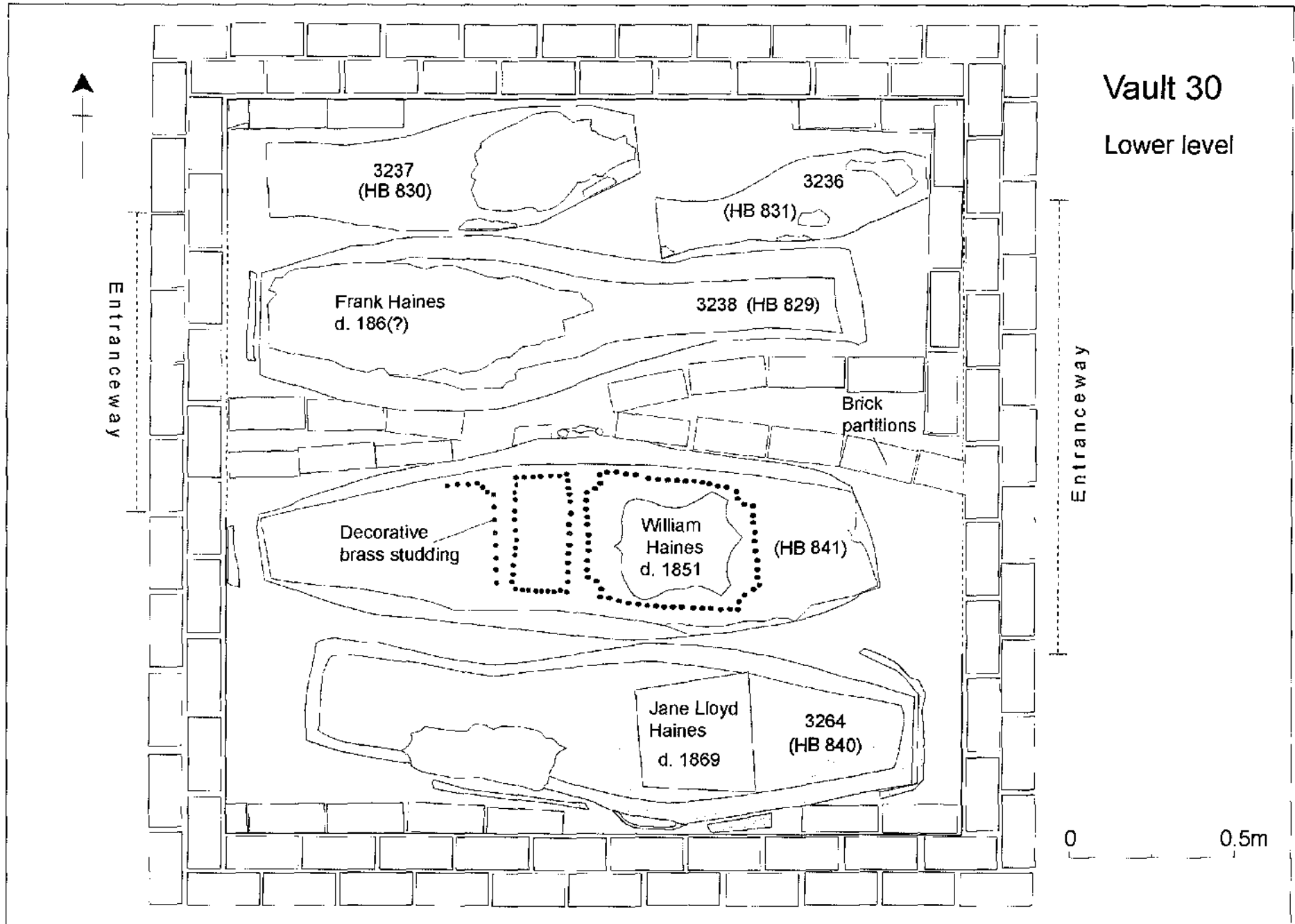


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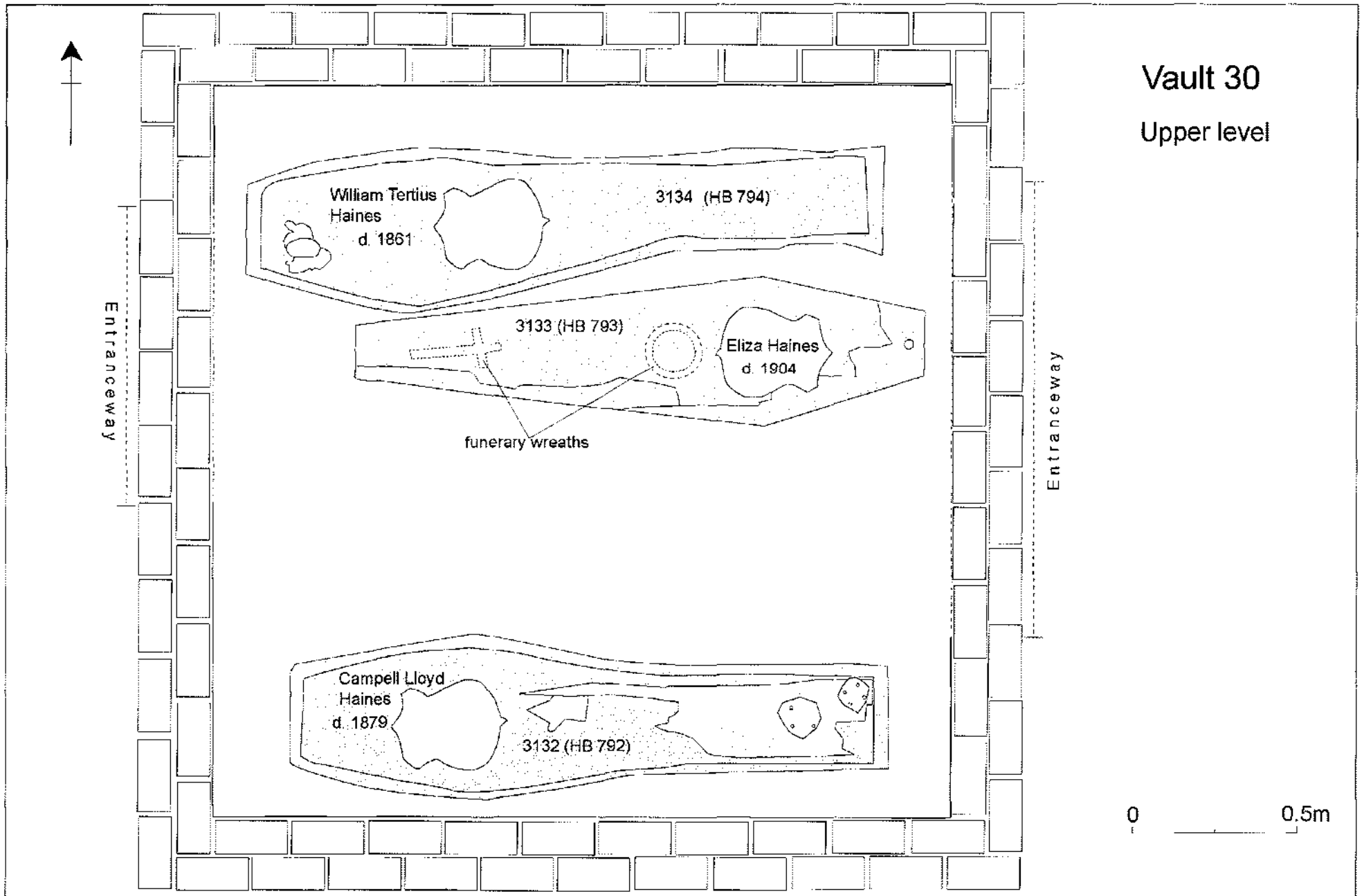


Fig. 13

Vault 10 plan

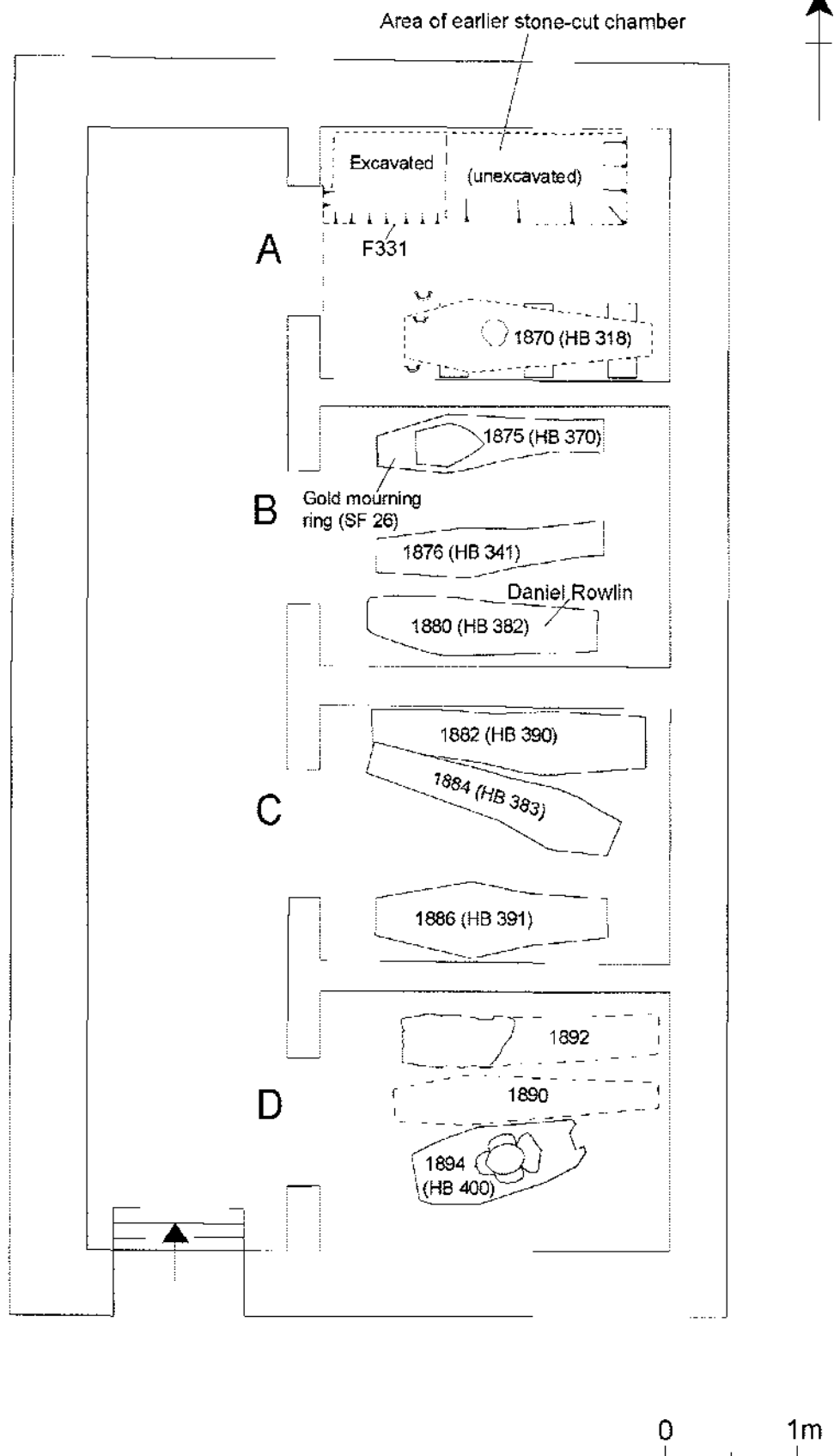


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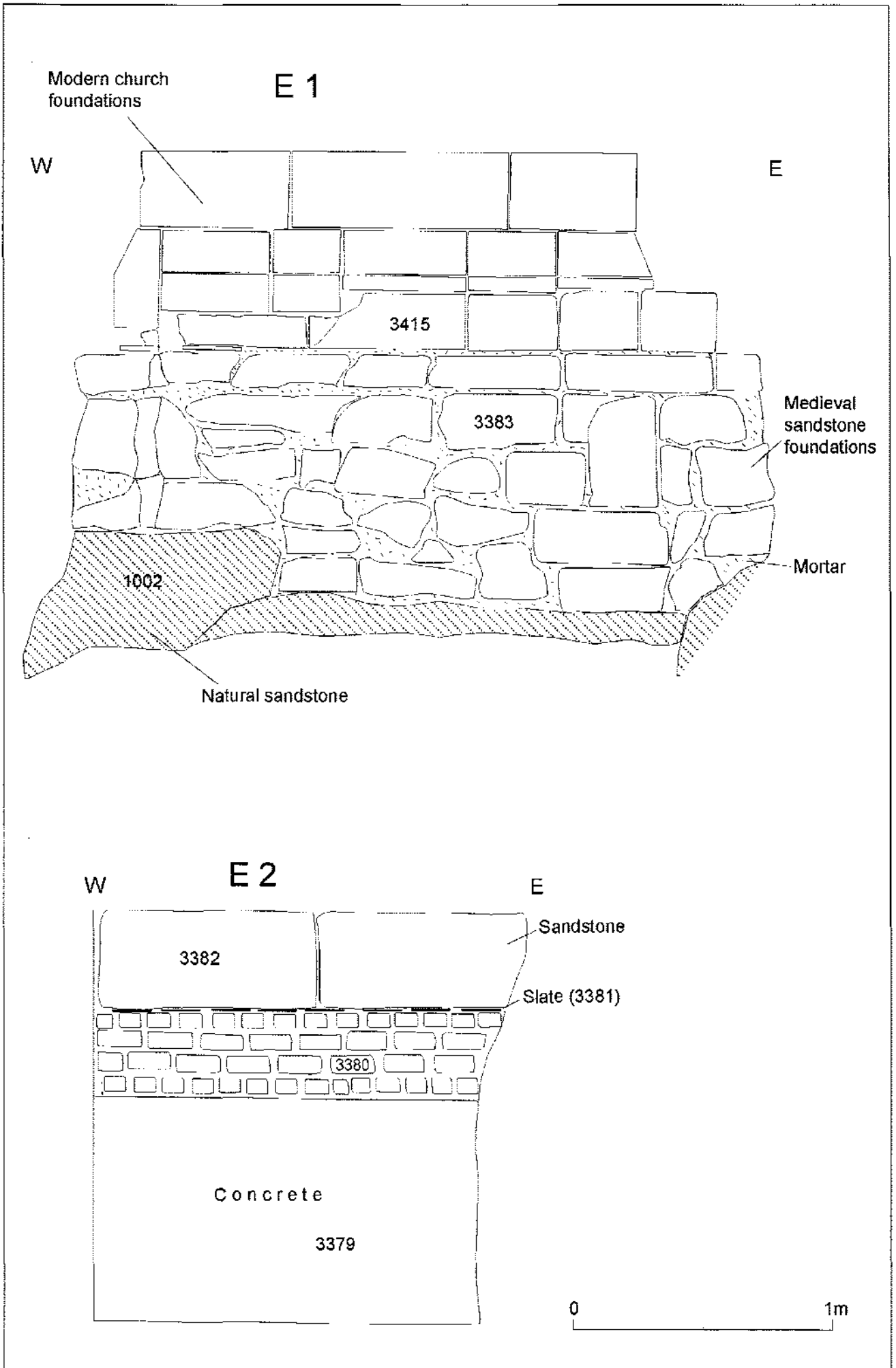
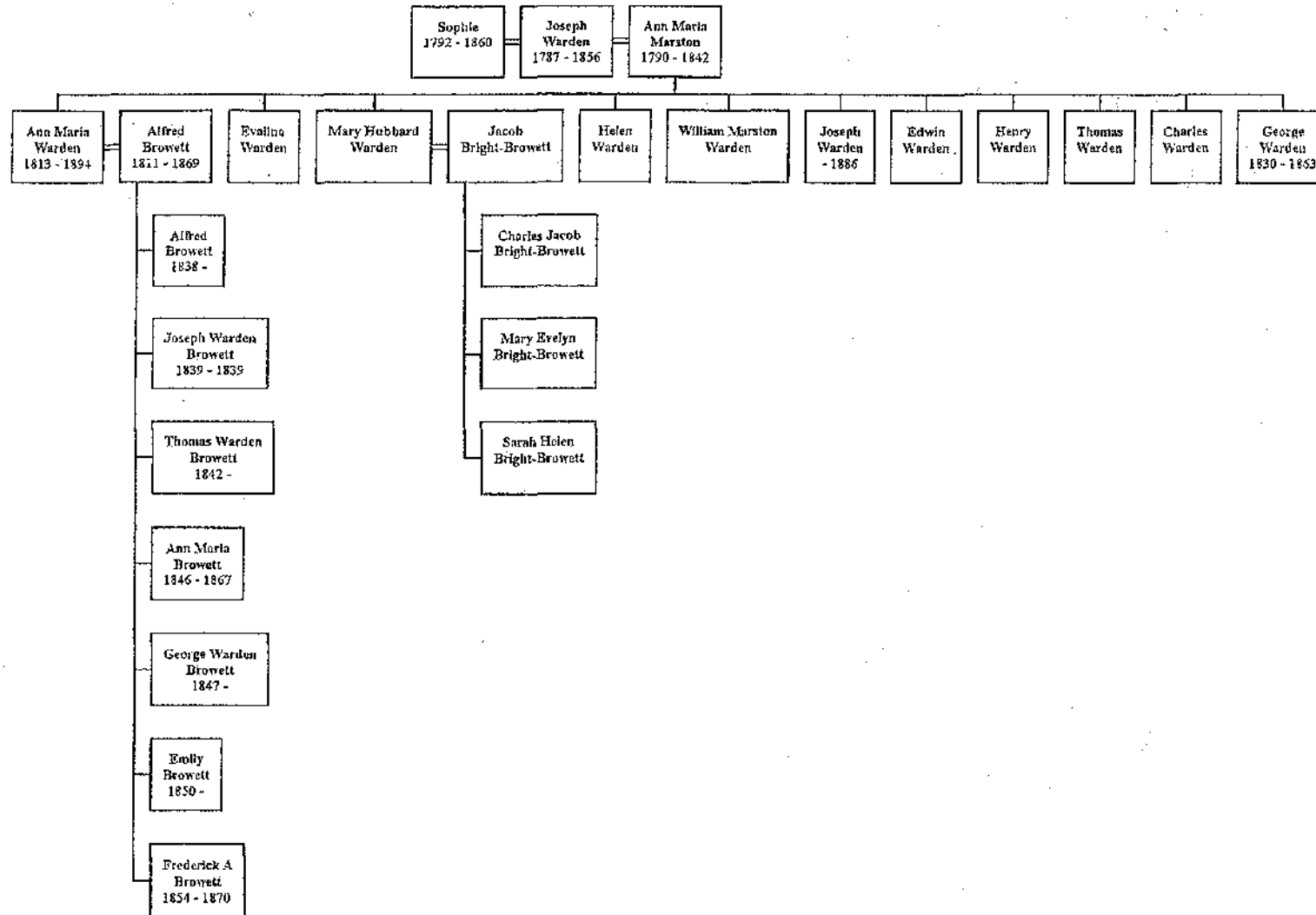


Fig. 15

Descendants of Joseph Warden



Descendant tree of Joseph Warden showing the connection by marriage to the Browett family.

Fig. 16

Plates

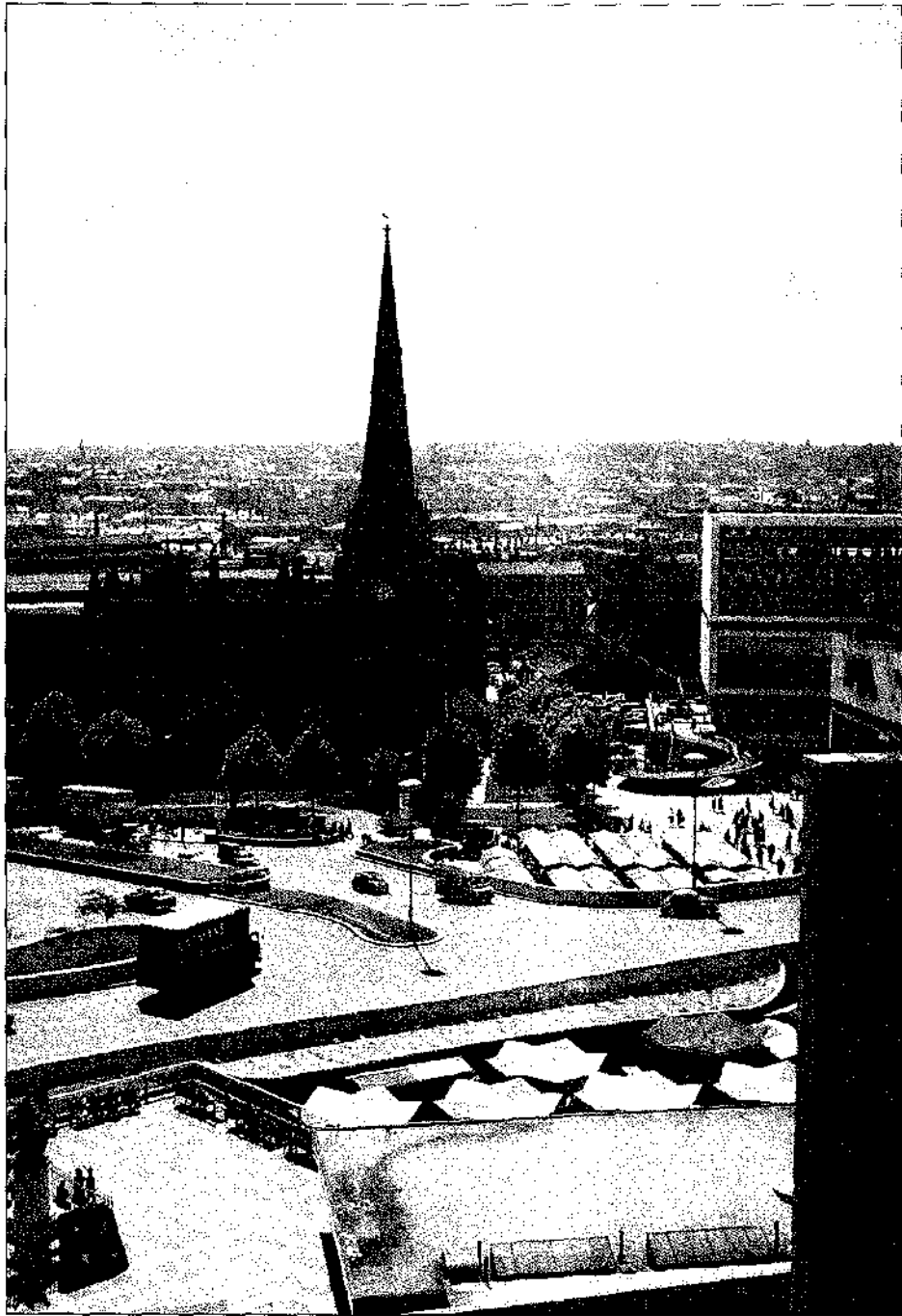


Plate 1.



Plate 2.

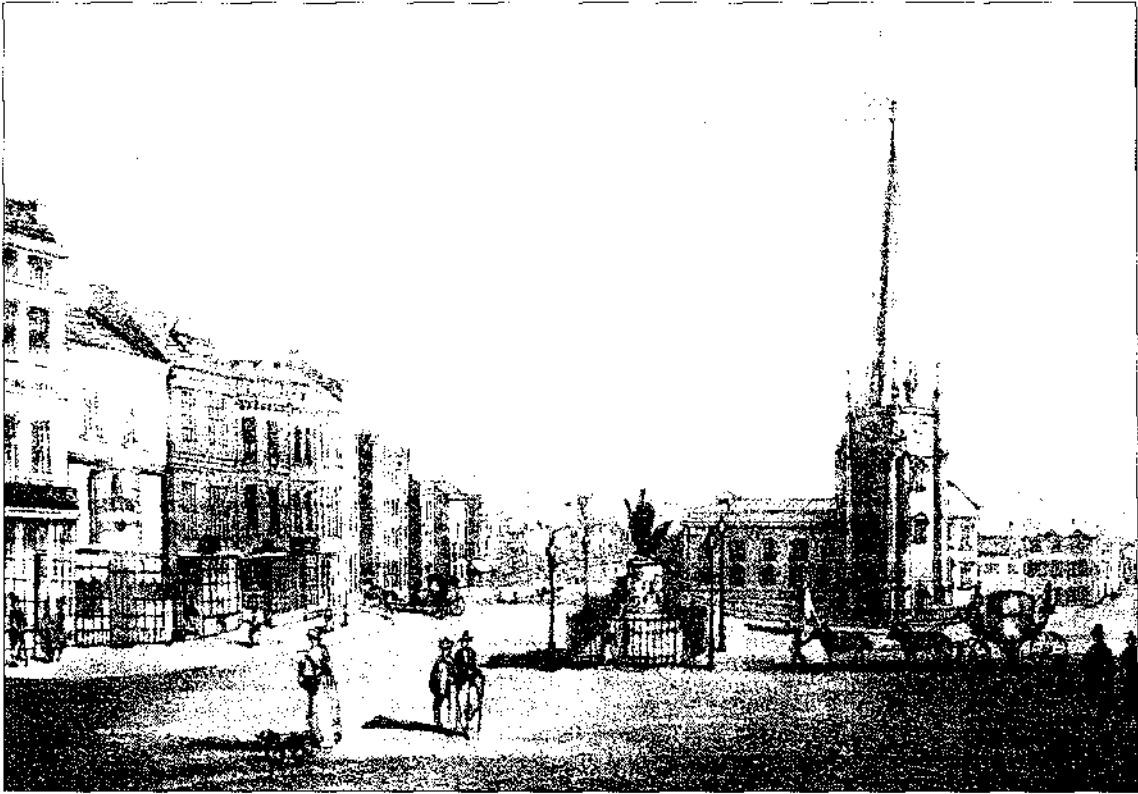


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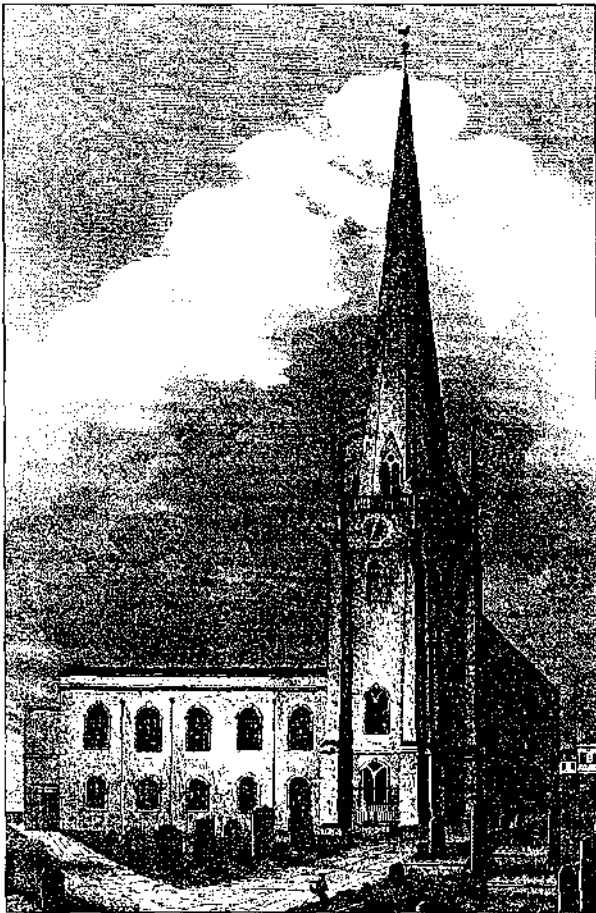


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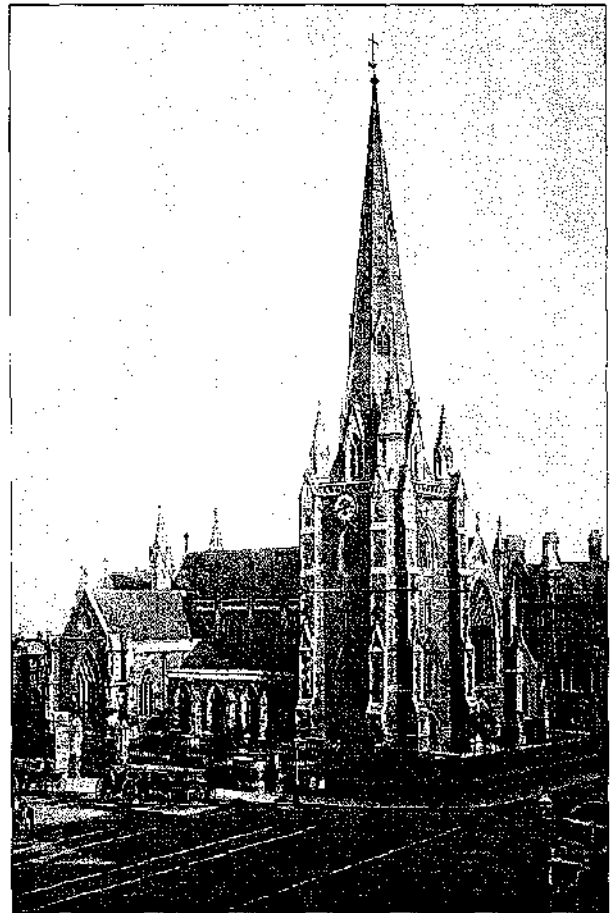


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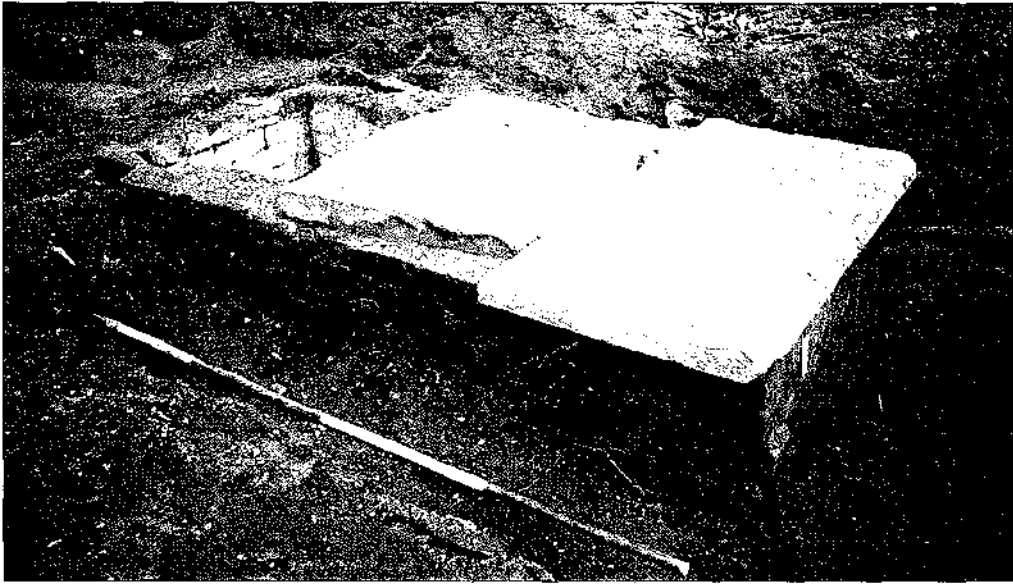


Plate 6.



Plate 7.



Plate 8.

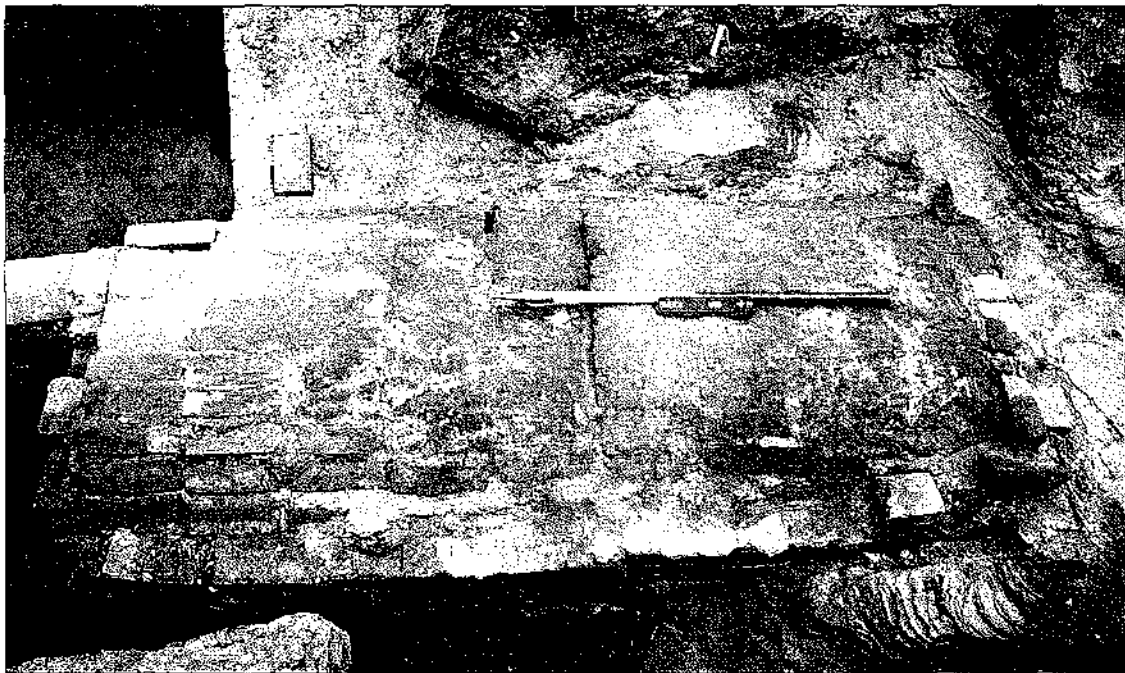


Plate 9.



Plate 10.



Plate 11.

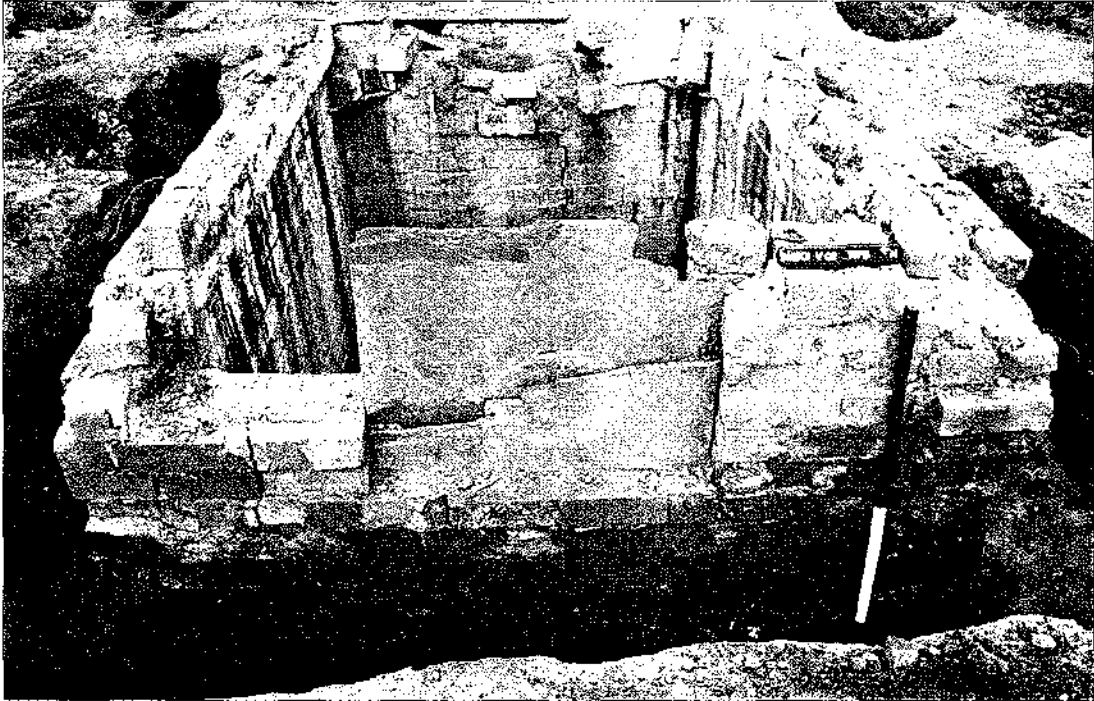


Plate 12.



Plate 13.



Plate 14.



Plate 15.

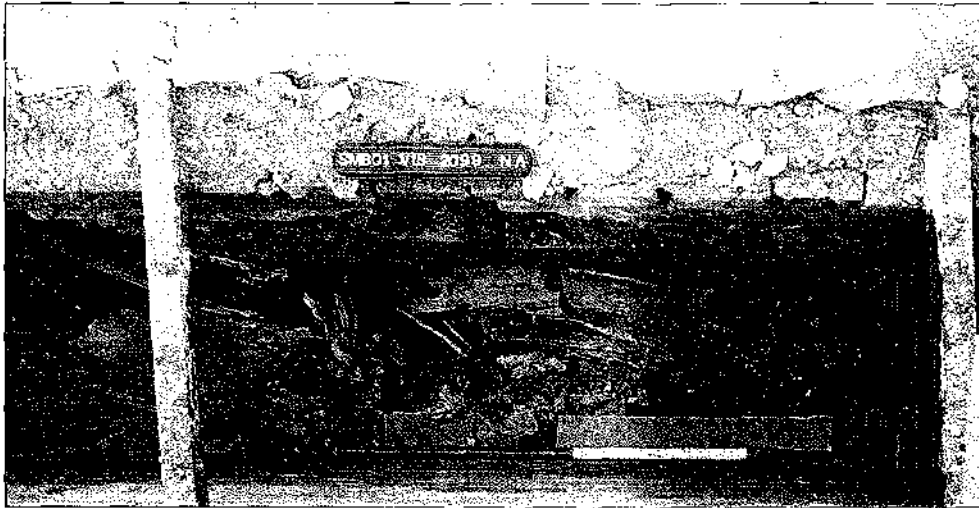


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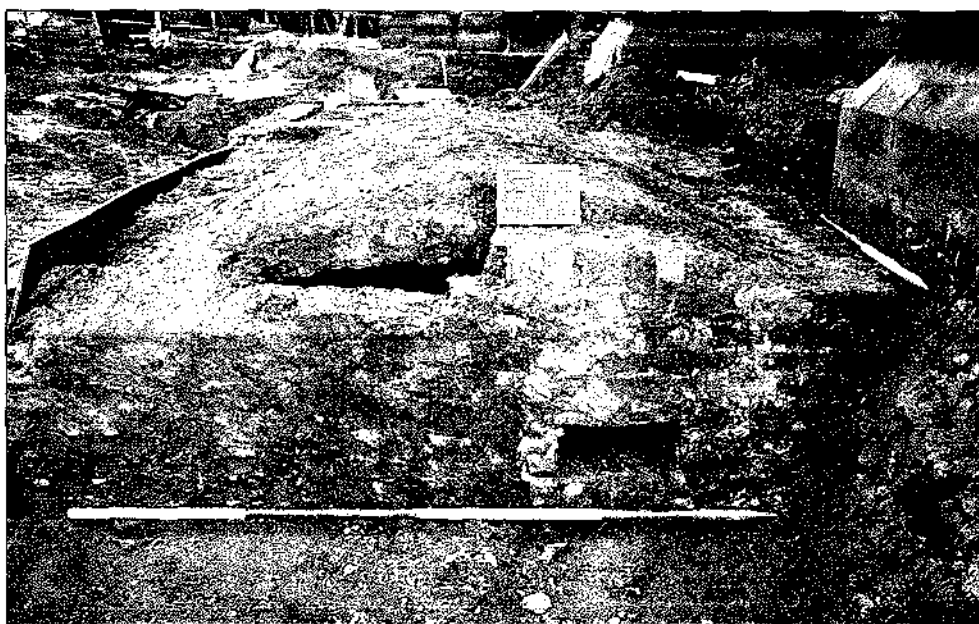


Plate 17.



Plate 18.

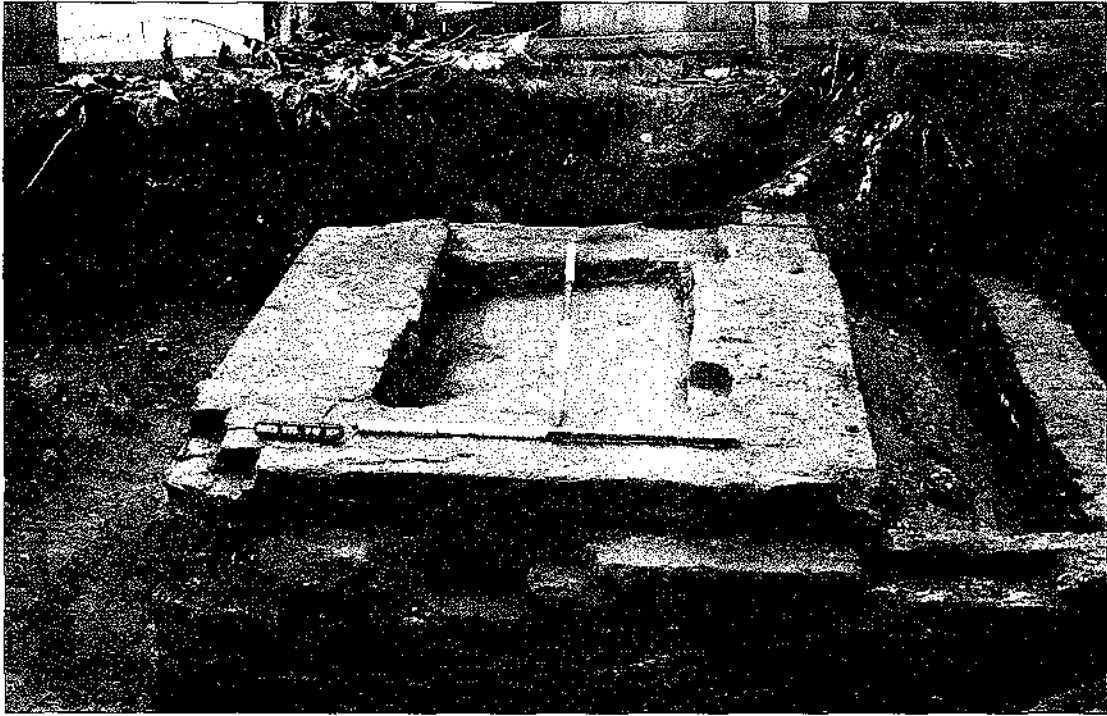


Plate 19.



Plate 20.



Plate 21.

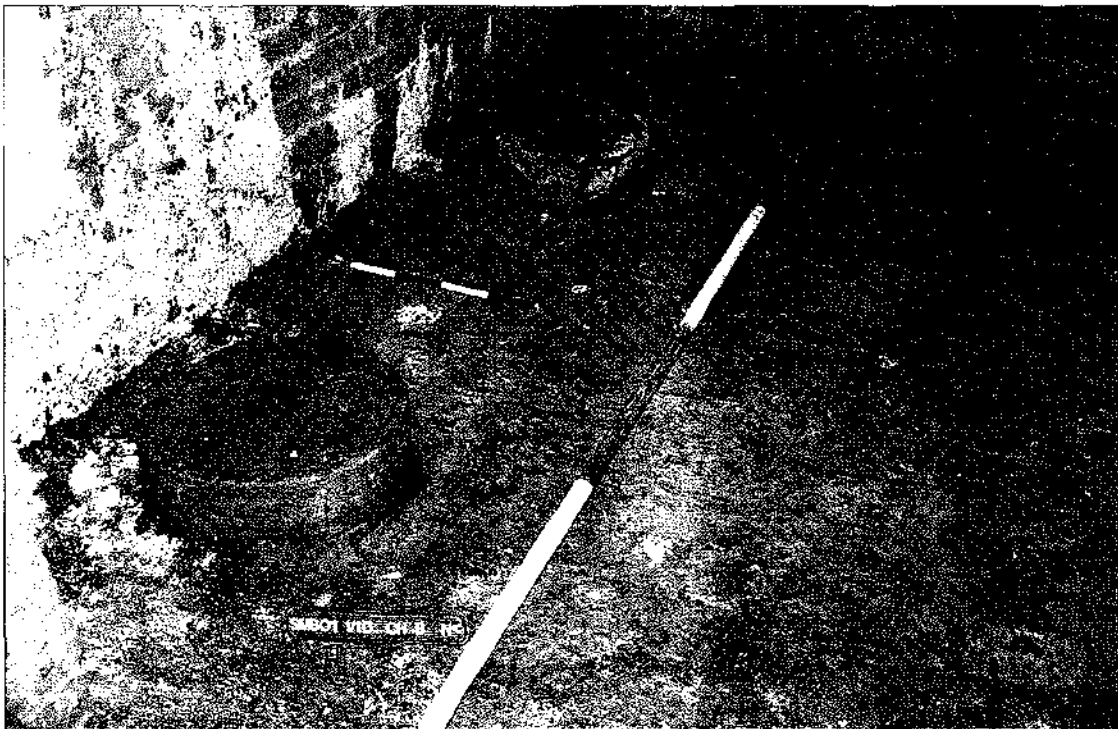


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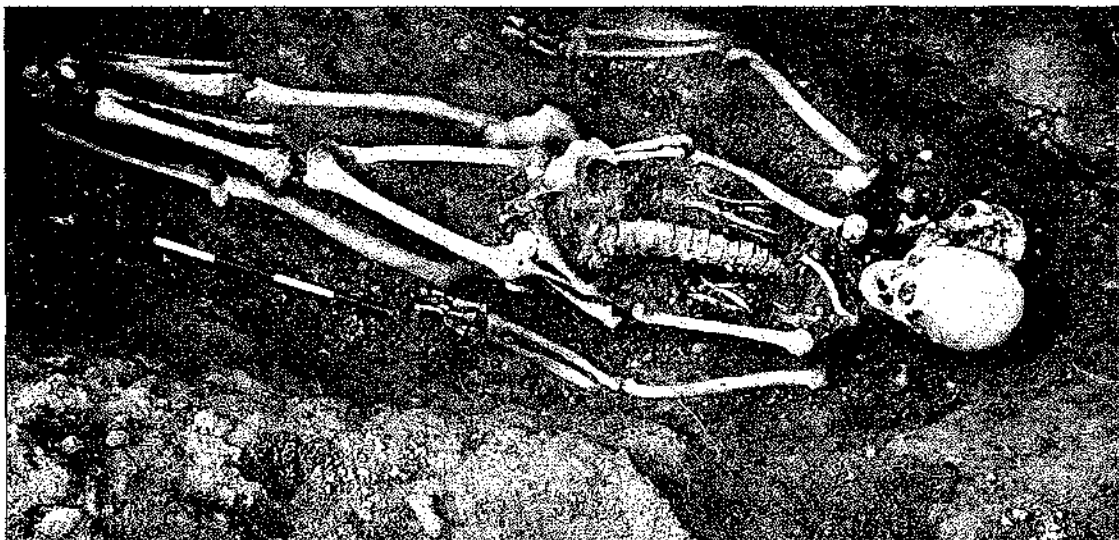


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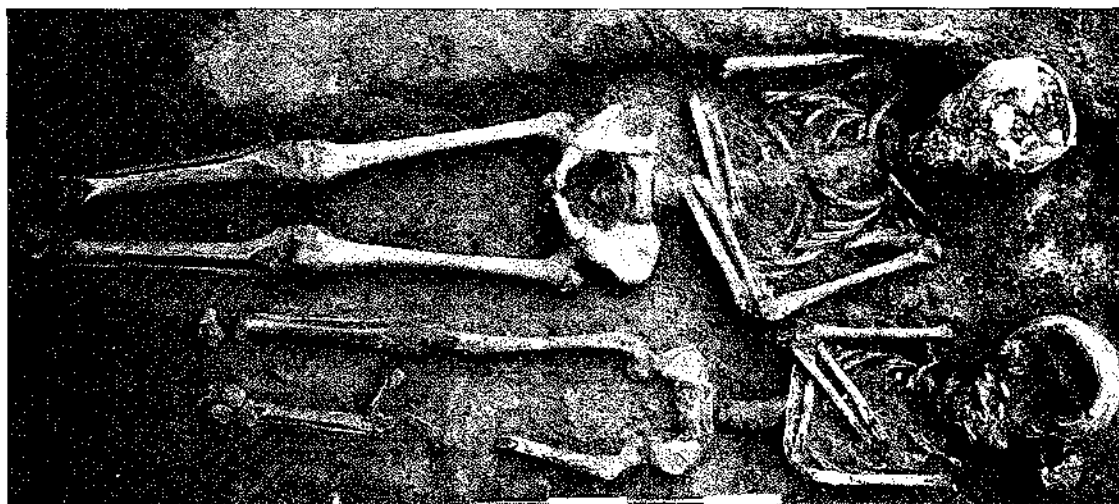


Plate 24.



Plate 25.



Plate 26.



Plate 27.



Plate 28.



Plate 29.

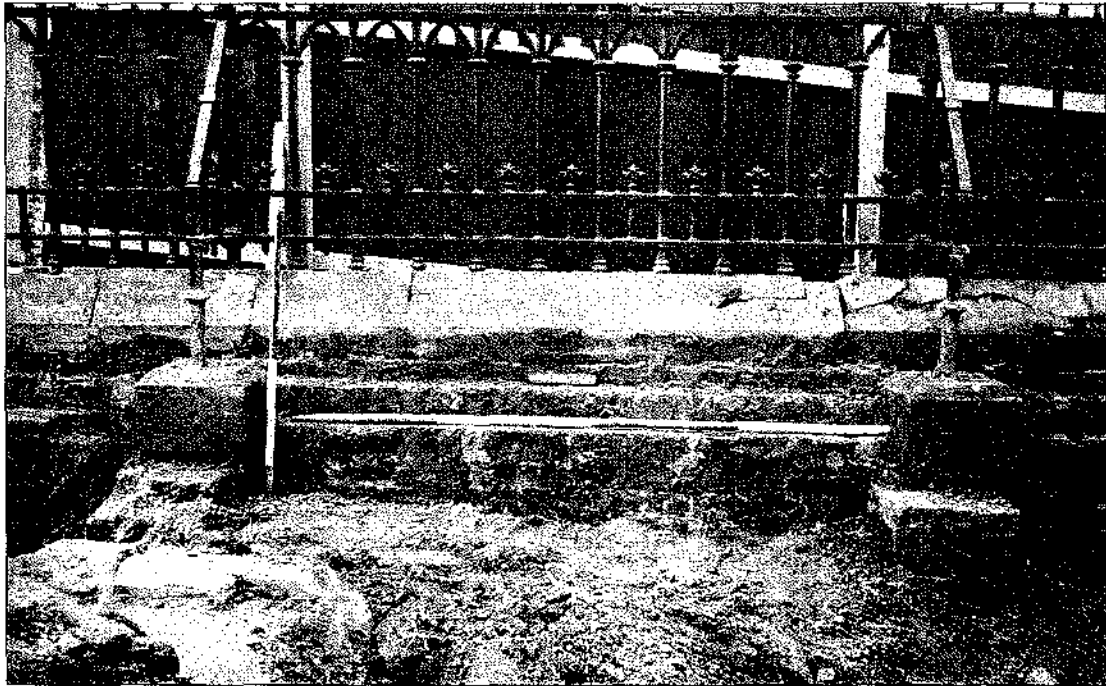



Plate 30.



Plate 31.



JOSEPH WARDEN & SONS,
IRON, STEEL, AND TIN PLATE MERCHANTS,
 EDGHASTON STREET, BIRMINGHAM,

MANUFACTURERS OF

PATENT RAILWAY SPIKES AND BOILER RIVETS:
 ANVILS, VARIOUS HAMMERS, TEE IRONS, BELLOWES,
 SCREW AND WIND-UP JACKS;
 SPADES, SHOVELS, TYRE SPRINGS,
 IRON ARMS, AXLE-TREES, HURDLES,
 RAMES, CHAINS, FILES, NAILS, &c., &c.

THOMAS AND EDWARD WHARTON,
SILVER PLATERS,
AND
 MANUFACTURERS OF PLATED WARES
IN ALL THEIR BRANCHES:
 141, SNOW HILL, BIRMINGHAM.

WILKINS AND BIRD,
 IRON AND STEEL WIRE DRAWERS,
 BASKERVILLE MILL,
 BROAD STREET, BIRMINGHAM.

Plate 32.



Plate 33.



Plate 34.