

Marches Archaeology

9-21 Greenhill Lichfield Staffordshire

Assessment report on the excavation,
watching brief
and building recording

April 2001

Marches Archaeology Series 178

9-21 Greenhill
Lichfield
Staffordshire

Assessment report on the excavation, watching brief and building recording

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Fig. 1 Location of the site

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Summary

An evaluation trench at the rear of No. 15, Greenhill found deep cultivation soils and post-medieval features. A stone built hearth of medieval date was found nearby during the later watching brief.

Archaeological excavation to the rear of Nos. 17 and 19, Greenhill found that post medieval development of the site had removed much of the pre-existing horizontal stratigraphy, probably also removing any shallower cut features in the process.

Two medieval wells were partly excavated along with two cesspits and three other medieval pits. The excavation has indicated that the site was first developed in the 13th century, although small quantities of 12th century pottery were recovered, possibly indicating sporadic activity at that date. Most of the cut features seem to have been filled in during the later 13th or early 14th centuries and evidence for occupation of the site between the 14th and 17th centuries was sparse within the excavation trench.

Some of the post-medieval features investigated indicate that the property boundary between Nos. 17 and 19 may have been shifted during the 18th century before being re-established on the medieval line.

Despite the relative paucity of medieval remains, the stratigraphic, artefactual and environmental evidence will contribute to a greater understanding of the development of this eastern suburb of Lichfield and has implications for published theories concerning earlier road systems.

Assessment of the standing buildings on 17-21, Greenhill identified a two bay two storey solar block of mid-15th century date which formed a cross wing to a now lost hall range on the site of no. 19. The presence of this building calls into question the excavation evidence for sparse occupation at this time, which may be explained by removal of below ground deposits by post medieval development.

The remaining structural evidence of the building stock indicates continuing alterations throughout the post-medieval period, modernising and extending the earlier structures, so that the external appearance is now predominantly of Georgian and Victorian date.

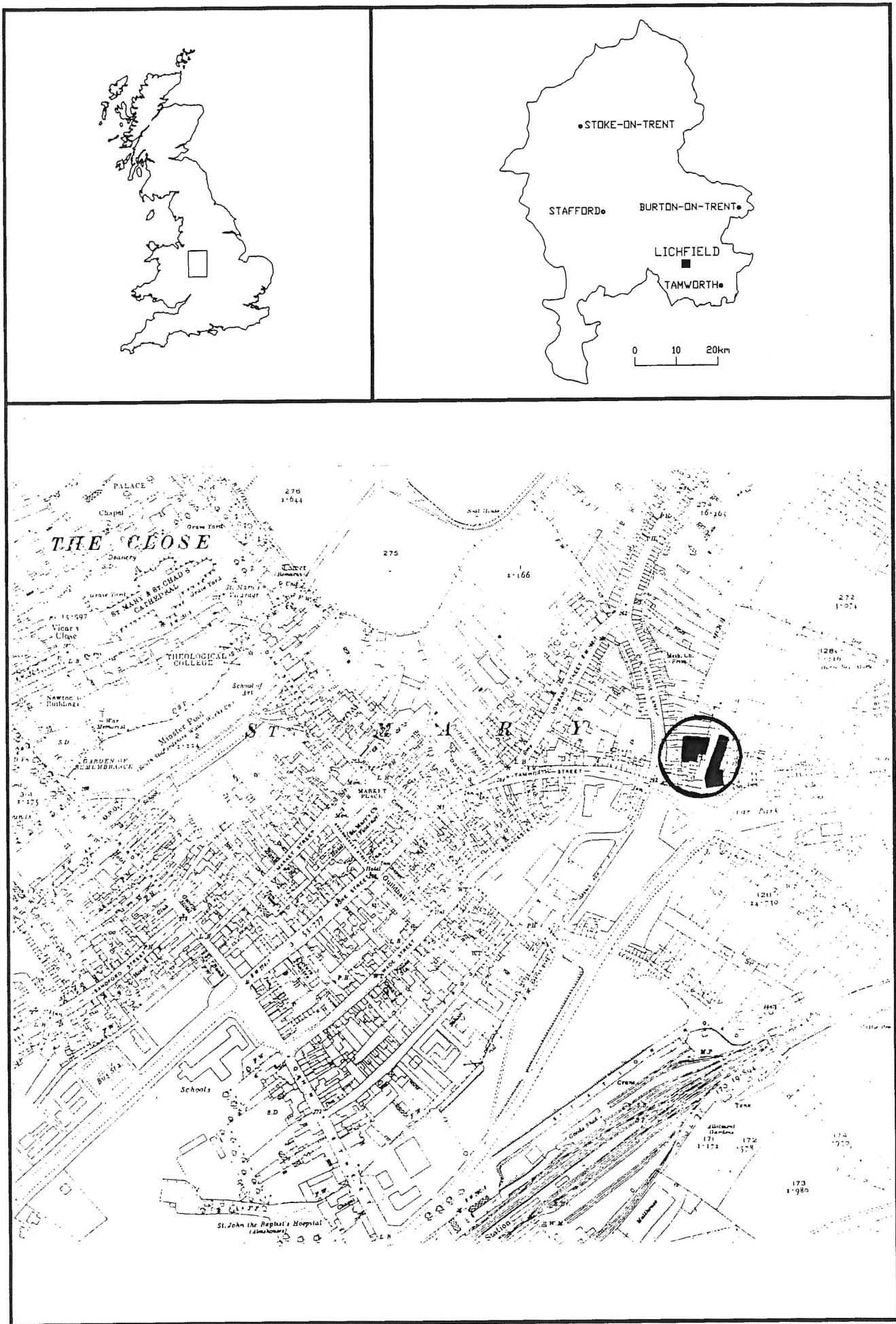


Fig. 1 Location of the Site

1 Introduction

1.1 *Planning History*

Planning permission was sought to build new flats as a single terrace development occupying most of the garden area to the rear of Nos. 17 and 19, Greenhill, Lichfield. An archaeological excavation and watching brief were required by the permission. The development scheme also involved the renovation of the existing buildings on the street frontage (Nos. 17-21); these include part of a late medieval hall so the renovation works were the subject of separate archaeological conditions comprising a watching brief and building recording and analysis.

Subsequently the Local Planning Authority required amendments to the development scheme, mainly concerned with car parking, which led to the inclusion into the development of a parcel of land lying between c. 30-50m to the rear of Nos. 9-15, Greenhill for garages. A watching brief was also maintained on this area.

1.2 *Description of the site*

Greenhill lies within the parish of St Michael on the eastern periphery of the historic core of Lichfield. Only the northern side of the Greenhill street frontage is developed and the houses overlook a wide, open area at the junction of the roads which historically led to Burton (Greenhill) and to Whittington (Rotten Row).

The land lies at approximately 91m OD on a very gentle north facing slope. The church of St. Michael lies at the top of the slope c. 300m to the south east at c.104m OD. The underlying solid geology comprises beds of the Keuper Sandstone formations (VCH, 1990, 1) overlain by sands and gravel. A natural spring is shown some 140m to the east on Snape's map of Lichfield dated 1781.

Nos. 17-21 Greenhill consist of various buildings fronting directly onto the pavement, i.e., with no front yards. The various main buildings feature various later additions to the rear (north) and the gardens run northwards at an oblique angle. The street frontage of Nos. 9-15 lie within different ownerships and were unaffected by the proposed development, so the buildings were not surveyed or inspected.

A buildings analysis report was produced for Nos. 17-21 (Joyce, 1998). This 'Preliminary Report on the Original Construction and Historical Development of Nos. 17-21 Greenhill, Lichfield' formed the basis for the current understanding of the buildings and identified that the core of the building including a hall with cross wing, of which the majority of the cross wing survived, though the degree of survival of the hall was unknown. An earlier study of the building had been carried out in the 1980s by Lichfield Vernacular Building Survey as part of a wider project. This archive is now held in the Archaeology Department of Staffordshire County Council.

The analysis concluded that the brick buildings occupying No.17 is almost entirely of late 17th or early 18th century date. The entire area to the rear of No. 17 was a tarmac car park. Number 19 is also of late 17th century date with a late 18th or early 19th century rear wing.

Both of these houses are of some historical interest and are listed as such. The garden area behind number 19 was largely open ground with a shed at the rear of the property.

Number 21 is both older and more interesting. It has late medieval origins, when it was a two bay, two storey building with the upper floor open to the roof. This has been interpreted as a cross wing dating to the mid-15th century. The hall with which this was associated is now lost but it is thought that it may have been aisled. If the postulated medieval hall was as wide as an aisled construction would suggest then it may have also occupied the site of No. 19 and possibly extended into No. 17.

The major portion of garden area to the rear of No. 21 had been taken over by the adjoining Duke of York public house and was thus unaffected by the development. If the postulated medieval hall occupying No. 21 extended backwards, as would be normal, elements of its construction might have survived within the remaining small yard which did lie within the curtilage of the proposed development area (although not within the footprint of the new building).

1.3 Mitigation strategy

Marches Archaeology undertook a desk based assessment for the development (Stone, R, 1999, MAS 067) followed by a field evaluation of the area affected by the proposed new building to the rear of Nos. 17-21 (Stone, R, 1999, MAS 093). In the light of the results of the field evaluation, the Local Planning Authority's Archaeological Advisor recommended further archaeological works and produced a 'Brief with Specification'.

Marches Archaeology submitted a written scheme of investigation for the archaeological works to the rear of Nos. 17-21, Greenhill amounting to the excavation of almost the total footprint of the new building; this scheme was accepted. Following amendments to the application (see section 1.a above), the Local Planning Authority's Archaeological Advisor required that two further evaluation trenches be excavated within the footprint of the proposed new garage building to the rear of 9-15 Greenhill, each trench being 5m long and 2m wide. The Local Planning Authority's Archaeological Advisor further stipulated that there should be provision for the extension of the excavation to a maximum of the entire footprint of the proposed new garage. Additionally a watching brief was to be maintained on all ground works not included within the main excavation area.

A 'Brief for Historic Building Recording' for the recording and investigative works was drawn up by the Local Planning Authority's Archaeological Advisor (Archaeology and Conservation Officer, Staffordshire County Council). Building Design Group, agents for the developer, commissioned Marches Archaeology to provide the archaeological services detailed in the Brief and a project proposal covering this aspect was submitted to and approved by the Archaeological Advisor.

2 Archaeological and historical background - a brief summary

2.1 Early history

There is little evidence of Lichfield having been intensively settled before the medieval period (Hodder, 1982; Carver, 1982a; Carver, 1982b) although the paucity of evidence may simply reflect a lack of archaeological investigation or destruction of earlier sites by medieval and later development.

Bishop Chad settled the centre of his bishopric at *Lyccidfelth* (Lichfield) *circa* 670 (Bede, 1968, 208), probably initially at the east end of the Stowe Pool with a slightly later move to the site of the existing Cathedral which probably rapidly became a focus for settlement (Carver, 1982a).

Several reviews of the early development of Lichfield have been published since 1950. Most agree that a planned 'new town' was laid out on the south side of the Minster Pool around the middle of the 12th century (Taylor, 1969, p 49; Bassett, 1982; Slater, 1985). It is most likely that the town ditch known as the Castle Dyke and the gates controlling entry across that ditch were set up as part of the works for the new town (Bassett, 1982, 112; Slater, 1985, 18). The excavation area at Greenhill lies outside the town ditch, to the east of the believed site of the Tamworth Gate and as such, would have lain within an 'extra-mural' suburb.

It has, however, been argued that the 12th century 'new town' was simply a planned infill of the area between earlier settlements sited around the cathedral and also on the promontory around St Michael's Church (Slater, 1985). It has also been suggested that the large size of the cemetery at that church (7 acres, later extended) indicates a late Roman or early Christian origin (Gould and Gould, 1975). Excavations adjacent to the church failed to clearly identify such an early origin, but without excluding it as one of the inhumations excavated was a crouched burial possibly dating to the Saxon period (Wilson, 1982, 70-73). Greenhill lies to the north west of the church on the end of the same promontory and overlooking the Stowe Pool. If any such early settlement existed, then Greenhill may have lain within it.

The earliest documentary reference to the church dates to c. 1190 AD. (VCH, 1990, 135), by which time it was outside the town ditch and thus outside the formal town. Although St. Michael's remained dependent on the cathedral as part of its *parochia* (VCH, 1990, 137-9) it was the main burial ground for the whole of the town of Lichfield and for several outlying areas (*op. cit.*, 135) throughout the medieval period giving it income from the burial rights. Documentary evidence supplied by wills indicates that St. Michael's was considered to have parish status by the 15th century (Bassett, 1982, 114).

Bassett (1982) argued that the growth of the area was due to the creation of a new market place at Greenhill either to offset congestion within the town centre or as a holding area. The individual burgage plots at Greenhill were larger than those within the town defences but were subject to the same rent (12d *per annum*).

Until recently, archaeological evidence from excavations in Lichfield showed a distinct absence of material dating to the 13th or 14th centuries and it was argued that this indicated 'depression, if not desertion' during that period (Carver, 1982a, 4). However, recent work in

Sandford Street and Bird Street has provided evidence to suggest that this was not the case (Stone 1999a; Stone, 1999b).

The national decline in population during the 14th century is well known, being caused by poor harvests in the 1320s and severe outbreaks of plague for some fifteen years from 1348. This undoubtedly would have affected Lichfield, but may in fact have helped to bolster the importance of the Greenhill area because markets were often moved outside towns at the time of the plagues for reasons of sanitation.

The earliest reference to property in this area is for a tenement outside Tamworth Gate *circa* 1208 (*op. cit.*, 111). Some aspects of the land use of Greenhill can be traced by evidences and leases from the Vicars Choral who owned land in the area (Cox, 1886, 180) although it is not clear how much land was owned by the Vicars Choral, or where precisely it was. The earliest reference to a messuage (dwelling) is in the time of Edward I or Edward II (1272-1327). Another 14th century reference is to a bell founder, while a burgage is mentioned in the time of Edward III (1327-1377); this reference to a burgage suggests that the land was deliberately laid out in plots, as Bassett suggested, rather than having grown haphazardly. In the time of Henry VIII (*circa* 1535) the Vicars Choral owned 'twelve tenements, gardens orchards and land and the 'pynefoolde' named Castledyke and a 'garden' in Greenhill (Cox, 1886, 166). The reference to the pinfold might mean that these tenements were in the vicinity of 17-21 Greenhill, perhaps including them, but this remains uncertain.

The site itself retains physical evidence of the layout of the area in the late medieval period in the form of the cross wing of a mid-15th century building at number 21 (Joyce, 1998). At number 11 is a cruck framed building which is probably also late medieval (VCH, 1990, 43). These buildings would have bordered the market place, which was also the site of the Whitsun fair in the early 15th century (VCH, 1990, 117)

2.2 *Post medieval*

The inset cartouche of Lichfield on Speed's map of Staffordshire of 1610 shows both the northern and southern sides of Greenhill as being continuously built up. The fairly obvious lack of accuracy of Speed's plan means that Nos. 9-21 cannot be accurately identified. The west side of Greenhill was open where it was joined by Rotten Row. All the buildings fronting onto Greenhill are shown as having their gable ends onto the street frontage.

The fragmentary nature of the documentary sources relating to Greenhill for the early post-medieval period means that little is known of the development of the area although some indications can be gleaned from references to occupations and industries. A tile house manufactured roof tiles in the early 16th century and probably also bricks (VCH, 1990, 120). Gregory King's Census of 1695 indicates that 44 of the 63 households in Greenhill were pauper households. This would seem at odds with the high status of the 15th century hall and cross wing represented by 21 Greenhill. Probate inventories from 1568-1680 include wills from eight men who had interests in the Greenhill area (Vaisey, 1969). The amounts left ranged from one Richard Harper who left debts, to a Richard Knighte, whose estate was valued at £81 16s 4d, a considerable sum indeed. Four of the wills mention occupations - Thomas Hall was a husbandman, Richard Knighte was a capper, William Fletcher was a tailor and Richard Riley was a silk weaver. In 1818, a George Gilbert was recorded as a brick

maker and there was a flax dresser in the area. (VCH, 1990, 123). In 1814 there was a paper maker (*op. cit.* 281).

Snape's map of Lichfield dated 1781 provides the first accurate survey of the town and presents a more detailed view than Speed showing that No. 17 was built up not only on the frontage, but also for the full length of the plot to the rear. The rear of numbers 19 and 21 was open ground, presumably a yard.

Documentary sources indicate that the Greenhill market continued into the 19th century although it is not shown on Snape's map of 1781. A pinfold existed in Greenhill in 1498 (VCH, 1990, 75) and one is shown on Snape's map at the junction of Greenhill and Rotten Row. It appears to have been removed in the early 19th century as it does not appear on the tithe map.

The Tithe schedule of 1844 shows that a John Gilbert lived in Nos. 17 and 19, which consisted of 'house, garden, yard, malt-house, stable and piggeries'. Number 21, a 'house and garden', was occupied by William Williamson. Both were owned by the feoffees of St Michael's Church Property, as was the adjacent 'Duke of York' public house. Kelly's Directory of 1860 noted a William Williamson as a market gardener in Greenhill but White's Directory of (1851) had a William Williamson in the adjoining Church Street. He was a town crier, but it is not clear whether this was the same person. Snape's plan of 1781 shows a very large formal garden just to the east of the spring with a single small building in its south west corner. There are no other single garden areas of comparable size occupied by a single small building anywhere on Snape's map and this may have been a market garden set out on land less prone to drought, i.e., the land to the rear of Greenhill/Church Street may have survived because of its capabilities as an arable field.

Ordnance Survey maps dating to the later 19th and the early 20th centuries show the internal divisions of the garden areas of No.'s 17-21 site with more clarity; there would appear to have been few changes. It is clear that the built up area to the rear of number 17 shown on Snape's plan was in fact a range of buildings, presumably including the malt house and stables. The piggeries were probably the buildings shown at the east of the site in the 1840s. By the 1880s these had been moved to the northern end of the site. In the early part of the 20th century a new outbuilding was added at the east of the site, where the piggeries had once been. All the outbuildings shown in the garden area of No. 17 on Snape's plan were demolished c. 1970.

As noted in section 1 above, a required amendment to the planning application led to the inclusion into the development of a new parcel of land on the west side of the lane, some 30-50m to the rear of Nos. 9-15, Greenhill. It seemed likely that this ground would have been part of the back plots of the properties in the medieval period so a condition was placed upon it for archaeological evaluation. Snape's plan of 1781 clearly shows that the location of evaluation trench 4 lay at the rear (south east corner) of a garden belonging to a property fronting onto George Lane rather than Greenhill. Later maps show that there have been many minor alterations of boundaries and detail in this vicinity in the last two hundred years. The houses fronting onto George Lane were later demolished (the sites now being occupied by houses built c. 1930) and the eastern ends of the garden areas were split off to form a new parcel with access from the lane between Nos. 15 and 17, Greenhill. Prior to the evaluation the northern periphery of this parcel was occupied by a terraced row of concrete panel garages, the remainder of the area being largely tarmac.

3 Scope and aims of the project

3.1 *The excavation and watching brief*

The Brief and Specification required that an area of 200 square metres be excavated to the rear of 17-21 Greenhill (specifically including the area of the original evaluation trench 1) with a contingency for the excavation of a further 20 square metres. This amounted to virtually the total excavation of the gardens of Nos. 17 and 19. Practical considerations meant that no part of the small yard to the rear of No. 21 could be included within the main excavation area so the minor ground works envisaged there were included within the later watching brief.

The Institute of Field Archaeology defines an Excavation as:-

"a programme of controlled, intrusive fieldwork with defined research objectives which examines and records archaeological deposits, features and structures and, as appropriate, retrieves artefacts, ecofacts and other remains within a specified area or site. The records made and objects gathered during fieldwork are studied and the results of that study published in detail appropriate to the Project Design and in the light of the findings".

The purpose of Excavation is defined by the Institute of Field Archaeologists as:-

"to examine the archaeological resource within a given area or site within a framework of defined research objectives, to seek a better understanding of and compile a lasting record of that resource, to analyse the findings/record and then to disseminate the results of the research".

The watching brief aimed to retrieve any supplementary information which might be present in areas not being excavated.

The Brief and Specification indicated the following research questions:

- a) at what date did occupation of this part of Lichfield commence?
- b) what was the nature of the occupation and how did it vary with time?
- c) when was the area first developed?
- d) were the plots now relating to 17 and 19 originally separate, or have they been subsequently divided?
- e) what was the nature of the activities carried out within the whole land unit upon which nos. 17-21 now stand? Is there any evidence of manufacturing? Is there any evidence of the threefold division of activities seen elsewhere in Lichfield (i.e. is the plot divided into a building/activity/garden zone)?
- f) what were the conditions of existence of the people who lived here, and how did they vary over time (e.g. status, occupations, diet, dress)? What can be determined about the rural hinterland from which they procured their food etc.?

3.2 *The building recording*

A primary aim of the work outlined in the Project Proposal was to satisfy the requirements of the planning condition. This project has additional archaeological research aims.

The Institute of Field Archaeology (IFA) defines Building Investigation and Recording as "a programme of work intended to establish the character, history, dating, form and archaeological development of a specified building, or structure, or complex and its setting, including its buried components".

The purpose of Building Investigation and Recording is defined by the IFA as "to examine a specified building, or structure, or complex and its setting, in order to inform the formulation of a strategy for the conservation, alteration, demolition, repair or management of a building, or structure, or complex and its setting", or to "seek a better understanding and compile a lasting record, to analyse the findings/record and then to disseminate the results".

The Brief identified five specific objectives, summarised as:

- providing adequate archaeological monitoring
- providing adequate archaeological recording
- providing analysis and conservation of artefactual and ecofactual material
- providing analysis and conservation of the archive
- providing appropriate reporting and publication

The Brief stated that the archaeological recording would consist of two parts: groundworks and building recording.

Groundworks

The excavation and watching brief on the land to the rear of the building was formally extended to include any groundworks within the footprint of the standing building.

Building recording

Prior to conversion the following work was carried out:

- 1 preparation of a level 3-4 photographic record, as defined in the RCHM(E) publication *Recording Historic Buildings - A Descriptive Specification*, 3rd edn.
- 2 supporting measured drawings (RCHME level 3) to supplement those produced by Nick Joyce and held by Staffordshire County Council.

During conversion the following work was carried out:

- 1 monitoring of removal of material which revealed historic fabric. Appropriate recording of material to be re-covered or altered.
- 2 Description of methods and materials of construction.
- 3 No collection of samples of wallpapers was carried out as none of any antiquity were identified

4 Methodology

4.1 Documentary research

Primary and secondary sources were extensively consulted for the desk-based assessment. The evaluation excavation provided further information about the site and additional work on the documentary background was carried out by Marches Archaeology as part of this work. The results of the main excavation do not warrant further study of primary documentary sources.

4.2 Excavation and watching brief methodology

The Local Planning Authority's Archaeological Advisor had agreed that cut features and deposits later than *circa* 1750 were not considered to be of archaeological significance for the purposes of this project. Where such non-significant features penetrated the natural deposits without impact on earlier archaeological deposits or features, the non-significant features were largely left *in situ* although most required at least partial excavation to elucidate their nature and also recording in order that they could be fitted into the site sequence.

The upper deposits were excavated by mechanical excavator to a level determined to comprise deposits, features or horizons of archaeological significance. Further excavation was by hand.

The recording system included written, drawn and photographic data. It was designed to be able to be integrated with the system used during the evaluation excavation. A detailed listing is given in section 6 below.

Consecutive context numbers were allocated and context record sheets completed. A stratigraphic matrix was maintained on site and a computerised version produced on completion of the fieldwork.

Appropriate drawings comprising plans (normally at scale 1:20) and sections (normally at scale 1:10) were made of significant data. Deposits and features were related to Ordnance Datum height. Plans were normally multi-context, but a few features required single context planning. The photographic record comprises black and white negative and colour transparency film.

All artefactual and ecofactual material recovered by hand excavation was retained. Samples were taken of deposits considered to have environmental, technological or scientific dating potential. The environmental sampling strategy and details of the finds collection and processing strategy were given as appendices in the original written scheme of investigation for the project.

All fieldwork has been completed and a site archive has been prepared. The written, drawn and photographic data have been catalogued and cross-referenced. This report constitutes the summary of the site work. The bone and pottery assemblages have been assessed (Appendices A and B). The ecofactual data has been catalogued and cross-referenced but remains to be processed.

5 The results of the fieldwork

5.1 Evaluation trench 4 (land to the rear of Nos. 9-15, Greenhill)

The trench measured 10.4m east-west by 1.9m north-south (Fig. 2). It revealed a fairly intact soil profile some 0.8m deep over most of the trench. The natural sands [56] were overlain by a thin 'B/C' horizon [69] which merged upwards into a relict cultivation soil [55] comprising light brown-red loamy sand c. 0.4m thick which in turn was overlain by the most recently cultivated garden topsoil, a dark black-brown silty sand loam [54] which formed the ground-surface up until the laying of the tarmac for the garages built c. 1960.

The trench was machined firstly to the top of the relict soil [55] and several sherds of pottery ranging from medieval to the later 18th century were recovered from the upper part of that soil. The machine strip exposed a shallow linear scoop [58] and three small, shallow, bowl shaped pits [60], [62] and [68]. All were of 18th or 19th century date although pit [68] also contained several sherds of medieval pottery. It had been cut through the corner of a very neat trapezoidal shaped pit [64] which proved to be 0.3m deep and contained the articulated skeleton of a donkey in a fairly poor state of preservation. The fills around the bones contained several pieces of clay pipe stem and china; only a few bones were retained. Two larger pits [66] and [76] penetrated to below the top of natural [56]. Both pits had been backfilled with old demolition materials and also contained sherds of china, glass bottles and tin cans indicating an early 20th century date. They were not fully emptied.

Following investigation of the above features, cultivation soil [55] was removed by machine to the top of the underlying 'B/C' horizon [69] which was then removed by hand down onto the top of the natural sands [56]. A small number of sherds of medieval pottery were recovered from the very base of cultivation soil [55] from locations all across the trench; the position of these sherds provided a good indication of the date of cultivation of that soil.

Removal of the medieval soil revealed several patches of dirty sand. Feature [157] at the east end of the trench had two channels running radially outwards and would seem to have been an old socket for a small tree stump. The adjacent feature [156] was less easily identifiable but almost certainly natural. Feature [159] crossed the middle of the trench. It was utterly linear and almost certainly a mole burrow. The adjacent feature [152] was undoubtedly another natural feature. A test trench [151] placed across a broad linear patch of dirty sand at the west end of the trench proved the sand to be a maximum of 0.1m deep and probably simply a soft patch of sand between two areas of weathered bedrock. A second test trench placed across the same feature by the southern trench edge revealed a hollow [74] filled with slightly humic sand [73]. The east edge of hollow [74] was vertical within bedrock, whilst the west edge sloped down to a small niche or underhang in the bedrock of the east edge. It is most likely that this was an old rabbit burrow. A sherd of medieval pottery was recovered from the upper part of the fill and a struck flint flake was found deep within the burrow.

There was no clearly identifiable medieval activity apart from a thin scattering of pottery within soil [55] and no structural features of any date. As a result of the apparently low level of activity, there was no further requirement for formal excavation although a watching brief was maintained on all subsequent ground works in the area.

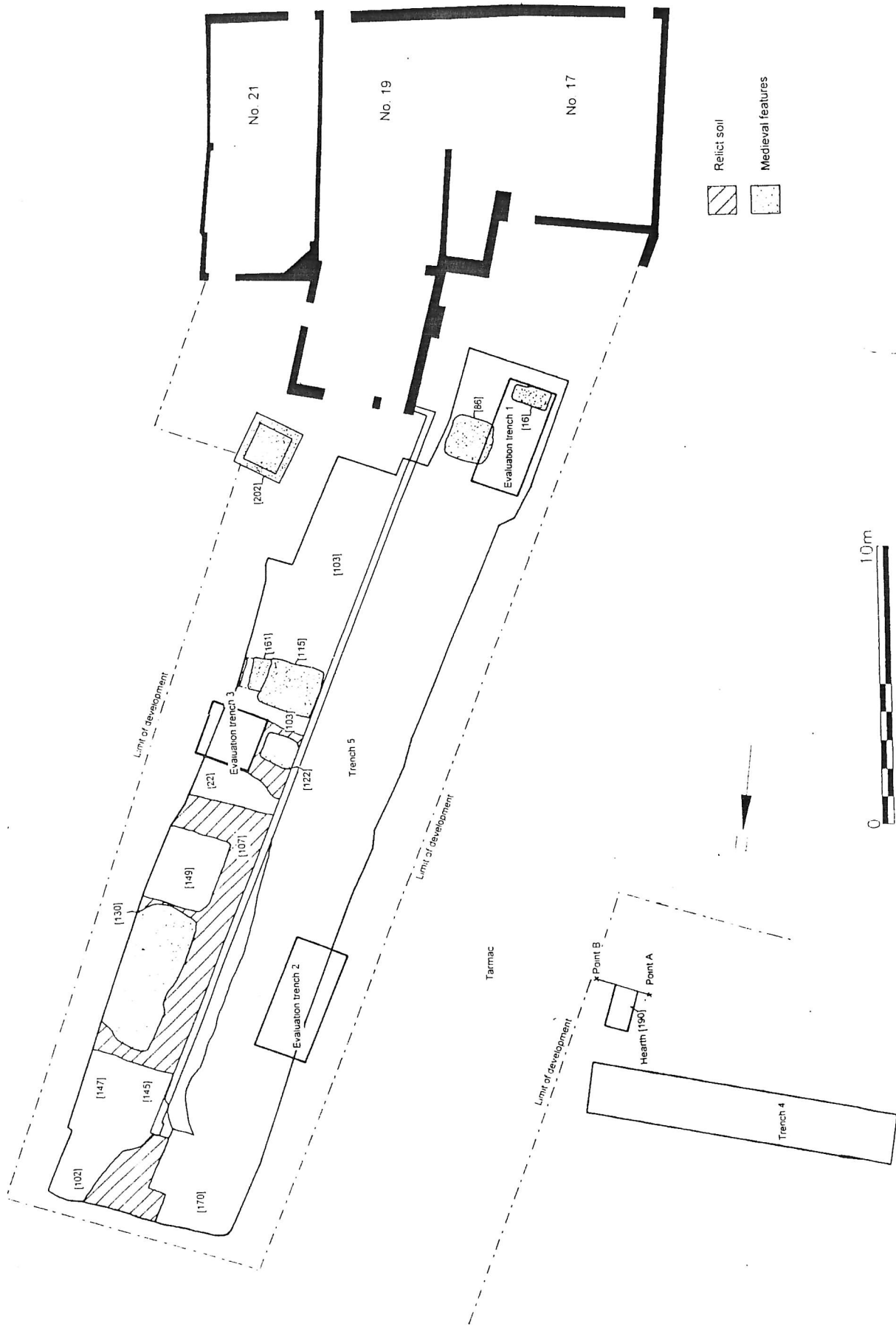


Fig. 2 Location of the trenches and principal medieval features

The only feature revealed during the watching brief to the rear of Nos. 9-15, Greenhill was part of a hearth or oven [190] just outside the south east corner of evaluation trench 4. There were no ground works to the south of the section line shown as points A and B on Fig. 2 so the southernmost part of the hearth was never exposed and presumably remains *in situ*.

Hearth [190] was first encountered in the extreme south east corner of footings trench for the new garage building. At that point, the hearth comprised two linear stone walls [191] and [192]. Both walls were set north-south along the edges of a pit [200] which penetrated to 0.6m below the top of the natural sands; the walls were founded on soft bedrock. The walls survived to a height of 0.55m and were 0.3m thick. Both were formed from irregular platy and blocky random sandstone bonded with mauve clay [193] and were fairly neatly constructed to give vertical, flush, internal faces although the exterior faces towards the pit edges were fairly crude. The northern end of both walls terminated as faced vertical stubs. The base of pit [200] was flat for c. 0.8m to the north of the two stub walls and then ramped upwards at c. 45 degrees.

It was obvious that there had never been a wall on the north side, i.e., a wall joining side walls [192] and [191]. It seems most likely that the hearth was approached via the ramp and that the flat area of the base of cut [200] was the working area for setting the fire (although the arrangement at the south end remains unknown).

A thin layer of black sooty loam [190] lay in the slight hollow in the bedrock between walls [191] and [192] and was undoubtedly the remnants of the last fire in the hearth. The clean sand [194] overlying soot [190] had clearly been heat affected. Several localised patches on the internal faces of both the east and west walls bore signs of heat action on both the sandstone masonry and clay bonding material [193]. The overlying deposits were fairly clean sands [195] and [196] which were probably deliberate backfill. The uppermost fill, a homogenous light brown sandy loam [197], merged upwards into the surrounding relict cultivation soil [55] and probably represents an accumulation of silted and windblown material derived largely from that cultivation soil following abandonment of the structure; eight small sherds of pottery recovered from low down within fill [197] indicate that the abandonment occurred during the 13th or 14th centuries.

The portion of the hearth to the immediate south was exposed during later ground works for an adjoining manhole position and proved to be better preserved, for side wall [192] stood intact to a height of 0.9m and stepped inwards noticeably suggesting that it was leading upwards to a flue. The arrangement of the masonry above wall [191], although suggestive of a roof arch, probably resulted from collapse of some of the upper part of wall [191] following the abandonment of the structure.

5.2 *The main excavation to the rear of Nos. 17-21, Greenhill*

5.2.1 *The garden of No. 17*

The gardens of No. 17 and No. 19 were separated by a brick boundary wall [70] dating to the late 18th or early 19th centuries. It seems that the position of this boundary has altered little, if at all, since the time of Snape's map of Lichfield dated 1781. The investigation of the age of this boundary formed one of the main research questions for the excavation.

Snape's map shows that the entire garden area of No. 17 was occupied by a terraced row of brick buildings. More recent maps indicate that there were few alterations until c. 1970 when the entire terrace behind No. 17 was demolished using a J.C.B. and the garden area was turned into a car park. The machine driver had excavated the entire garden area of No. 17 right up to the western edge of wall [70] down to the top of the weathered sandstone natural (machine cut [170]) and subsequently grubbed out all footings set below the level of the clean sand (*pers. comm.*) before laying c. 0.7m depth of bricks and other rubble as hard-core for the new tarmac surface. These works had resulted in the removal of all horizontal archaeological deposits and layers within the garden of No. 17 so that only the lower parts of deeper features had survived. The garden was re-machined to the same level for the excavation.

Medieval

A rectangular pit [16] was partly excavated during the 1999 evaluation in trench 1 (Fig. 2). The evaluation had indicated that it was a medieval cesspit measuring 1.4m long by 0.8m wide and filled with successive deposits of organic waste. The pit was re-exposed near the south west corner of the main excavation area and the investigation was completed.

The pit proved to be 1.1m deep below the level of machine cut [170]. The lowest fill [89] was a soft, mid reddish brown silty sand that appeared to be less 'organic' than the higher cess deposits. It appeared to have been deliberately covered with a thin deposit of ochreous 'talc' lumps [88] which were overlain by a much deeper deposit of soft sandy silty pale brown mud [18]. This formed the main cess deposit within the pit and was probably formed largely from human excreta with perhaps other domestic organic refuse. There were intermittent shallow tip lines within cess [18] comprising light yellow-beige ochreous lumps similar in nature to fill [88] but not as thick or continuous. It is thought that all these ochreous light beige layers were lime deposits laid deliberately to cure foul odours.

Fill [18] contained a complete unglazed white ware jug of small squat form, retrieved during the evaluation excavation. The form and plainness of the jug suggests that it was made in the later 14th century (Appendix A). A large number of fragments of glass were also found and have been identified as being parts of two, or possibly three glass urinals (Stone *et al*, 1999, MAS 093, Section 6.2). Fill [18] has also proved to be very rich in environmental evidence (Stone *et al*, 1999, MAS 093, Section 6.4).

The organic deposit [18] was sealed by a bowl shaped deposit of mid grey-brown clay [17]. This was interpreted as being possibly a secondary lining or internal capping for the underlying cess deposits. It was covered by a further deep deposit of mid brownish red silty sand [15] with frequent charcoal flecks and occasional mortar and coal fragments. This formed the bulk of the fill of the upper half of the pit and may have been simply household waste rather than cess or perhaps a mixture of household waste and cess. Iron working waste was noted in the flotation sample residue. Several large sherds forming a substantial portion of a single vessel interpreted as a candle-maker's trough were recovered from contexts [15] and [17] in the evaluation excavation (Appendix A).

The uppermost fill, sand [13], lay within a small shallow bowl shaped hollow in the top of fill [15]. This fill lay just below machine cut [170]. The presence of a fragment of a partially

burnt flat roof tile within fill [13] in association with mortar fragments seems to indicate incorporation of material from the surrounding trample layer [14] making it highly likely that fill [13] resulted from disturbance of the top of fill [15] during ground works c. 1970.

In addition to the jug and the candle-maker's trough a small number of body sherds also indicative of a 13th or 14th century date and also of the disposal of household waste were recovered from most of the fills of cesspit [16]. It should be noted that some of these may be more pieces of the candle-maker's trough found during the evaluation in 1999.

A medieval well [86] was found 1.5 m to the north east of cesspit [16]. The upper part of cut [86] was a square bowl shape for c. 0.5m depth below the surviving top of the subsoil (i.e. below machine cut [170]), the erosion presumably indicating that the feature had been left open for some time. The fill of this upper part of the feature comprised a mixture of deliberate dumps of re-deposited subsoil with intermittent lenses [85] / [87] derived apparently from topsoil type material and containing charcoal flecking and occasional pottery and bone.

Below 0.5m, the well was cut vertically through soft bedded sandstone. The cut was fairly neatly square measuring 1.4m on each side. The bedrock in the sides featured a herring bone arrangement of closely spaced diagonal slash marks that were either pick or chisel marks; it seems that some care was taken to shape the feature. The fill in this zone was a homogenous soft, light grey brown, silty sand [92] that was essentially similar to relict topsoil [55] in nature and contained modest quantities of animal bone and medieval pottery of types indicative that the well was back filled in the 13th or 14th century. This fill was removed from the entire feature to a depth of 1.2m and bulk environmental samples were taken. A small exploratory box was then taken down to 1.6m and a probe was pushed down to 1m below that level with no sign of the base being encountered. Further excavation was ruled out partly on safety grounds, partly because the lower fills would be considerably below any likely disturbance from the proposed development and partly because the feature lay close to the proposed line of a main wall footing and deeper excavation might have resulted in future structural problems.

There were no other medieval features or layers within this garden.

Post medieval

The excavation revealed that a trample layer [14], encountered in evaluation trench 1, actually extended some 4m northwards from cesspit [16], sealing the top of well [86], before being truncated by machine cut [170].

To the south side of well [86], a shallow linear scoop [83] overlay trample [14] The scoop was a mere 0.02m deep and filled with mixed sand and grey mortar powder. The shape seems to suggest that it may have been overlain by a wall that was removed during the demolition c. 1970; unfortunately neither scoop [83] nor trample [14] contained finds so neither can be securely dated but as trample layer [14] lay right at the base of machine cut [170] it may have been either machine trample remaining from the demolition or possibly the remnants of a floor surface within the building depicted on historical maps. The survival of a regular shape for scoop [83] suggests that the latter interpretation might be correct.

Three features cutting natural sand [19] were investigated some 13m to the north of well [86]. Two sub-rectangular pits [80] and [82] proved to be 0.35 and 0.5m deep respectively and filled with similar dirty brown sand containing occasional fragments of roof tiles and bricks in association with pottery of late 16th or early 17th date. Between the two pits lay a cloverleaf arrangement of three small, shallow and intersecting pits [78]. The sequence for these pits could not be established as all three contained the same homogenous dark loamy fill; the finds would seem to indicate that they were all of late 17th century date so they may have been associated with the early usage of the of the existing building on the frontage of No. 17.

Most of the garden to the north was occupied by a variety of large, rectilinear (and usually deep) cuts whose origins almost certainly lie in the late 18th or early 19th centuries but most of which showed signs of major disturbance and random enlargement during the grubbing out of footings by the J.C.B. during demolition c. 1970. Whilst some of these features probably represent the construction cuts for subterranean structural features within the buildings depicted on historical maps, some of the features may have been engineer's test pits or simply represent the common practice of digging out perceived 'soft spots'. The project brief had stipulated that deposits or features post-dating c. 1750 were not archaeologically significant so these sockets were only partially investigated to confirm the date of destruction and then abandoned.

A large rectangular cut [189] occurred roughly midway along the garden. The east edge lay along the west side of boundary wall [70] whilst the north edge was on the same alignment as the south side of a cellar [149] located immediately to the east in the garden of No. 19 (Fig. 2). Partial excavation revealed the feature was at least 0.5m deep with near vertical sides which makes it likely that it was also a cellar. The fill contained some pieces of china including local Staffordshire wares. It was bisected east-west by the cut [21] for a live sewer that was laid after 1970 (fill [22] on Fig. 2).

Another large rectangular cut [187] lay just to the north. The northern edge lay on the same alignment as the north edge of cellar [149] and was lined with a wall [125] formed of late 18th century bricks sitting on a foundation course of large sandstone boulders. This wall continued slightly eastwards of cut [187] in a construction cut [124] which took it to the west face of wall [70] although the two walls were not keyed in. The lower part of this eastwards stub portion of wall [125] had survived the demolition but the brick work had been physically dragged northwards off its footings during the demolition. The western part of the wall had been smashed up and pounded into the top fill of [187]. Investigation of an area at the north eastern corner of cut [187] revealed three large boulders (probably from the footings of wall [125]) buried in a machine dug pit c. 0.6m deep. Further investigation of cut [124] demonstrated that cut [187] was at least 0.5m deep and probably simply a large scoop to remove a rectilinear arrangement of old wall footings; it was not investigated further.

The area to the immediate north of cut [124] was very badly disturbed by machine cut [170] with numerous hollows containing compacted demolition materials and others containing light brown loamy fills; partial excavation of some of these recovered potsherds ranging from medieval types to fairly modern china. The 1999 evaluation trench 2 was sited within the western side of this disturbed area.

The evaluation excavation of trench 2 had recovered sherds of pottery dated to the 13th or 14th centuries from the fill [43] of a small pit [44]. This pit was cut by a larger, apparently rectangular pit [40] which had been back filled with loose silty sand [39]. This contained a large amount of brick fragments, part of the base of a medieval white ware bowl and a fragment of black ware tankard; the latter apparently dated this fill to the late 16th or 17th centuries. The east edge of pit [40] had been destroyed by a linear trench [42] filled with brick rubble [41]. The interpretation of trench [42] as a robbed out wall was found to be correct during the main excavation as it proved to be the western end of construction cut [124]. The lack of diagnostically later material within the two pits underlying the robbed out construction cut [42] was quite reasonably taken to indicate the presence of genuinely old features. However, the main excavation demonstrated that they were almost certainly the result of machine disturbance involving redeposition of materials at least partially derived from the destruction of genuinely old deposits somewhere in the vicinity. This is added as a cautionary tale, for it serves to highlight the dangers inherent in the interpretation of shallow features in small evaluation trenches.

A massive oval shaped feature [180], just to the north of the position of evaluation trench 2, was partly investigated. The soil fill [185] included much material of mid to late 18th century date. The northern end of cut [180] was totally truncated a third large rectilinear machine cut [184] that occupied most of the north west corner of the site. The cross section provided by the southern edge of cut [184] showed that cut [180] was at least 1.4m deep with near vertical sides; it was not investigated further and the function remains unclear but it may have been either similar in nature to cut [102] to the north east (see below) or perhaps a sand quarry.

The top fills of cut [184] were brick hard core relating to the car park. Removal of these revealed that the feature had been machined to three separate depths (cuts [184], [187] and [189]), each probably representing a single sweep with the machine bucket. The deepest of these penetrated to over a metre below the general level of the surrounding machine cut [170]. Cut [184] was almost certainly created by the grubbing out of another cellar within the buildings depicted on 18th and 19th century maps.

5.2.2 *The garden of No. 19*

Snape's map dated 1781 shows that the garden of No. 19 was largely free of buildings at that time. The garden was covered with 0.6m depth of recent topsoil [20]. This was removed by machine. Machine cut [170] had only affected a small area at the north western corner of the garden so the survival of archaeological deposits and features was better although various large cut features of slightly older (but post-medieval) date had removed all earlier stratigraphy at two locations.

A 19th century well [145] and an associated deep cut [102] had removed most of the stratigraphy in the north east corner of the garden (Fig. 2). To the south, a deep cellar [149] in the middle of the garden had destroyed all earlier stratigraphy within its footprint. The rectangular area between these two locations formed an island where a relict soil horizon [107] survived in the areas between various cut features of archaeological interest. Soil [107] appeared to have been in cultivation from the medieval period up into the 18th century at which time a cobbled surface or pathway [26], flanked by a linear kerb [72], was set into the top of soil [107]. Surface [26], which survived as several patches of a cobbles in a rough

linear arrangement, formed a distinct horizontal break in both physical and temporal terms between soil [107] and all overlying deposits so the mid part of the site was machined to just above the level of this surface.

A recent sewer trench [22] crossed the garden east-west just to the south of cellar [149]. Soil [107] extended slightly south of the sewer [22], but most of the area to the south of that sewer and west of wall [70] had been stripped to the top of the natural sands [19] removing the relict soil [107] in the process. Here, the natural sand was covered by a thin layer of trampled subsoil [103]. Pottery dating to the 17th to 19th centuries was recovered from within the trample at several locations, indicating that the area had been stripped to this level probably no earlier than the 17th century which might indicate that it was associated with the development of the existing structures on the street frontage of Nos. 17 and 19 at about that time. The pottery from the overlying garden topsoil [91] was largely of 19th century date. The lower parts of three medieval pits were found below trample [103] within this area.

The small yard to the rear of the medieval hall within No. 21, Greenhill lay within the development scheme. There was no access to this yard at the time of the excavation as the toilet block at the north east corner of No. 19 (Fig 2) had not been demolished. The later ground works in that yard comprised a single narrow service trench which revealed no datable deposits or features but ground works at the western edge of the yard discovered a medieval well [202] which spanned the existing boundary between No. 19 and No. 21.

Medieval features

A very large, near-square pit [115] measuring 1.7m by 1.85m was revealed towards the southern end of the garden when trample layer [103] was removed. The sides, which were near vertical, were cut down 1.3m through fairly hard bedded sandstone bedrock. The lowest fill [117]/[118] comprised thin layers of natural sand with sandstone pieces derived from the bedrock (which would seem to indicate deliberate backfill) interspersed with occasional thin tip lines of beige ochreous material similar to the putative lime deposits encountered in cesspit [16]. The sandy fills showed signs of having been bleached or chemically affected. Six pieces of animal bone were recovered but there was no pottery.

The overlying fill was a bowl shaped layer of soft, mid brown silty, loamy sand [120]. This was similar in nature to the relict topsoil [55] encountered in trench 4 and was probably a slow accumulation of cess in conjunction with general silting and soil accumulation. A small assemblage of four sherds of pottery dated to either the 12th or 13th centuries were recovered along with three pieces of animal bone. Fill [120] contained a thin tip line [119] of greyish green silty material on the north side that may have been a more concentrated layer of cess and there was a thin tip line [114] of similar material slightly higher up on the south side. The overlying fill was a fairly clean reddish sand [113] that was probably redeposited subsoil placed as deliberate back fill. It contained some charcoal flecking and also a single sherd of pottery dating to either the 12th or 13th century. This backfill seems to have marked a temporary phase of stabilisation onto which a bowl shaped ring of charcoal enriched soil [112] c. 0.05m thick had accumulated. This was very consistent and could be traced around the entire feature. The charcoal may have been blown, dumped or washed in; the fill contained three small fragments of animal bone and no other finds. The remaining hollow had subsequently been deliberately filled in, firstly with re-deposited natural sand and

sandstone [111] which contained a modest assemblage of 33 sherds of pottery largely dated to the 13th century, 14 pieces of animal bone, a small piece of slag and one piece each of roof and floor tile of possible post-medieval date. The uppermost fill was a loamy topsoil type material [110] which contained four fragments of 13th or 14th century pottery and two pieces of animal bone but also a piece of clay pipe stem and a large piece of ceramic roof tile. These finds indicate some shallow disturbance of the top of the pit either from trample [103], or possibly during the digging of a later drain [98] and associated wall trench [100]; both were cut through the upper part of pit fill [110].

Pit [115] was cut on its east side by a smaller, much shallower pit [161] that was also hidden below trample [103]. The portion within the trench was 1.2m across north-south and apparently nearly rectangular with slightly curved corners (Fig 2). The pit almost certainly extended below service trench [22] and into the eastern trench edge but could not be investigated properly because of the live sewer pipe in trench [22]. The fill was obviously much disturbed by later service trenches [98] and [22] so no environmental samples were taken. Investigation of the part of the pit available for excavation showed that it survived to a depth of 0.52m below the top of the natural sand [19]. The sole fill was a light reddish brown sandy loam [160] featuring small charcoal flecks, daub fragments, four small pieces of animal bone and a single small sherd of pottery dated to the 14th or 15th centuries. A piece of roof tile recovered from the upper fill was probably introduced during disturbance by the later service trenches.

The function of pit [161] remains unknown, but a similar (although shallower) small pit [122] lay some 2m to the north west at the bottom of a short but moderate slope. It was totally excavated and proved to be sub-rectangular in shape, 0.9m wide by 1.1m by 0.3m deep (the base being c. 0.2m higher than the base of pit [161]). The fill was very similar in nature to the fill of [161] and contained three small sherds of pottery of probable 14th century type. The paucity of finds from pits [161] and [122] would seem to suggest that they were not rubbish pits.

Some 8m to the north of pit [115] a very large, sub rectangular scoop [130] was found below soil [107], the upper edges having been destroyed by later cultivation of that soil. The scoop measured 5.2m north-south by slightly more than 2m east-west (the eastern edge lay slightly outside the trench). Two quadrants of the feature were excavated, which proved the scoop to be 0.5m deep below the top of the subsoil, i.e., c. 0.9m deep originally if the sides were projected to the top of soil horizon [107]. The feature had steeply sloping sides, the base being mainly flat but with occasional slightly deeper hollows; there was no evidence that these were structural in any way. The fill material [129] was of identical texture but slightly lighter colour than soil [107]. The ten sherds of pottery recovered indicate a 13th or 14th century date. Eight small pieces of bone were also recovered along with two large pieces of ferrous slag and an iron nail.

The top of a well [202] was discovered c. 0.5m below the modern ground surface during the excavation of the last part of the footings in the south eastern corner for the new residential building. The well was deemed to comprise a serious soft spot requiring major replacement of the fill with mass concrete, so the upper fills were removed by machine with only time for salvage recording as the concreting was scheduled to take place shortly afterwards and could not be postponed.

Well [202] spanned the existing boundary between the gardens of Nos. 19 and 21. It was a beautifully square-cut shaft measuring 1.9m by 1.85m at the subsoil surface (Fig. 2). The sides dropped vertically for 1.5m to a horizontal ledge 0.2m wide extending all around the feature then the sides dropped utterly vertically again to below the level of the machine excavation. There was a deep groove cut into the rock sides at 2.25-2.5m below ground level and extending horizontally all around the shaft. Below the groove, the sides were covered in a thin, smooth layer of clay/lime mix [212] which may have been applied plaster. The inset groove may have been intended to hold some form of internal structure such as a timber collar.

The fills were removed to a depth of 3.2m (the maximum extent of the machine arm). Probing below this level with a metal rod appeared to indicate a consistent hard base c. 1.6m below the bottom level of machine excavation so the well would appear to have been c. 4.8m deep below the top of the natural sandstone. The top half of the machine removed fill was mainly a soft loamy sandy accumulation [201] but featured various intermittent lenses of fire waste, household debris and silty clay and silty sand which were probably thrown in as discreet dumps. Careful monitoring of the machining resulted in the recovery of 44 sherds of pottery dated to the 14th century, a single piece of bone and a single iron nail. The lower half of the removed fill was a similar loamy, humic sand [203] with similar deposits and lenses. A piece of cut wood (sf 16) recovered from the very base of the machining indicated that waterlogged deposits lay not far below. The machining of fill [203] resulted in the recovery of 18 sherds of pottery dated to the 14th century as well as part of a flagon (sf 15) and also part of a probable white ware bowl (sf 17), both of which would also date to the 14th century.

There were no other medieval features or layers in the garden.

Post-medieval

The only other features in the southern part of the garden of No. 19 were a 19th century brick wall [100] set at a right angle eastwards from the boundary wall [70], a brick culvert drain [98] of mid-late 19th century date and a later service trench [22] containing a 9" salt glaze sewer pipe. This ran parallel to drain [98] and was probably a replacement for that drain.

In the central part of the garden, removal of c. 0.6m depth of garden topsoil [20] by machine had revealed patches of a cobbled surface [26] formed from a single layer of close set, rounded oval stones from 0.08-0.15m in size. All of the stones were an identical hard quartzite with polished outer surfaces and must have been either gathered from a river bed or quarried from a late glacial deposit. Surface [26] was delineated on the east side by a kerb formed from thick, blocky sandstone pieces [72] set on edge in a rough line. The cobble surface was very patchy as it was cut by several large pits. The west side of surface [26] was almost certainly originally cut by wall [70] although any physical relationship had been removed by those later pits. Identical cobbles were found discarded in the fills of several other later pits in the immediate area indicating that those pits had once probably cut surface [26]. To the north, cobbled surface [26] extended right up to the north face of a brick wall [175]. The wall was formed of late 17th or early 18th century handmade bricks and the cobbles sealed the fill of the foundation cut [176] for that wall. A small area of cobbled surface [26] survived to the south of cellar [149] where it was laid directly on top of soil [31] / [107] sealing the construction cut [224] for an 'L' shaped brick foundation wall [223] which

was also built using bricks of late 17th or 18th century type and was probably part of a garden feature such as an archway; it cannot have been related to wall [70] as that post-dated cobbled surface [26].

The date of the bricks in wall [175] indicate that it was almost certainly part of an outbuilding depicted on Snape's map. The footings of wall [175] appeared to have been partially cut about at the west end to accommodate wall [70]. There was a gap [179] through wall [175] at the east end. This was evidently a doorway and the eastern continuation of wall [175] was represented by part of a robber trench [178]. It seems likely that wall [175] was demolished to make room for the garage which partially occupied this location until 1999.

The area to the east of the cobbles was largely occupied by medieval scoop [130], but this was surrounded by fairly intact areas of soil horizon [107]. This was a yellowish mid-brown silty sand loam that was c. 0.4m deep. This layer was without doubt a relict garden soil. In origin, it was undoubtedly the topsoil of the pre-medieval 'natural' soil profile. Numerous finds from the top of the layer indicated that it was still being actively disturbed or cultivated in the early-mid 18th century, i.e., right up to the laying of surface [26]. At the base, it gave way fairly abruptly to a thin 'B/C' horizon which merged downwards into natural sand [19]. In the vicinity of scoop [130] it was of comparable depth to cultivation soil horizon [55] in trench 4.

Soil horizon [107] extended eastwards into the eastern trench edge whilst on the west side it was bounded largely by wall [70] but did extend slightly westwards from under that wall at the north end (in the vicinity of pit [169]) where it was finally truncated by a large 19th century pit [147] on the north side and by cut [180] to the north west (Fig. 2). This arrangement left a small triangular island of soil horizon [107] surviving to the north of an early 19th century well [145]. The southern edge of the survival of soil [107] lay just southwards of service trench [21] where a small patch extended part way up a short slope almost to the north edge of medieval pit [122] at which point it was overlain by trampled subsoil material [103].

Evidence survived at three widely scattered locations that kerb [72] may have laid down the line of an old fence line [225] set at an oblique angle to the later boundary wall [70]. The intervening areas were almost entirely truncated by later cut features. At each location, three closely spaced small pits were found cutting the natural.

The northernmost group was found just to the north of well shaft [145] and comprised possible post holes [132], [134] and [136]. All were circular and shallow, cutting between 0.05m and 0.2m into the subsoil and probably representing merely the bases of deeper features whose upper edges were obscured within soil [107] probably by later cultivation. Feature [136] was cut by well [145] and contained one large sherd of 17th century pottery near the base. Feature [132] contained two sherds of 17th century pottery. The features were set in a rough line and it seems likely that they were contemporary although this could not be proved.

The central group of three small, shallow pits lay near the north west corner of pit [130]. Although apparently sealed by relict topsoil [107], logic dictates that the upper edges were obscured within that soil either by soil processes or later cultivation, making it possible that these were simply the bases of post holes originally c. 0.5m deep (projected upwards to the

top of soil [107]). The remnants of feature [128] contained a definite post-pipe for a post set at c. 45 ° and was the most convincing post hole of the three. A break in kerb [72] above post hole [128] might indicate that the post protruded through that kerb. The other features [220] and [222] were circular but very shallow with no obvious packing arrangement or post-pipes. None of these features contained finds.

The southernmost group of three possible post holes [47], [49] and [51] was found on the west side of trench 3 during the 1999 evaluation. All were shallow, cutting the natural sands to depths of 110mm, 60mm and 150mm respectively. They were filled with brown sandy loam free from inclusions (fills [46], [48] and [50] respectively). All three were apparently sealed below a soil layer of dark brown sandy loam [31]. This soil was clearly different to soil [32] and soil [33] to the east in that evaluation trench, but the relationship between them was lost when the later drain [22] bisected the trench, but it was thought that soil [31] was broadly contemporary with soils [32] and [33]. It was established during the excavation that soil [31] to the south of cellar [149] was part of soil [107] whose main extent was to the north and west of the cellar. All three post holes lay below the eastern periphery of the southernmost surviving area of cobbled surface [26], replicating the relationship of posts [128], [220] and [222] to kerb [72] to the north. If sandstone kerb [72] had ever existed in the area of trench 3, then it would have, without doubt, been removed by the service trench [90] for the 19th century drain [98].

At each of the three locations, the upper parts of the possible post holes had been largely destroyed by cultivation of soil [107] but their small size, circular shape and overall layout strongly suggest that they were the bases of post holes. Kerb [72] was provably placed over the central group at a slightly later date, possibly when the one of the timber uprights in post hole [128]) was still visible.

The basal remnants of a large circular pit [38] with sloping sides was found in trench 3 below service trench [22], most of the feature having been removed by that service trench. The surviving portion was filled with loose dark brown sandy loam [37]. No pottery was recovered but the fragments of ceramic roof tile present along with the fact that the pit was cut through soil layer [31]/[107] strongly suggest that the pit was post-medieval.

Several post-medieval pits lay along the west side of medieval scoop [130]. All were cut by wall [70] and three ([163], [165] and [167]) very obviously spanned the boundary, i.e. extended westwards a short way into the garden of No.17. The geographical arrangement of the other pits also suggests that they lay within an apparently widened garden for No. 17, their eastern limit possibly constrained by some physical factor such as fence line [225] or, perhaps more demonstrably, kerb [72].

Three of the pits ([163], [165] and [167]) were intersecting. The earliest of the three, pit [167] had largely been removed by a deeper sub-rectangular bowl shaped scoop [165]. The surviving portion of the west part of the pit contained a mid brownish grey sand but no finds. Pit [165] was a steep sided, oval shape and just touched the edge fill of medieval pit [130]. It contained a red-brown sand and numerous fragments of roof tile and post-medieval pottery. The most recent pit [163] was cut through the top centre of the two underlying pits and was sealed by cobbled surface [26], the full extent of the pit becoming fairly obvious once that surface was fully removed, whilst the edges of the underlying pits were partially masked within soil [107] possibly indicating cultivation of that soil between their formation and the

laying of surface [26]. Pit [163] was near circular with steep sides and a flat base. It contained a grey-black sandy soil [162] with large quantities of building rubble such as brick and mortar fragments and roof tile and contained pottery spanning the 14th to 17th centuries. The pits were probably for rubbish disposal whilst the pottery indicates that the pit complex probably spanned the 17th to mid 18th centuries. They may have been associated with construction works for the post medieval buildings shown on the site on historic maps.

To the west of cellar [149], surface [26] was cut by two large refuse pits [140] and [138] of mid to late 18th century date. Pit [138] contained old topsoil mixed with demolition materials including numerous fragments of roof tile and also pieces of handmade brick of 17th or early 18th century type. Pit [140] lay on the south side of pit [138] and was cut by that pit. It was also filled with old topsoil with large quantities of 18th century type building materials. Another large pit [169] to the north likewise contained numerous fragments of building materials of obvious 18th century date and sherds of light yellow brown glazed pottery in the upper fill and was not further excavated. The western end of pits [138] and [140] had been removed by the construction cut for wall [70].

Medieval pit [130] was bounded on the southern side by a large, nearly square cut [149]. This had utterly vertical linear sides and was filled with demolition debris and copious quantities of Victorian pottery. Although there was no evidence of any side walls, it seems likely that the feature was a cellar. The exact date of original construction remains unknown but the feature cut pit [140] which was of almost certain early to mid 18th century date. The area to the immediate south of the cellar was occupied by disturbance of late Victorian date extending southwards to the north side of recent service trench [22].

The area to the north of wall [175] was largely truncated by deep features of 19th century date. Much of the area was occupied by a large and very deep cut [102] which extended out of the trench at the north east corner, so its full size and shape remain unknown. It was excavated by machine down to 2m below the top of the subsoil without encountering the base. The lower fill contained frequent sherds of china and clay pipe of early-mid 19th century date. The sides were totally vertical and it may have been a sand quarry. The south western end of the feature was occupied by a brick well [143]. The relationship of well [143] to pit [102] was rather strange. The construction cut [145] for the well shaft was visible only on the north and west sides. It is possible that cut [102] was an earlier well which was robbed out and that well shaft [145] was dug 'alongside' [102] as a replacement and that the narrow circular brick lining [143] was built using the existing void of cut [102] for access, for the fill of [102] lay up against the eastern side of the brick lining [143]. Well [143] was subsequently abandoned and filled in with topsoil and demolition materials of mid 20th century date.

The south side of the shaft cut [145] for well [143] was cut by a large pit [147] extending almost to the north face of wall [175] and into the eastern trench edge. Pit [147], which contained finds of late 19th century date, had truncated all deposits to c. 0.5m below the top of the subsoil [19].

A late Victorian pit [182] cut the top fills of cut [102] in the extreme north eastern corner of the site. The top edges of pit [182] lay in the lower part of topsoil [20]. As already discussed, all of soil material [20] lying above cobbled surface [26] comprised landfill of mid to late 19th century date. Various other small rubbish pits including pits [94], [174], [178]

were found to the south of cellar [149] cutting the lower part soil [20]. All dated to the mid-19th century or later. Numerous other examples were probably removed during the initial site machining. It seems likely that brick walls [223], [125] and [100] were cut down to ground level at about the time of the deposition of imported soil [20] and that cellar [149] was back filled at about the same time.

5.3 *Sequences observed below the standing buildings*

In general, there were very few groundworks within the standing buildings. Finds including pottery ranging in date from the 15th to 19th centuries were found during the removal of various fireplaces in all buildings. The vaulted roof [204] for a cellar was found just to the rear of No. 21. The vault was formed of bricks which were of post medieval type. The cellar was not excavated.

A footing dug within No. 19 produced a sequence c. 0.5m deep from the existing quarry tile floor surface to natural sands. Most of the upper layers (contexts [205] - [209]) contained appreciable quantities of fire ash in association with pottery ranging in date from the 15th to 18th centuries. The lowest layer appeared to be trampled subsoil and contained pottery of 15th century date and may have been associated with the construction of the medieval hall on the site of No. 21.

5.4 *Descriptive assessment of the buildings at Nos. 17-21, Greenhill*

The following assessment summarises the form and development of the buildings forming 17-21 Greenhill. A full description of each compartment within the building is given as an appendix which details construction methods and surface treatments as observed before and during conversion.

The core of number 21 is a jettied two bay two storey timber framed building of mid-15th century date which formed a cross wing to a contemporary range running parallel to the street on the site of number 19. The quality of timber treatment on the first floor of the cross wing indicates that this range was not for servants and it is therefore clear that this was a hall and solar arrangement, with the solar alone now surviving at the upper end of the hall. It is possible that there was a further service wing at the other (western) end of the hall which continued beyond number 19, but there is no evidence in the standing building or below ground to either support or refute this. In its earliest phase this building was timber framed externally, with close studding in the areas visible from the street. At a later date, before the later 17th century, the west wall facing the frontage was plastered and decorated with bichrome pargetting. The south elevation was presumably also plastered but the evidence for this has been lost.

The south (front) wall and much of the east wall of number 21 have since been replaced in brick. The surviving elements of the mid-15th century building consist of the west (side) and north (rear) walls, the rear part of the east (side) wall, and an intermediate truss.

The ground floor layout of the building is unusual. The first floor bressumer which marks the junction between the hall and the solar ranges is elaborately moulded and clearly there was no framing beneath this. Communication between the two ranges was therefore uninterrupted. It therefore appears that the hall in fact continued into the solar range at ground floor. As the

hall was wider than one bay of the solar the central frame of the ground floor was interrupted towards the hall. This frame had a post directly below the eastern first floor post, but none below the western. Instead, the western part has peg holes as though for a brace, though it is not clear how this bracing would have worked. This suggests that the single ground floor post, now lost, may have been free-standing rather than incorporated within wattle and daub panelling.

The first floor layout of number 21 is a standard solar arrangement with two compartments each of one bay. The original roof was of single through purlins with common rafter pairs between the three trusses and with wind braces above the purlins at the end of each bay. The southern part of this roof has since been replaced, and turned through a right angle to run parallel with the street.

In the 17th century the hall block was replaced with the present core of number 19. In plan the building was of two storeys, parallel to the street. It was timber framed, but almost all of the timber framing has since been replaced but at the rear (north) at first floor some timbers survive which indicate that the building incorporated many reused timbers which are likely to be derived from the demolished hall range. There was an end chimney stack at the western end of number 19, which was of stone at the lower levels and brick externally. The roof is of two pairs of trenched purlins with queen post trusses at either end. The tie beam of the eastern truss sits on top of the wall plate of the solar block and is trenched to accommodate the pre-existing rafter feet for the roof of the adjacent solar.

Around the turn of the 18th century number 17 was built. This was a two bay two storey brick building with its gable end onto the street. It has one intermediate truss in the roof which is of double cruck construction which is very unusual.

The 19th century saw many changes. Early in the century, the front (south) elevation of numbers 19 and 21 was rebuilt and united in Flemish bond brickwork, with a two course plate bande dividing the two storeys and with dentillated eaves. There is a half brick wide plinth at the base. When this refacing was carried out the front (south) bay of the solar roof (number 21) was turned to run continuously with the roof of number 19.

Further Georgian modernisation was seen in the extension to the rear of number 19 as a two storey block at right angles. Within the south-west angle of this a staircase was built for number 17. Throughout the history of these two buildings there have been flying freeholds which have changed with time. This suggests that they were jointly owned. Towards the end of the 19th century the front elevation of number 17 was refaced, using blue engineering brick to pick out the architectural detail.

During the 20th century further alterations consisted primarily of the addition of further partitions and internal finishes which obscured the majority of the historic elements of fabric which had not been obscured by earlier alterations.

6 Quantification, quality and location of the primary archive

6.1 *Quantity summaries of 'paper' records*

The written record comprises:-

- 225 context sheets for containing data for all of the 225 observed individual contexts. The structural features observed during recording of the standing buildings (Nos. 17-21, Greenhill) are not included within the context record.
- 66 context assemblage sheets quantifying all artefacts for the 63 contexts from which such materials were recovered.
- 18 sample sheets for 18 samples with 1 sample index sheet
- 8 small finds, 8 record sheets with 2 small find index sheets
- 31 fieldwork drawings for the excavation and watching brief on 17 separate drawing sheets with 2 drawing index sheets
- 18 fieldwork drawings for the building recording on 4 separate drawing sheets.
- The levels register comprises:-
 - a) 7 A4 sheets with 240 spot heights for plans
 - b) 1 A4 sheet with 10 levels for section datums
- The photographic record totals 28 films comprising:-
 - a) 12 black and white films- with record sheets
 - b) 14 colour slide films - with record sheets
 - c) 2 colour print films - with record sheets

6.2 *Summaries of artefactual and ecofactual material including percentages by period, provenance and range*

Of the 225 contexts, 15 contexts (Nos. 204-218) relate to contexts observed in groundworks within the standing buildings on the street frontage and cannot be related to their true position on the site matrix although the finds recovered from 8 of those contexts have provided useful spot dates for the stratigraphic sequences observed below the buildings.

Pottery

A total of 692 sherds (20.72 kg) of pottery was recovered from 56 contexts of which 426 sherds were medieval, 56 sherds were post medieval (i.e., later 16th - early 18th centuries) and the remaining 110 sherds were more recent.

The more recent material was largely derived from very obviously recent contexts; this material is grossly under represented as the collection strategy for modern material from such contexts was highly selective, the intention being merely to retain some proof of date, with the bulk not being retained. Occasionally, such material was found in the very top fills of

medieval features where it was retained as it formed a useful indicator of disturbance and trample.

The medieval pottery was recovered from a total of 37 contexts of which 4 contexts were situated within the standing buildings and are not included in the table below. Within the evaluation trenches or main excavation area, medieval pottery occurred as residual material in 11 later contexts but c. 84% (by sherd count) was recovered from the following 22 medieval contexts:-

<i>Cut</i>	<i>contexts</i>	<i>Sherds</i>	<i>comments</i>
cesspit [16]	4	73	+ candle maker's trough & whole flagon
well [86]	4	134	! sherd of post-medieval in lowest fill [109]
cesspit [115]	4	42	top fills [110] / [111] have some disturbance
pit [122]	1	3	no later material
pit [130]	1	10	no later material
pit [161]	1	1	no later material
hearth [200]	1	8	no later material
well [202]	2	63	+ part of flagon & of bowl - no later material
soil [32]	1	7	no later material
soil [33]	1	1	no later material
soil [107]	1	(>5)	includes some later material
soil [55]	1	(>3)	includes plentiful later material
<i>totals</i>	22	>350	

Table 1 - dated medieval contexts

Post medieval pottery (up to the early 18th century) was recovered from 13 contexts of which 4 contexts were more recent and the material was residual.

Ceramic tile

A total of 29 pieces (2.342 kg) of roof tile was recovered from 17 contexts. All contexts except for [13], [110], [111] and [160] were post medieval. The tile from those four medieval contexts was all found in the very top of the features and may be intrusive from later disturbance. Tile from context [210] may be 16th rather than 15th century.

Ceramic roof tile cannot be closely dated. The original purpose of collection was merely to test for the presence or absence of such tiles in medieval contexts; the recovery distribution shows that there is no reliable evidence for the disposal of either roof or floor tiles in undisturbed medieval contexts at Greenhill. It will be interesting to compare this result with eventual analysis of the excavations at 15, Sandford Street and also the site on the northern side of Sandford Street.

Floor tile

A total of 11 pieces (0.952 kg) were recovered from 4 contexts. Only 1 piece was from a medieval context (the very top of fill [111] of cesspit [115]) and even that piece may have been from late infilling or from trampling associated with topsoil stripping [103].

Animal bone and shell

A total of 154 pieces of animal bone (3.005 kg) amounting to 43.4 “countable” fragments (see Appendix B) was recovered from 29 contexts of which 28 contexts included datable pottery.

All of the animal bones from Greenhill were collected by hand, so consequently an under-representation of bones from the smaller species is to be expected. Some small bones may be discovered in the residues following flotation of the bulk environmental samples.

The bone assemblage is tiny. Some 79% of the remains date from the medieval period but the assemblage also includes post-medieval and recent material (Appendix B, Table 1). The recovery of pieces of a domestic donkey, albeit from an 18th century pit, is of interest as the species is rarely recovered or recognised on British archaeological sites of any period.

Only 2 contexts dating to the 16th-18th centuries contained bone, whilst animal bone (including the donkey bones and the sole piece of shell) was recovered from 7 contexts of 18th century or later date. The following contexts containing bone can be demonstrated to be medieval (by stratigraphic evidence supported by pottery dating):-

cesspit [16] - two fills

well [86] - five fills

cesspit [115] - five fills

pit [130] - sole fill

pit [161] - sole fill

hearth pit [200] - upper fill

well [202] - 1 fill

relict soil horizon(s) [33] , [52] and [107] (all featuring cultivation or disturbance up to the early 18th century)

Environmental (bulk soil) samples - provenance and reliability

Of the 18 samples, 14 are bulk soil samples taken for flotation for charred remains. The nature of the underlying sandstone bedrock meant that no true waterlogged contexts were present on site. In all cases, the sample points should be unaffected by later activity although a small amount of worm and fine root activity is likely.

Sampling was restricted to secure, undisturbed contexts of provable medieval date that were, by their very nature and original function, likely to contain useful environmental evidence. In general, sample positions were chosen so as to maximise recovery of visible charred or other materials (e.g., perceived ‘lime’ or ‘cess’ deposits). Post-medieval features were not sampled for any purpose.

Only the upper fills of the two medieval wells [86] and [202] were excavated. The lower, potentially waterlogged fills which would probably contain a wealth of environmental data specific to the site lay at an unknown depth but possibly several metres below. The sampling programme within the upper fills of these wells was scaled down due to perceived problems with the provenance or source of the materials present, for the pottery indicated that the

uppermost fills were of 13th or 14th century date, i.e., the working life of the wells may have been relatively short which might indicate that the wells had been deliberately backfilled. This interpretation was further supported by the presence of occasional dumps of a slightly marly sand subsoil which indicated short phases of deliberate backfill. The material was of a type unlike the immediately local subsoil which then introduced the possibility that the fills, or at least some (unknown) proportion of those fills, may have been imported for the task from elsewhere, i.e., environmental data contained within the samples may not reflect on-site activity. 2 samples were taken from the lower observed fill of medieval well [86].

The cesspits were felt to be more reliable receptacles for environmental data specific to on-site activity. Sample Nos. 1-4 from cesspit [16] were assessed as part of the 1999 evaluation. That assessment (in Stone *et al*, 1999a) found that the fills of pit [16] contained charred remains and also that in addition a degree of preservation of non-charred material such as small mammal, fish and insect remains had occurred in the lowest fills of the pit due to anaerobic conditions and also through partial mineralisation of organic materials. That assessment highlighted the desirability of taking more samples from the lower fills and sample Nos. 5-10 were taken for this purpose and await processing. In addition, 2 samples (30 litres) were taken from two lower fills of cesspit [115] and could equal the samples from pit [16] in quality. A single sample (c. 2 litres) was taken from the burnt deposit at the base of medieval hearth [190].

It is suggested that all samples be sub-sampled (1 kg) for possible chemical and pollen analyses. Useful basic chemical analyses could include tests for phosphate and lime which should be fairly straightforward (Hammond, 1981). At present, ascription of function for possible tanning/industrial process pits and possible cesspits, rubbish pits and storage pits is usually by 'analogy' to 'similar' features within the archaeological literature. These analogies can be self-serving resulting in circular arguments. One further complication is that a pit dug for one purpose might become used for another upon abandonment (e.g., a storage pit or well might be re-utilised as a rubbish pit or cesspit).

Alternative and more refined chemical tests might aid identification of chemical indicators specific to human cess or animal wastes (e.g., cupro-sterols, residue analysis) which should aid identification of function, e.g., the presence of strong concentrations of animal urine probably indicates an industrial or steeping process and almost certainly rules out a cesspit. Some recent research sources into this field are set out at the end of section 11 below. Such analyses could also potentially assist in the comparison and interpretation of the various putative tanning and cesspits at 15, Sandford Street by helping to avoid interpretation based on circular arguments.

All samples await processing. There seems little point in carrying out an interim physical assessment of the samples as it is known from the evaluation assessment that the samples taken from cesspit [16] (which represent 50% of the samples awaiting processing) should contain useful environmental evidence and it is likely that the other samples also do so.

Slag

Slag or ferrous lumps were recovered by hand selection from a total of 11 contexts of which 9 were medieval and two early post-medieval. 5 of the medieval contexts relate to well [86],

whilst slag was recovered from a single context within each of cesspits [16] and [115], pit [130] and soil [32]. It is proposed to analyse this material in-house at a later date.

Wood

A single piece of cut wood of undoubted medieval date was recovered from the lower investigated fill [203] of well [202] suggesting that total waterlogging lay not too far below. The analysis of this would be unlikely to produce information of any real value.

6.1.4 The condition of the material and likely nature(s) of preservation

Glass

The only material requiring laboratory conservation is the glassware from cesspit [16]. No other glassware needs further care.

Ceramics

Ceramic artefacts seem to have been little affected by soil conditions on site and survival was probably 100%. Virtually all ceramics were recovered by hand (some may await discovery in the bulk environmental samples) which obviously introduces bias resulting from differential rates of recognition of artefacts between individual excavators accentuated by differential recovery rates arising from different techniques of manual excavation.

No further useful analyses can be carried out on the ceramic roof tile. The material has served its purpose and should ideally be discarded or weeded out.

All other ceramic materials have been washed, dried and marked and should be stable, without treatment, for long term storage.

Unburnt organic materials

No true waterlogged layers were encountered so survival of unburnt organic materials was very low although previous assessment of environmental samples from cesspit [16] has indicated partial preservation of minute organic remains by mineralisation within partially anaerobic conditions at the base of a deep pit. No leather was recovered during the project.

Bone and shell

The preservation of bone on site was fairly poor due to the general acidity of the parent materials for the various soils and deposits. Shell was limited to a single piece from 19th century context [65]; this would seem unusual in comparison to medieval sites elsewhere and suggests that shell has simply not survived. The physical condition of the medieval bones was fair to good, and of the post-medieval remains good to poor. The assessment of the bone (Appendix B) has stated that the assemblage is small and it does not warrant statistical analysis, so no further work is required (Ian Baxter, *pers. comm.*). The bone has been washed, dried and marked and should be sent for archival storage. The bone report contains sufficient data for future research. There is no need for any remedial conservation.

Metal objects

The assemblage comprises six iron nails, of which only one was from a provable medieval context. This has little research potential and future conservation would seem pointless.

7 Statement of potential of components for analysis

It is intended to amalgamate the results of the analyses on the below ground works with those of the standing buildings. However, for the purposes of clarity, these elements are here treated separately.

7.1 *The excavation and watching brief*

Previous groundworks dating to the 18th to late 20th centuries had removed all horizontal layers predating the 18th century from c.90% of the main excavation area. This truncation has almost certainly led to the removal of many of the smaller and shallower cut features so typical of urban settlement (e.g., small pits, beam slots, drains and post holes). This loss included almost all deposits within the standing buildings which is likely to have been the area of any early buildings, and would have included information about the extant 15th century building.

The medieval period is solely represented by the lower parts of eight larger cut features along with remnants of the medieval topsoil (which bore signs of heavy disturbance or cultivation into the 17th or 18th centuries). Nonetheless, the medieval cesspits and to a slightly lesser extent the two wells and other smaller pits provided good, largely undisturbed habitats for environmental and artefactual data relating to the use of the site in the 13th or 14th centuries, which, along with analysis of the layout of those features should provide answers to most of the questions posed in the original research design.

The Brief and Specification indicated the following research questions prior to commencement of the project.:

- a) *The date of the earliest occupation and development of this part of Lichfield*
This will be primarily answered by the pottery assemblage.
- b) *The nature of the occupation and how did it vary with time?*
Analysis of the artefactual assemblage and also the nature of the individual features e.g. cesspits and wells. These were not replaced in the later medieval period.
- c) *were the plots now relating to 17 and 19 originally separate, or have they been subsequently divided?*
Analysis of the relationship of surviving medieval features to the boundary between Nos. 17 and 19 strongly suggests Nos. 17 and 19 were subdivided along the existing line in the medieval period with a brief shift to the east in the early 18th century before re-establishment on the old line in the later 18th century. The position of well [202] suggests that the gardens of Nos. 19 and 21 were possibly once the same garden; the building recording programme may be able to test this.
- d) *what was the nature of the activities carried out within the whole land unit upon which nos. 17-21 now stand?*
The pottery and bone assemblages for the medieval and later periods would be consistent with domestic occupation. The nature of the features, e.g., the wells and cesspits is also strongly indicative of a largely domestic occupancy. This is probably

confirmed for the later medieval period by the medieval hall within the standing building of No. 21.

Evidence of manufacturing is hinted at by the limited occurrence of slag and also some components of bone assemblage, but due consideration must be given to the possible origins of materials dumped into the wells and pits. There is no real evidence for major industrial activity at any period except for documentary evidence for a maltings in the late post-medieval period. It is possible that later truncation of the site has removed evidence.

- e) *Is there any evidence of the three-fold division of activities seen elsewhere in Lichfield (i.e. is the plot divided into a building/activity/garden zone)?*

The presence of the wells and cesspits in the zone close to the rear of the frontage houses would seem to support this hypothesis, as would the survival of a relict garden soil further to the rear of plots as well as the paucity of cut features in that northern zone in the medieval period.

- f) *The conditions of existence of the people who lived here, and how did they vary over time (e.g. status, occupations, diet, dress)? What can be determined about the rural hinterland from which they procured their food etc.?*

The relatively limited nature of the survival of features and deposits means that little more can be done although chemical analyses would probably aid interpretation of features and be of use elsewhere.

- No new research questions have been identified. The relatively limited extent of the survival of archaeological deposits would almost certainly place limitations on the ability of the site to answer research questions more sophisticated than those laid out in the original written scheme of investigation. The only exception would be the possible chemical analysis of a small number of samples from the contents of the two 'cesspits' in order to test the function of those pits.

7.2 *The standing buildings*

The project confirmed Joyce's findings that the property included the core of a 15th century range. Further analysis of the plan form of the building during its development by reference to the drawings made on site, the photographic record and the written notes (Appendix C) will yield a closer understanding of the development of the building from the late medieval period to the present.

Of particular interest is the relationship between the ground floor of the hall and the solar block, which appears to have been of unusual form. The evidence could be interpreted as suggesting an aisled layout, but this remains speculative.

The close inter-relation of Nos. 17 and 19, with flying freeholds, betrays a complex tenurial history. A study of the development of these areas may have a bearing on the layout of the plots to the rear of the building. Within No. 17 the double upper cruck is an unusual constructional form. It would be of interest to seek parallels for such a late use of this form in brick domestic houses.

7.3 *The potential value of the data collection to local, regional and national research priorities*

The correlation of the evidence of the standing buildings and that of the excavation and watching brief was hoped to provide a closely linked understanding of the development of the site from the earliest occupation to the present. It is, therefore, unfortunate that the deposits below the standing buildings were removed in the post-medieval period, destroying any possible evidence for the nature of earlier buildings (or other activity) on or near the frontage. Equally, the general absence of 15th and 16th century activity to the rear of the standing buildings places a restriction on correlation, though this absence may reflect a change in status. Despite these limitations, the two types of evidence are susceptible to comparative analysis for the period from the 15th century onwards, and particularly from the 17th century.

Recent authors have attempted far reaching analysis of the development of Lichfield based on property boundaries shown on historical maps. The level of analysis of property boundaries allowed by the surviving features at Greenhill allows for some reappraisal of existing hypotheses and has implications for local study, as some of the hypotheses advanced by Slater and Bassett can be addressed. Bassett's complex proposal for the shifting around of the road scheme would be difficult to support on the findings of the excavation. Although the frontage area had no medieval deposits, the building recording undertaken on the late medieval solar occupying No. 21 indicates that the street frontage has not altered since that time, whilst the excavated features demonstrate that the areas to the rear were probably back plots in the 13th and 14th centuries. It therefore seems unlikely that there has been any significant movement of the frontage northwards. Although the area of truncation was extensive, it was not very deep, perhaps 1m to the rear of No. 17 and 0.5m to the rear of No. 19. Earlier large pits, if they ever existed, should have survived behind No. 19.

The pottery assemblage was predominantly local in character and, with the glass urinals, will be of regional rather than national interest for future excavations. The complete jug and the candle maker's trough are of sufficient quality to be offered to a national museum.

The environmental data is likely to be of local or possibly regional significance. Viewed as a whole, publication in a suitable local journal should probably be sufficient. A notable exception, of national importance, is the candle-maker's trough which should be subject of separate short report in national journal such as *Medieval Archaeology*.

7.4 *Primary sources or relevant documents which might enhance the study of site data.*

Learned societies such as the Staffordshire Records Society, journals such as the Staffordshire Historical Collections and individual scholars (e.g., Cox, 1886; Vaisey (ed.), 1969; contributors to the Victoria County History, 1990) have devoted considerable time and effort, often amounting to decades, to tracking down, transcribing and analysing old documentary sources for Lichfield held both locally and in national archives such as the Public Records Office. The desk based assessment has scanned all such standard academic works for medieval and post-medieval records relating to Greenhill and inspected all map sources; further study is unlikely to discover previously unknown material without duplicating much of the original research undertaken for all the previous efforts; the scale of such a task would not be cost-effective. Further study of readily available secondary sources i.e. excavation reports from other comparable local or regional sites would, however, be desirable.

8 Discussion

8.1 Overview

Only a small yard to the rear of No. 21 lay within the development area. The limited ground works in that yard revealed no datable deposits or features so it will not be possible to compare that yard area to the rear of a provable portion of the high status mid-15th century building with the results of the main excavation to the rear of Nos. 17 and 19.

The earliest trace of activity is almost certainly represented by a single flint flake from an animal burrow in evaluation trench 4 (context [73]). The flake shows signs of working and may be a crude knife blade. It is undated at present. Previous excavation at the nearby St. Michael's Church found five worked flint fragments of Mesolithic date (Wilson, 1982).

All the other finds recovered were of medieval or later date. Little direct evidence has been found for intensive settlement in Lichfield predating the formation of the 'new town' in the mid to late 12th century (Hodder, 1982; Carver, 1982). The three sherds of sandy ware recovered during the 1999 evaluation led to the conclusion that there may have been some activity on the Greenhill site in the 12th century although there was a perceived danger that the sherds were imported onto site as relict materials from some other location.

A few sherds of pottery possibly dating to the 12th century were recovered during the excavation from the highest fill of well [86]. This fill overlay fills containing pottery of more certain 13th century date indicating that the earlier pottery was, beyond doubt, residual material and probably imported onto the site. A few sherds of pottery of possible 12th century date were recovered from the lower fills of cesspit [115] in association with material more securely dated to the 13th century; the presence of such pottery possibly indicates that the early usage of that cesspit was c. 1200. It would however be unwise to state baldly that the site was occupied at this early date. 13th century material was common in the higher fills and the pit seems to have been completely abandoned in the 14th century. This date sequence is apparently confirmed by the sparse dating evidence provided by a few sherds of 14th or 15th century date in the overlying pit [161].

The lack of provable 12th century features is not necessarily conclusive given the degree of truncation of the site, but if the height of the top surface of medieval soil [107] is projected southwards, then it would not be unreasonable to expect that the basal portions of features deeper than c. 0.5m should have survived below trample [103] at the south end of the garden of No. 19 and likewise, features deeper than c. 1m should have survived in the southern part of the garden of No. 17.

The majority of the medieval pottery was made up of either whitewares or sandy utilitarian and table wares. Evidence from other sites in the region indicates that the whitewares were in use from the around the mid 13th century until the 14th century. However, their *floruit* appears to be the later 13th century and first half of the 14th century. Oxidised red and orange sandy wares became more frequent from the later 14th century onwards, usually forming the main component of 15th century groups.

The small quantity of slag and a few horn cores represent the only materials arising from manufacturing processes, but these materials were simply casual or accidental discards

incorporated within deliberate backfills into wells and cesspits. There were no structures of an industrial nature unless hearth [190] served an industrial rather than domestic purpose. There is no way of deciding this issue on the evidence from the limited amount of the structure available for excavation. The general paucity of artefacts indicative of industrial processes may be more apparent than real due to the removal of most of the horizontal stratigraphy (except for a limited area of relict topsoil [107] in the northern half of garden of No. 19) during the various post medieval developments of the site.

The relative paucity of sandy oxidised wares (typically of later 14th-15th century date), of Midlands purple wares (15th-16th centuries) and of Cistercian wares (typically late 15th-16th centuries) suggest that the occupation of the site decreased after the 14th century with a slight resurgence in the 16th century increasing in the late 17th centuries and markedly increasing during the 18th century. The street frontages of No. 17 and 19 were redeveloped c. 1700-1750 and the back lands of No. 17 were virtually entirely taken up with brick buildings erected before 1780, whilst the garden of No. 19 was partially occupied by outbuildings by the 19th century. The groundworks for the foundations and floors for these buildings (e.g., trample [103]) must have removed earlier archaeological deposits to some extent and it is possible that the paucity of late medieval and early post-medieval deposits or artefacts may in part be explained by these works; the sheer extent and efficiency of demolition works in the garden of No. 17 c. 1970 entirely explains the paucity of such remains there, although the presence of early artefacts within the fills of the large, rectilinear demolition ground works seems to indicate that early features or deposits had once existed.

The pottery sample is relatively small and may therefore be misleading. The very existence of the late medieval hall and solar arrangement which occupied Nos. 19 and 21 (and possibly No 17) contradicts the apparent absence of evidence of later medieval occupation whilst the relatively high status of that building suggests not abandonment but perhaps a change in the use of the site, e.g. a cleaner use of the site, reflecting that higher status.

A shortage of 14th-15th century pottery was apparent at both Lichfield Arts Centre (Stone, R, 1999, MAS 066) and Bird Street, Lichfield (Stone, R, 1999 MAS 062 and 103) but these too were small assemblages. A larger pottery assemblage from an evaluation on the north side of Sandford Street (Stone, R. *et al*, MAS 083) produced a continuous sequence from the 12th century through to the post-medieval period.

The pottery indicates that both wells and both cesspits were filled in during the later 13th or 14th centuries with no obvious replacements. In the case of the wells this may simply indicate a switch to piped water from the medieval scheme for which Lichfield was famous, although there would probably have been a severe logistical problem in getting a 'head' of water up to Greenhill. Alternatively, replacement wells may have been dug at a more sensible location down slope at the extreme northern end of the gardens where the presence of a much later brick built well [145] indicates the presence of an aquifer; the medieval backplots almost certainly extended northwards of well [145], i.e., outside the excavated area. The lack of replacements for the cesspits might imply cleaner usage of the site arising from a change to higher status.

Most of the medieval bones derive from well [86] or pit [115]. The material from well [86] is largely consistent with domestic kitchen refuse. The other deposits are too small to attempt an interpretation. There is some evidence for the use of fallow deer antler, sheep and goat

horn in craft working, but this activity was not necessarily taking place in the immediate vicinity. The most notable discovery from the post-medieval period were the donkey bones in pit fill [63] to the rear of 15, Greenhill. The bones retained were part of a complete burial, perhaps a sort of pet burial. Donkeys are documented as carriers of milk for both cheese-making and human consumption in the recent past (Dent 1978).

The cesspit [16] in Trench 1 is undoubtedly the most significant feature of the site. The assemblage this produced include a complete pottery jug, a pottery candle-maker's trough and glass urinals, all of which could be considered to be of a quality worthy of museum display. Several large sherds forming a substantial portion of a single vessel interpreted as a candle-maker's trough were recovered from contexts (15) and (17). This type of vessel is very rare in Europe and this is apparently the most complete example from Britain. The date of the vessel is difficult to establish precisely, for as already noted, whitewares appear to have been in use from the around the mid 13th century until the 14th century.

Pit [115] contained a much less rich artefactual assemblage, but should provide equally good environmental data, for there is no reason why survival of environmental evidence should not be equal to that encountered in pit [16]. The finds succession suggests early usage in possibly the later 12th century (but, as noted, some of the material may be residual) and infill through the 13th century and abandonment in the 13th or 14th century.

8.2 The function of specific features

Thin, dark black brown deposits usually indicative of cess were occasionally encountered in pit [16] but were notably absent from any of the fills of pit [115] leaving a slight problem with ascription of function for the feature. Both pits appeared to have intermittent and deliberate lime deposits. Possibly the 'solids' were disposed of elsewhere, e.g., as 'nightsoiling' of the nearby gardens or fields for excrement was an important component of manuring in the middle ages. The presence of three glass urinals within pit [16] might also indicate that the pits were mainly for the disposal of urine. Alternatively the absence of significant cess deposits may indicate that the pit was regularly cleaned out and the fills encountered merely start at the time when the pit was going out of use rather than representing the whole history of usage of the pit. It seems unlikely that readily available chemical analysis (e.g., phosphates or cupro-sterols) could throw any light on this problem but would aid interpretation of the function of the pits.

Although feature [86] was not fully excavated it was almost certainly a well. It was excavated to a level deeper than cesspits [16] or [115] and probed to below 2.6m depth at which it would have been more than twice the depth of either cesspit. An indisputable medieval well [202] was found c. 15m to the east during the watching brief.

Both wells were notable for the complete lack of 'lime' lenses within their upper fills; it seems that they were not re-utilised as cesspits, whilst the frequent deposition of subsoil within the top of well [86] would seem wasteful of space within a rubbish pit; the relatively low level of artefactual debris seems to confirm this although refuse disposal seemed to be a slightly more common occurrence within the fills of well [202]. Both wells seem to have been backfilled within the 13th or 14th centuries and there were no obvious replacements until the 18th century.

Wells [86] and [202] were cut through solid, coarse sandstone beds of a highly permeable nature. The presence of a natural aquifer is demonstrated by the natural spring shown some 100m to the east on Snape's plan of 1781; this would lie c. 3-5m below the top of wells [86] and [202]. The presence of a brick lined well [143] shows that the aquifer extends under the northern end of the gardens.

Well [202] was beautifully square cut and is clearly paralleled by a near identical square cut well shaft [440] found during excavations at 15, Sandford Street. That well contained a carefully constructed oval lining formed from carefully shaped ashlar blocks. These sat on a ledge in the bedrock c. 3m below ground level. This lining had been left *in situ* leaving a potentially working well whilst the lining in well [202] may have been salvaged before the deliberate backfill. Alternatively, the horizontal groove around well [202] might indicate that the well had a timber revetment whilst the bedrock forming the lower sides may have been plastered below 2.5m, perhaps in an attempt to retain water. Simple analysis of sample No. 18 for the presence of lime should at least test the nature of the plaster. The lack of plaster from higher up may also indicate the previous existence of a lining. Well [86] to rear of No. 17 was much smaller and less tidily cut than well [202] which seems at odds with wealth of finds from the adjacent cesspit [16].

Nonetheless, the herring bone arrangement of closely spaced diagonal slash marks into the bedrock of the lower sides of well [86] were either pick or chisel marks and indicate that some care or pride was taken to shape the shaft. The bedrock was not particularly hard and these marks would probably not have survived prolonged exposure to frost and rain. The lack of such marks in the upper eroded bowl supports this. The slash marks have direct parallels in the bedrock forming the lower sides (below c. 3m) of well [440] at 15, Sandford Street although the upper sides of the shaft of that well have more in common with well [202]. It is unlikely that well [86] could have featured a massively constructed stone lining 'insert' like well [440], there simply would not have been enough room, but the upper wider part of well [202] would have been large enough to contain such a lining.

Hearth [190] is also of interest as it has a near or close parallel at 15, Sandford Street where a three walled structure (context [513]) was sited much closer to the street frontage; unfortunately, the upper part of this example had been removed by a later pit and the arrangement of the upper part of the stonework remains unknown. Another stone-lined hearth at 15, Sandford Street (context [251]) was probably of comparable size to hearth [190] but the side 'walls' were probably much lower. The burial of a hearth like [190] within a deep pit may have been simply a way of allowing materials to be dried above at ground level or may have been a response to the serious threat posed by fire in medieval towns. It is known that the west part of Lichfield experienced a disastrous fire in 1291 (Bassett, 1982) and the replacement of thatched roofs with ceramic tiles in the medieval period may have been, at least partially, a response to the risk of such fires.

The western edge of scoop [130] was linear and broadly parallel to the modern day property boundary. The nearby postholes [220], [222] and [128] contained no finds and remain insecurely dated but would seem to be stratigraphically and spatially related to the much later kerb [72] and probably part of a putative fence line [225]. In any case, these postholes were probably not related to pit [130]. There were no other postholes around the northern edge of the scoop and the area to the immediate south of the scoop was entirely truncated by cellar

[149]. The lack of post holes around the northern edge would seem to indicate that there was no ancillary or covering structure.

8.3 *The continuity of boundaries*

The fairly limited presence of medieval features poses some limitations on the aspirations of the research design although some factors can probably be answered e.g. the existence of separate plots in the medieval period and also the line of their boundaries.

Comparison of Snape's map of 1781 with more recent maps indicates that the excavation area encompassed most of the garden area of two individual properties whose boundaries were established before 1781. The timber skeleton of the late medieval solar survives within much of the building on the street frontage of No. 21 and the programme of building recording found that it might have extended into No. 19 which obviously posed a question concerning the arrangement, number and date(s) of the garden plots.

The garden of Nos. 17 and 19 each had a single deep cesspit. Whilst No. 17 had a well, well [202] spanned the existing boundary between No. 19 and No. 21 indicating that the garden of No. 19 could have been part of the rear plot for the medieval hall. Well [202] was at a rather awkward angle to the boundary and this is not fully understood but might be further tested by analysis of information from the programme of building recording.

Of the medieval features, well [86], cesspits [115] and [16] and the other medieval pits [122], [130] and [161] are aligned parallel to the existing plot boundaries which strongly suggests that the medieval boundary was parallel or near parallel to the existing boundary. Two of these pits, namely [115] and [122], lay hard up against the existing boundary between Nos. 17 and 19 suggesting that it may date to the medieval period. The surviving medieval timber building (No. 21) indicates that the present street frontage corresponds exactly with the late medieval line.

The boundaries between Nos. 17 and 19, within the buildings, include flying freeholds. The inter-relation of the buildings suggests that there may have been common ownership or tenancy for various periods, or for an extended time, between the 17th and 19th centuries. Analysis of the correlation between this evidence in the buildings and the evidence of the excavation may provide further understanding of the development of plot layout.

8.4 *The issue of Greenhill as suburb or a settlement pre-dating the new-town*

Taylor argued that the early settlement of Greenhill/St. Michael's developed around a trapezoidal green at the junction of Greenhill and Rotten Row (Taylor, 1969, 49). Bassett argued that the original street frontage of Greenhill lay further north and that the existing layout of the junction of these two roads was a consequence of the medieval construction of Tamworth Gate (and an earlier gate nearby which it replaced), just to the west of the green (Bassett, 1982, 110). He postulated a later move westwards, accompanied by a change of orientation when the road moved southwards (Bassett, 1982, 110). He interpreted this resulting new trapezoidal area in Greenhill as a market place with new 35 foot wide burgage plots laid out to the north and south, running back 200 feet. These would include 17-21, Greenhill. This interpretation was disputed by Slater, who considered that the change of orientation resulted not from changes to the road but to a pre-existing field system which was

itself irregular (Slater, 1985, 18). He considered that the area directly outside Tamworth Gate was originally clear for 250 feet eastwards (i.e., to just beyond 21 Greenhill). The evidence produced by Slater and Bassett could support either of their interpretations. It would be difficult, on the findings of this excavation, to support the idea that the street frontage on Greenhill ever lay further northwards for such changes should have led to considerable re-digging of cesspits or have created a far more obvious set of secondary features.

The existing lane separating the plots of Nos. 15 and 17, Greenhill is shown on Snape's plan of 1781 where it would appear to have been the sole access to a block of agricultural land. It may have been a fairly ancient access although the later watching brief on the service trenches that crossed this lane found no traces of earlier road surfaces or any other archaeological activity predating the tarmac. By 1781, the lane had become a side street off Greenhill containing a terrace row of buildings in the garden area of No. 17. There were no groundworks within the lane near the Greenhill frontage so it remains unknown as to whether or not the lane was originally a burgage plot.

On Snape's map, the garden plots to the east of the lane (i.e., Nos. 17-21, Greenhill) are set obliquely to the street frontage. This layout seems awkward and must have arisen from some physical or practical cause, possibly the existence of the lane or the existence of earlier burgage plots running eastwards from George Lane. To the west of the lane, Nos. 9-15 front onto Greenhill but have very short gardens. The corner onto George Lane seems to have presented an awkward intersection for the medieval burgage plots resulting in short plots behind Nos. 9-15 Greenhill although the arrangement could have been altered before Snape's survey.

George Lane lies along the (previous) course of the 'Castle Ditch' and seems to have comprised two 'planned' tenement 'blocks' separated from each other by the parish boundary. The southernmost block, as depicted on Snape's plan, approaches close enough to Greenhill to severely curtail the garden areas for Nos. 9-15, Greenhill. The northernmost block lies outside the parish and continues round into Stowe Street and here the typical long and narrow plot system can clearly be seen on Snape's survey and later maps, although the position of the southern boundary line at the rear of all those plots was obviously dictated by a field by the time of Snape's plan.

9 Conclusions

The programme of works at 9-21 Greenhill has provided a large amount of information on the use and development of the site from the medieval period to the present. The assessment process has indicated that there are several elements which are worthy of further analysis. It is intended to produce a Project Proposal detailing the analyses required:

The chronology of the site has been established in essence. The overall pattern suggested by the evidence from the two wells, two cesspits and three other medieval pits indicates that the medieval plots represented by the gardens of Nos. 17 and 19 were developed by, or more likely during, the 13th century. This means that the first serious occupation on the site was almost certainly several decades later than the establishment of the planned 'new town' in the mid to late 12th century. There was absolutely no indication that this part of Greenhill was ever part of a settlement pre-dating the new town. It seems that the main focus of occupation followed on into the 14th century but that all features apart from pit [161] were abandoned and filled in before the later 14th century. During the middle years of the 15th century a hall and solar block of some pretension was constructed. The relative absence of ground disturbance over the next two centuries may bear witness to a more formal or higher status use of the area to the rear of the buildings. The evidence for activity, both in building work and in below ground disturbance increased again from the middle of the 17th century and was sustained to the present. This evidence suggests a diminution of status from the late medieval period.

The proposed programme of analysis will allow for a closer understanding of this development, and will review the site within the context of similar sites. Further study of the artefactual and ecofactual assemblages will provide useful data which will be of value both for the site itself and also at a regional level.

The analysis will lead to an illustrated final report. It is considered appropriate that this be submitted for inclusion in the Transactions of Staffordshire Archaeology and Historical Society. The candle maker's trough is sufficiently unusual and important to warrant wider publication and it is suggested that an article on this be prepared for submission to the national journal *Medieval Archaeology*.

10 References

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Appendix A
Pottery assessment report
by Stephanie Rátkai

All the pottery was examined macroscopically and divided into the broad fabric groups used by Ford (1995), i.e. whitewares, iron-rich sandy utilitarian wares and iron-rich sandy table wares. The pottery was quantified by sherd count and details of form, decoration, sooting and wear were noted. Each context was spot dated. The pottery from each layer or feature is not described in detail although absence/presence is shown in table 1. The contents of some of the larger features, however, are described more fully.

Key to table 1

ww	whiteware		
ip	iron poor ware (probably derived from Coal Measure Clays)		
ircpj	iron rich cooking pots/utilitarian ware		
irg	iron rich glazed wares		
lmt	late medieval-early post medieval transitional wares generally iron rich and oxidized		
mp	Midlands purple ware		
cist	cistercian ware		
tg	Tudor Green or Tudor Green type ware		
pm	post-medieval wares consisting mainly of blackware, coarseware, yellow ware, manganese mottled ware and slipware.		
mgw	modern glazed wares consisting of creamware, pearlware, industrial slipwares (e.g. mocha ware) etc.		
rgt	ridge tile	rt	flat roof tile
ft	floor tile	br	brick

A total of 482 medieval and post-medieval sherds were recovered, of which 426 were medieval and 56 post-medieval i.e. later 16th-early 18th centuries.

Iron rich fabrics were most common (210 sherds), followed by whitewares (157 sherds) and other iron-poor wares (24 sherds). A small proportion of sherds were in late medieval/early post-medieval fabrics (35 sherds). The iron rich fabrics date from the 12th-14th centuries, the whitewares from the mid 13th-14th centuries. The iron poor wares are of 13th-15th century date. Unlike other recently excavated sites in Lichfield i.e. on Sandford Street, there was no "Tudor Green" in the assemblage and little Cistercian ware (two, possibly four, sherds). The assemblage was strongly local in character, the only obvious non-local sherd being a small fragment of a white slip decorated Deritend ware jug from (15) the fill of cess pit (16). The fill of this cess pit was very unusual in any case (see below).

Activity on the site may well have begun in the 12th century and was certainly established by the early 13th century. Many of the negative features seem to have been backfilled in the 13th and 14th centuries. Other pit filling appears to date from the 16th and 17th centuries, although these features are nothing like as numerous as the earlier pits. Only two pits may have been backfilled in the 15th century pit 68, fill (67) and pit 161 (fill 160)). Pottery from the various layers and garden soils spans the 12th-19th centuries. The ceramic evidence from the features and layers indicates continuous occupation from the medieval to modern periods.

Ctxt	feat	ww	ip	ircpj	irg	lmt	mp	cist	pm	mgw	Date	rt	ft	br	slag	cp	xjoin?
1	layer									x	19th c						
6	layer	x									mid13th-14th c						
13	16										medieval	x					
15	16	x		x	x						14th c						
17	16	x	x	x							14th c						
18	16	x		x							14th c						
23	24									x	19th c						
25	layer									x	late 18th c						
29	30									x	19th c						
32	layer	x	x	x	x						14th c						
33	layer	x									mid 13th-14th c						
34	36										post-med? (no pot)	x					
35	36										post-med? (no pot)	x					
37	38										post-med? (no pot)	x					
39	40	x							x		mid16th-17th c						
43	44			x							13th-14th c						
54	layer									x	19th c						x
55	soil	x		x		x			x	x	19th c	x					
59	60									x	19th c	x					
61	?62									x	19th-20th c						
63	64									x	19th c						x
65	66			x						x	19th c	x					
67	68	x		x	x						(14th c?) 15th c	x					
73	74	x	x							x	(13th c) 19th c						
77	78								x		17th c	x	x				
79	80					x		x?			later 16th c				x		
81	82			x							(13th c) 16th-17th c?	x	x	x			
84	102									x	19th-20th c						x
85	86		x	x	x						12th-13th c						
87	86	x		x	x						?13th c		x				87
89	16	x		x							13th-14th c				x		85
91	layer	x		x					x	x	19th-20th c						x
92	86	x	x	x	x						13th c						
93	94								x	x	19th c						x
98	97								x		17th c						x
99	86			x							13th-14th c						
103	layer	x				x			x	x	16th-17th c						x
110	115	x		x							(13th-14th) post-med	x					x
111	115	x	x	x	x						(13th) ?post-med	x	x				
113	115			x							(12th c) 13th c						
120	115			x							(?12th c) 13th c						
121	122			x	x						?14th c						
129	130	x		x							13th-14th c						
133	132								x		17th c						
135	136								x		17th c						
160	161		x								14th c (?15th c) post-med	x					
162	163	x	x	x	x		x	x	x		17th c	x					
197	hearth	x		x							13th-14th c						
202	well	x	x	x							14th c						
203	202	x									14th c						
207	layer	x	x			x					15th-16th c						210/218
209	layer								x		17th18th c	x					
210	layer	x	x	x		x					15th c	x					207/218
214	bay1									x	19th c						x
215	bay1		x								14th-15th c						
216	rearex									x	19th c						
217	cellar									x	19th c						
218	bay2	x		x		x		x			(late 15th-mid 16th) 18th c						x 207/210

Table 1 - Pottery by context

Cess pit 16, fills (13), (15), (17) and (18)

The fills of the cess pit were remarkable. A complete whiteware jug came from (18). The jug had a small squat form and was unglazed. The form and plainness of the jug suggests that it was made in the ?later 14th century.

A substantial portion of another vessel came from contexts (15) and (17). The vessel base was c 31cm in length and c 7cm wide. The sides of the base were roughly parallel but the ends were elliptical. The base had four feet. The walls, which had a slight inward slope, were slab built although the curved ends and perhaps the upper section of the long sides, appear to have been coil built. Although several sections of the rim survived it was not possible to reconstruct a complete profile. However, it seems likely that the original height of the vessel was c 30cm. One curved end section, a substantial amount of which survived, had a horizontal strap handle c 4cm below the rim and it is likely that there was the same arrangement at the opposite end. A patchy green glaze covered the exterior of the vessel and part of the interior. In places the glaze was discoloured to a dull brown, presumably due to the effects of cess. The closest parallels for this vessel can be found in Hurst *et al* (1986, plate 22 and fig 65: 223) and are described as candle-makers' troughs. They are both Low Countries' products dating from the 15th-early 16th centuries. They differ from the Lichfield example in having crenellated rims, a reinforcing central rib on the long sides and no feet or handles. Presumably the feet on the Lichfield trough acted as stabilisers as the central rib may have done on the Low Countries' vessels. Such a find is very rare in Europe and such a complete example unique in Britain, although several small fragments have been recovered from counties in the east of the country (pers comm Steven Moorhouse and John Cotter). The date of this vessel is difficult to establish precisely. Whitewares appear to have been in use from the ?mid 13th century until the 14th century. However, their *floruit* appears to be the later 13th century and first half of the 14th century since from the later 14th century oxidised red and orange sandy wares become more frequent and usually form the main component of 15th century groups.

The upper fill (13) of the cess pit contained a fragment of a partially burnt flat roof tile probably of medieval date.

In addition to the jug and the candle-makers' trough a small number of small body sherds came from the cess pit fills. These were predominantly whiteware sherds but there were also iron rich sandy utilitarian and table wares present.

Well 202, fill (203)

The well fill contained several large fragments of pottery, including a substantial part of a whiteware bowl and the lower half of a whiteware baluster jug. The remaining pottery was made up mainly of whiteware sherds. Cooking pots, bowls and jugs were represented, the most common form being bowls. Four sherds were from iron rich sandy cooking pots. The dominance of bowls and the presence of at least three baluster jugs suggests that the well went out of use in the 14th century.

Well 86, fills (85), (87), (92), (99).

This too appeared to have gone out of use in the medieval period. The fills contained predominantly iron rich sandy wares, the greater part of which were from cooking pots. A small number of glazed sherds were from pitchers. Only a very small quantity of pottery (6 sherds) was in iron poor fabrics so the fills of this well stand in marked contrast to those of

well 202 and to the majority of the other feature fills from the site. The pottery contained in the backfill of the well was of 12th-13th century date and although this backfilling represents the re-deposition of earlier material, the comparative lack of whiteware and other iron poor wares suggests that this really cannot have taken place much later than the end of the 13th century and possibly as early as the mid 13th c.

Two or three vessels from (87) were left unwashed so that residue analysis could be undertaken if necessary.

Pit 115 fills, (110), (111), (113), (120).

This pit contained two combed cooking pot rims in its primary fill (120) in an iron-rich fabric. Such rims are known from early levels at Stafford Castle (Rátkai in prep) and seem to date to the 12th century although, they may continue in use into the early 13th century. The later fills of the pit contain a mix of mid 13th-14th century whiteware sherds with a larger proportion of iron rich sandy ware cooking pots, some of which look rather earlier than the whiteware and may also date to the 12th century like the pottery from the primary fill. The upper fills contain some roof tile fragments, a floor-tile fragment and a clay pipe stem. The latter presumably represents trample of the pit fill and the absence of any later medieval pottery in the fills suggests that the roof and floor tile may also be intrusive. If this is so then the pit could have been backfilled in the late 13th or early 14th centuries.

Roof Furniture and other ceramic building materials.

A sample of roof tile was kept from the features and layers. This was examined briefly and its presence is noted in table 1. All the roof tile appeared to be in a fairly clean sandy micaceous fabric. There were no complete or near complete tiles but the tiles appeared to be of the single central nib type. There was a single (overfired?) ridge tile fragment from layer (210). The dating of roof tile is somewhat difficult. The use of ceramic roofing tile is mentioned in London building regulations of 1212 (Saltzman 1952) but how widespread a 13th century use is in the rest of the country is difficult to establish. However urban sites are clearly more likely to favour an earlier introduction of ceramic roof tile because of the reduction of the risk of fire and Saltzman (*op cit*) suggests that they were certainly popular in the 14th century. It is therefore possible that the presence of roof tile in medieval pits (16), (115) and (161) may represent 14th century usage. Pits (36) and (38) which contained nothing but roof tile fragments may, therefore, also be of medieval date rather than post-medieval.

Two fragmentary, plain, unglazed floor tile fragments were recovered from (81), the fill of soakaway pit (82), and (77), the fill of pit (78). Equally fragmentary brick fragments came from (79), the fill of post-medieval feature (80), and (81). The latter were from narrow hand-made bricks and are likely to date to the 16th or 17th centuries.

Miscellaneous Finds

A small collection of vessel glass was recovered from (62), (65) and (81) all of which was modern. There was, however, a folded foot and stem from a glass from (162), the fill of pit (163). The glass was pale green with some iridescence. The glass is early post-medieval in date. The pottery from (162) suggests a 17th century date but the glass may well be earlier.

Clay pipe was recovered from a few contexts (see table 1), most of which consisted of stems. Bowls were found in (54), (84), (91), (213) and (218), all late contexts. The bowls were all

spurred, which suggests at least an 18th century date. The bowls from (84) and (91) were decorated and probably date to the 19th century. The earliest bowl which had a flat stamped heel, was unstratified but most probably dates to the second half of the 17th century.

Discussion

The pottery assemblage although small is of major importance to ceramic studies not only regionally but nationally because of the presence of the candle-makers' trough, a rare find in Britain. In addition, the condition of the pottery is good with several complete or near complete vessels and many diagnostic or form sherds. This will enable a good functional analysis of the ceramic evidence.

The pottery provides further evidence of the growth, development and topography of Lichfield and the presence of 12th century material is of great significance. Likewise the presence of the glass vessel from (162) suggests that in the early post-medieval period this area of Lichfield was of higher rather than lower status.

The pottery will form a useful data-set for comparison with other recently excavated sites in Lichfield.

Proposals

1) The medieval pottery should be fabric typed in detail and a relative chronology of the site drawn up. This chronology should be matched to the fabrics found at Sandford Street, the Arts Centre Lichfield and Bird Street. This should enable some work on comparative chronology to be undertaken, which in turn would lead to a better understanding of the development of Lichfield.

2) A full form series should be drawn up and illustrated, since good stratified groups, particularly of this quality, are few and far between in Staffordshire.

3) Residue analysis should be undertaken on the candle-makers' trough to determine the contents of the vessel. As this procedure is designed to analyse fatty acids or lipids it should be relatively simple to determine if tallow or beeswax was used in the vessel.

**NB Residue analysis is a destructive process. If further pieces of the vessel are recovered (see 1) above) it is suggested that these are left unwashed and a small sample from them is used for analysis.*

It is not recommended that residue analysis is undertaken on the vessels from well (86) since there would be no clear strategy behind this other than the possibility of determining diet.

4) The early post-medieval pottery should be recorded by ware and vessel form type. This will be of particular interest since information about the development of Greenhill in the post-medieval period is scant. However, the information which does exist, seems to indicate that many of the inhabitants were low status artisans or paupers in this period and, at assessment stage, this seems to be mirrored in a very restricted range of 16th-17th century ceramics comprised almost entirely of blackwares and coarsewares.

The post medieval pottery from mixed 17th-19th century groups, encountered in the evaluation, need not be recorded in any detail. However, this material should be scanned and any medieval or early post-medieval vessels of interest reported on.

The resultant post-medieval pottery data will not only elucidate the role of Greenhill in the 16th and 17th centuries but will provide invaluable comparanda for other Lichfield sites.

5) No further work on the roof tile and other ceramic building materials is recommended. Likewise no further work on the clay pipe and vessel glass with the exception of 6) below.

6) The glass vessel from (162) should be fully reported on, since this has quite an important bearing on status, glass vessels being a very expensive and restricted commodity in the 16th and 17th centuries.

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The author would like to thank Sarah Jennings for her help in the identification of the candle-makers' trough.

Appendix B

Report on the mammal and bird bones from 17-21 Greenhill, Lichfield, Staffordshire,

by Ian L. Baxter BA MIFA

Introduction

A total of 3 kg of animal bones was recovered from the site amounting to 43.4 “countable” fragments (see below). This is a tiny assemblage but nonetheless of some interest as it contains domestic donkey, which is rarely recovered or recognised on British archaeological sites of any period. The majority of the remains date from the medieval period, 79%, but the assemblage also includes post-medieval and recent material (Table 1). Preservation of the medieval material was fair to good, and of the post-medieval remains good to poor.

Methods

All of the animal bones from Greenhill were hand-collected. Consequently an under-representation of bones from the smaller species is to be expected.

The mammal bones were recorded following a modified version of the method described in Davis (1992) and Alberalla and Davis (1994). In brief, all teeth (lower and upper) and a restricted suite of parts of the postcranial skeleton was recorded and used in counts. These are: horncores with a complete transverse section, skull (zygomaticus), atlas, axis, scapula (glenoid articulation), distal humerus, distal radius, proximal ulna, carpal 2+3, distal metacarpal, pelvis (ischial part of acetabulum), distal femur, distal tibia, calcaneum (sustenaculum), astragalus (lateral side), centrotarsale, distal metatarsal, proximal parts of the 1st, 2nd and 3rd phalanges. At least 50% of a given part had to be present for it to be counted.

The presence of large (cattle/horse size) and medium (sheep/pig size) vertebrae and ribs was recorded for each context, although these were not counted. “Non-countable” elements of particular interest were recorded but not included in the counts. For birds the following were always recorded: scapula (articular end), proximal coracoid, distal humerus, proximal ulna, proximal carpometacarpus, distal femur, distal tibiotarsus, distal tarsometatarsus.

The separation of sheep and goat was attempted on the following elements: horncores, dP3, dP4, distal humerus, distal metapodials (both fused and unfused), using the criteria described in Boessneck (1969), Payne (1969 and 1985) and Schmid (1972). The shape of the enamel folds (Davis 1980; Eisenmann 1980) was used for identifying equid teeth to species. Equid postcrania were checked against criteria summarised in Baxter (1998).

Medieval

Remains from medieval deposits account for the bulk of the material recovered. Cattle are the main species represented accounting for 44% of all taxa by number of identified specimens (NISP). A mandible from an old adult was recovered from well [86] (109) and teeth from a somewhat younger individual from (92). The horncore of a young adult cow (?) was found in square pit [115] (110). A cattle astragalus with multiple cut marks across the mid anterior surface and transverse chop marks on the medial surface was found in [86] (92).

Sheep/goat are the next most frequent taxon with a NISP of 38%. Of this total, 3 specimens or 25%, could be identified as belonging to sheep. Goat was present, but only represented by “uncounted” cranial and horncore fragments. This is typical of medieval assemblages from British medieval sites, where goat horncores characteristically outnumber all other skeletal elements (Albarella 1999; Baxter forthcoming; Baxter unpublished a), which suggests that generally only goat skins with the frontals, and sometimes the metapodials, still attached were customarily imported into towns. The horns of goats would have provided valuable raw material for craftworkers, along with those from sheep (particularly rams) and cattle. Sheep remains include a mandible with deciduous premolars from an animal aged around one-year-old from pit [115] (120). A cranial fragment from [86] (109) has had the horncore cut off.

Pig remains are relatively frequent accounting for 12½% of domestic species. They include juvenile mandibular fragments in well [86] (87) and a large adult distal humerus fragment from pit [161] (160). This is within the size range for modern Turkish wild boar (Payne and Bull 1988).

A fallow deer (*Dama dama*) antler fragment consisting of a shed base, brow tine and beam fragment was found in well [202] (201). Although this specimen shows no signs of human modification, the antlers of deer were seasonally collected after shedding to provide raw material for craftworkers (MacGregor 1985).

Domestic fowl and goose remains were also represented in the medieval assemblage, together accounting for 6% of domestic species.

Post-Medieval

The most interesting finds from the post-medieval period are the remains of domestic donkey (*Equus asinus*). The lower part of a left hind leg consisting of tibia, proximal Mt III, calcaneum and astragalus were found in pit [63] (64). Unfortunately these bones were poorly preserved and none are measurable. However, compared with recent reference material they certainly appear to belong to domestic donkey rather than a small pony. Further donkey remains were found in pit [68] (67), comprising a very worn I³ and P². These teeth came from an animal at least 11-12 years old at time of death (Barone 1980; Levine 1982). The P² has open fossettes, a small and oval protocone, and abrupt transition from the columns to the interstylar surfaces. These characters are very similar to recent donkey reference material in the present author's collection and correspond with asinine dental morphology in the published literature (Baxter 1998; Eisenmann 1980; 1986). Donkeys are rare in British archaeological deposits of any period, but have been recorded in post-medieval contexts at Caldecot in Hertfordshire, Medbourne in Leicestershire and at Dodder Hill in Worcestershire (Baxter 1998; Baxter unpublished b).

Horses were also represented in the post-medieval period by a large distal femur in pit [163] (162).

Recent

The recent remains all derive from the same feature, pit [94] (93). Included amongst these bones are two phalanges belonging to a medium to large dog.

Discussion and conclusion

Most of the medieval bones derive from well [86] or pit [115]. The material from well [86] is largely consistent with domestic kitchen refuse. The other deposits are too small to attempt an interpretation. There is some evidence for the use of fallow deer antler, sheep and goat horn in craftworking, but this activity was not necessarily taking place in the immediate vicinity. The post-medieval deposits are of particular interest in containing donkey bones. Explanations for their presence at this time are not easily forthcoming, but donkeys are documented as carriers of milk for both cheese-making and human consumption in the recent past (Dent 1978).

	Medieval	Post-Medieval	Recent	Total
Cattle (<i>Bos</i> f. domestic)	14	1	1	16
Sheep/Goat (<i>Ovis/Capra</i> f. domestic)	12	-	2	14
Sheep (<i>Ovis</i> f. domestic)	(3)	-	-	(3)
Goat (<i>Capra</i> f. domestic)	(+)	-	-	(+)
Fallow Deer (<i>Dama dama</i> L.)	+	-	-	+
Pig (<i>Sus</i> f. domestic)	4	-	-	4
Horse (<i>Equus caballus</i> L.)	-	1	-	1
Donkey (<i>Equus asinus</i> L.)	-	2 ¹	-	2
Dog (<i>Canis familiaris</i> L.)	-	-	0.4 ²	0.4
Domestic Fowl (<i>Gallus</i> f. domestic)	1	-	-	1
Goose (<i>Anser</i> f. domestic)	1	-	1	2
Total	32	4	4.4	40.4

Table 1. Number of hand-collected mammal and bird bones (NISP)

“Sheep/Goat” also includes the specimens identified to species. Numbers in parentheses are not included in the total of the period. “+” means that the taxon is present but no specimens could be “counted” (see text).

¹ four bones from a partial skeleton and two associated maxillary teeth

² two associated phalanges

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Appendix C

Building recording at 17-21, Greenhill Description of the individual compartments before and during conversion by Richard Stone

Number 17 Ground floor

Before conversion the entire area of walling was covered with late 20th century cladding. In the south-west corner was a timber partition forming a small lobby. At the north-east was a second timber partition forming an entrance to the stairwell.

The north, south and west elevations are of plastered brickwork. The east elevation is of brick but conceals a large stone chimney stack. The floor was of hand made bricks and quarry tiles, with much patching. These were laid on sand and brick rubble hardcore.

The west wall has a window of mid-19th century date. The wall has plaster of two phases towards the south. The earlier phase is a pinkish rough horsehair plaster with a pinkish ochre limewash. This was later covered by a similar plaster which had two coats of yellow ochre limewash. A stub of plaster indicates that 2.68m from the north elevation the plaster returned westwards. There is then a cap of a half brick thickness (110mm) of bare wall. To the north of this is only one layer of plaster covered with limewash and paint (top coat green paint, over white limewash over yellow ochre), which also returns westwards. This indicates the position of a former brick dividing wall.

The western part of the north wall is plastered and finished similar to the northern part of the west wall. After 2.16m there is evidence of another half brick thick dividing wall, primary to the building. This would have given a small room at the north-west. This was lit by a west window, now an early 19th century timber casement surround with iron windows.

To the east of this small room was unplastered, whitewashed brickwork for 0.92m. This was the northern end of a passage which led with steps down to an external cellar. The brick arch for this survives at the bottom of the wall but the cellar is infilled. The eastern side of this passage was defined by a further primary half brick thick dividing wall providing a small room at the north-east. This was plastered on both sides. The west wall had limewashed single coat plaster, the east side had the same with a later skim of lime plaster, finished with yellow ochre and later green paint. The north wall continued similarly, with a doorway at the eastern end.

The east wall at the north is two bricks thick and is slightly angled towards the east at the north. It properly forms part of the stairwell. It is finished similarly to the north wall to its west, but has further layers of light blue and white paint surviving above the earlier finishes.

South of this, the east wall consists of a brick inglenook fireplace with a timber lintel. This has been partly filled in by a tiled 1930s fire surround and is painted with yellow and green paint. Behind this is a stone stack which can be seen to south and north.

To the south of the fireplace the wall returns westward 0.56m as a brick wall and then continues south. A doorway leads eastwards into the lobby of number 19. This is 0.85m

wide. At the junction with the south wall (i.e. the frontage) the wall is seen to not be in bond. However, it is plastered in a single phase with the plaster of the south wall (in both numbers 17 and 19 lobby) and is therefore clearly primary to the refacing.

The south wall is late Victorian, the external detail of the segmental headed openings picked out with engineering brick. It is a one and a half brick thick wall plastered internally with a large window. The timber window frame is of nine large lights with square section mullions and minor transoms. A doorway to the west of this has a modern door.

Number 17 Ground floor Stairwell

The stairwell was floored with quarry tiles set on sand and brick rubble hardcore. At the south-east of the area was a full height Victorian cupboard. A flight leads up northwards for five and a half treads, then winds east in four treads, with a further three treads above. The risers and treads are of unmoulded softwood and are of 19th century date. The banister at the bottom is segmental with a plain newel post, similarly terminated. This is modern. The winding post supports a reset early 18th century landing banister of turned balusters, with responds on the square section posts. Part of the hand rail is original, with ogee moulding. The remainder is replaced and of square section. One 18th century finial survives, with a flat top above a quadrant moulding.

To the east of the staircase is a very narrow passage, leaving the space below the staircase unenclosed.

Number 17 First floor Bay 1 west

Throughout this level are strap tie beams bolted to the floor.

The south and west walls are of plastered brickwork. The north and east walls are stud walls covered with lath and plaster. All were covered in several layers of 20th century wallpaper. The west wall has two layers of horsehair plaster. The earlier is limewashed indicating that it was not an undercoat. The later is a white heavily lime-based plaster, covered with a wash of yellow ochre. At the southern end of this wall, where the frontage has been refaced, the earlier plaster is an undercoat, overlain by the later, heavily lime-based, plaster. It would therefore appear that the earlier plastering predates the refacing.

The south wall has similar - post-refacing - plaster and in parts has been recently replastered with fine modern undercoat and finishing plaster.

The north wall has two coat plaster, the lower coat being a coarse pinkish filling between the laths, the upper being the white heavily lime-based plaster. The east wall is similar. Both have yellow ochre limewash.

The room is lit by a modern six light softwood casement window, opening at the west.

The single door is at the northern end of the east wall. It is of four planks, with a plain latch and a simple lock.

The floor is of 9" (230mm) planks.

The ceiling is of lath and plaster on north-south joists, supported by major ceiling beams (with run out chamfers at the west) at the north and centre, and running into the brickwork at the south. The girders do not have any redundant joist mortices. One of the joists is a reused horizontal frame timber.

Number 17 First floor Bay 1 east

The south wall is of plastered brickwork. The north and west walls are stud walls covered with lath and plaster. The east wall consists of the brick stack, with a built in cupboard recess to its south, the eastern wall of which is of plastered brick. All walls of the main body have several layers of 20th century wallpaper, but there is none in the cupboard.

The plaster of the north and west walls is as that of the north and east walls of Bay 1 west. The south wall has a two coat plaster as the south wall of Bay 1 west. In the main body of the room (i.e. excluding the built in cupboard) the wall has a modern fine finishing plaster.

The walls forming the stack are of brick. The east wall, which has a small arched Victorian fireplace, formerly had a larger fireplace with a large timber lintel. The original plaster was pinkish with much horsehair. This was limewashed (as in Bay 1 west). The secondary plastering, a white, lime rich plaster with little horsehair, covered this and the timber lintel. This had a white limewash with a yellow ochre above.

The fireplace has two shelves or mantelpieces, above it. To its north, in the recess of the stack, is a full height softwood cupboard in two parts, the lower of one panel, the upper of two.

Within the built in cupboard the plaster is of two coats, first a rough pinkish horsehair plaster, overlain by a contemporary white lime plaster. This is found on the north wall (i.e. the south elevation of the stack, which at this level is of brick) as well as the east and south walls. The western side of the chimney stack is the line of the division between numbers 17 and 19, though the cupboard continues 0.56m further west. This is marked by a change in floorboards, the western end of the southern wall plate of number 19 and a change in the plaster of the south and north walls of the built-in cupboard. The plaster to the west (number 17) overlies that to the east (number 19) indicating that the refacing of number 17 is later than that of number 19.

As in bay 1 west the ceiling is of lath and plaster on north-south joists set on girders at the north and centre, extending into the brickwork of the front elevation at the south. The chamfers of the girders run out at the east. Several of the joists are reused frame timbers.

The floor is of 7" to 9" (175-225mm) planks in the main room, with two rows of 8" (200mm) ceramic quarry tiles by the hearth. The built in cupboard is 200mm (8") higher and has 12" to 14" (300-350mm) planks.

The main room is lit by a south window as that in bay 1 west. The built in cupboard has a two light softwood window of similar style at the south.

The door is at the west of the north wall. It is early 18th century and is of eight panels with a plain latch and L hinges.

Number 17 First floor Bay 2

The north and west walls are of plastered brickwork. The south and east walls are stud walls covered with lath and plaster, that at the east having plaster only at the east, leaving the studs visible.

The plaster of the south wall is similar to that on the other side (i.e. the north wall of Bay 1 west) and has several layers of grey/white and ochre limewash below several layers of 20th century wallpaper. The plaster of the west and north walls is similar to that of the earlier plaster of Bay 1 west. This indicates that the room was not entirely replastered when the building was divided.

The ceiling was of lath and plaster, directly on the floorboards of the room above, leaving the north-south joists visible, now limewashed.

The floor is of 12" to 14" (300-350mm) planks.

The room is lit from the west by a late Georgian six light casement with faceted handle for the opening northern half. It has fittings for blinds.

The door, at the east, is of four planks and has long hinges and a plain latch.

Number 17 First floor Landing

The northern and western part of the landing, around the stairwell, is of plastered brickwork. To the east is lath and plaster stud work with plastered brick further south. At the south is the brick stack. The remainder, forming a passage leading west, is of stud walls covered with lath and plaster. All are covered with at least three layers of 20th century wallpaper, below which is emerald green paint over white limewash.

The lath and plaster south wall, west of the stack, has two coat plaster, the lower of coarse pinkish horsehair plaster, the upper of fine white lime plaster. This continues onto the stack, but the upper coat gradually peters out.

The east and north walls have coarse pinkish horsehair plaster as does the west, though this has an overlying modern pink fine finishing plaster.

At the north-west is a winding stair with twelve timber treads, to the second floor. The stairway has a seven plank 19th century door with plain latch and glazed three light partition to its east to light the landing. There is a cupboard under the stairs, the scratch-moulded six panelled door with L hinges being of late 17th century date. The stair was lit by an iron casement window (now lost but hinges remain) in a timber frame.

The floorboards are of various sizes from 6" to 14" (150-350mm).

The ceilings were of lath and plaster at various heights. Some of the purlins are reused frame timbers.

Number 17 Second floor Bay 1

The second floor is essentially an attic storey, with only 0.43 of walling before wall plate level, the rest being within the roof space. The east, south and west walls are of brickwork covered with horsehair plaster and a thin skim of less rough plaster. Brick size averages 230 x 110 x 65mm (9" x 4.25" x 2.5"). The north wall is a later stud wall covered with laths and a finer horsehair plaster. This covers the lower side of a double cruck truss (see bay 2) with a collar just below the level of the lower purlins. All walls have cream limewash over white limewash. A three plank doorway with long plain hinges and a simple iron latch leads north below this collar. The room is lit by a 20th century softwood six light casement, the western half opening.

The wall plate at the west includes reused timbers with one mortice. The east wall plate is a reused wall plate turned through 90 degrees from its original purpose. It has crow's feet for rafters facing west and mortices and stave holes facing east..

The roof is of two trenched side purlins and a ridge purlin. The lower purlins are regularly sawn of good rectangular section (270 x 130mm), the upper purlins are roughly squared trunks of an intended square section (210 x 190mm) with single-pegged mortices for wind braces at each end of the bay. Several of the common rafters are reused and have redundant peg holes etc. Most are less than 125mm wide and 60mm deep, and are interrupted. On the west a re-roofing has provided secondary rafters on the backs of the earlier ones. On the east one of the rafters is a reused horizontal frame timber with mortices, grooves and stave holes (see drawing). A secondary collar crosses the room, presumably to counteract widening of the building.

The ceiling, now removed, was of lath and plaster on small joists nailed onto the sides of the upper purlins.

The floor is of 5½" (140mm) softwood boards.

Number 17 Second floor Bay 2

This bay is divided into a room at the west and a landing at the east. The north, east and west walls are of plastered brickwork as in bay 1. Brick size averages 230 x 110 x 65mm (9" x 4.25" x 2.5"). The south wall and the partition wall are stud walls covered with lath and plaster (as bay 1) on the sides inside the western room, leaving the studs raised and visible. The western room was lit by an iron casement window (now lost but hinges remain) in a timber frame. The walls of the western room have a grey (old white) limewash over white limewash. The landing and stairwell have white over light green over white limewashes.

The western wall plate is reused, with mortices for joists with 19" (425mm) centres.

The double cruck truss has diagonal bracing above the collar, with carpenters' marks numbered 1 to 4 from west to east. Secondary bracing has also been added. The soffit of the

collar is provided with run out chamfers on both sides. The truss is strapped back to the wall at wall plate level on both sides.

The purlins of this bay are similar to those of bay 1, scarfed just north of the truss. There are, however, no mortices for wind braces.

The ceiling, now removed, was of lath and plaster on small joists nailed onto the sides of the upper purlins.

The floor is of 7 to 9" (175 - 230mm) hardwood boards.

Number 19 Ground floor Lobby

The north wall was originally a featureless stone face of the large chimney stack. This was later extended westwards by the insertion of a brick wall, now surviving only towards the ceiling. The wall was then limewashed. This brick addition held a reused timber running southwards which carries a half brick thick wall of four courses, plastered on the east but left rough on the west. This timber is received at the south by the timber lintel of a doorway, later altered to form a six light window of similar style to that to its west in number 17. This phase is therefore contemporary with the refacing of numbers 19 and 21.

The stone stack at the north was later further extended to the west by the return wall of the insertion of a brick fireplace within number 17. At this time the wall was plastered. A further extension westwards occurred when number 17 was refaced. The west wall is also of this period. Probably also of this refurbishment was the insertion of a fireplace with an iron grate in the original stonework. The flue was of brickwork cut into the stone. The whole space was then plastered.

The west wall is described below as part of the main bay.

The floor was of quarry tiles set on mortar with hardcore below.

Number 19 Ground floor Bay 1

There was a 20th century stud partition forming a long entrance passage with a room to the west which was internally lined with vinyl wallboard. The floors were of quarry tiles set on mortar with hardcore below. Above the quarry tiles was a concrete skim. Modern wallpaper, in several layers, covered all the walls of the entrance passage. These recent wall finishes were all removed, revealing earlier features.

The west wall is dominated by a large inglenook fireplace. In its original form this was of stone, and is thought to have had a timber lintel, but the evidence for this is lost. At a later date this was partially dismantled and rebuilt, slightly smaller, in brick, with a segmental head. This in turn was further bricked up in the Victorian period, providing a small iron grate.

To the south of the fireplace a half brick thick wall was built after the first remodelling of the fireplace. This was later cut back to provide a doorway through into the lobby between 17 and 19.

To the north of the fireplace a brick wall was added, continuing northwards into the rear bay. Butted against this was the half brick thick wall which forms the north wall of the bay and the north side of the staircase to the first floor. This wall was plastered with a cream/pinkish horsehair plaster. This has several layers of limewash, above which are layers of light blue paint and then brown paint. A softwood staircase led up to the west for eleven treads. A timber stud partition enclosed the southern side of this with a board door entrance to an under stairs space. Below the stairs there was no blue or brown paint, indicating that these are later than the staircase. The west wall is half a brick thick and plastered as the north wall but with a skim coat of white lime plaster.

The south wall is similarly plastered. This wall is a continuation of that described in the lobby. It has a segmental headed window which originally had a narrow window seat. The window has since been widened 130mm and has a modern nine light timber frame. To the east of the window is a segmental headed doorway, also primary to this elevation.

The east wall was of plastered brickwork, of the 17th century, blocking the area beneath the moulded bressumer.

Number 19 Ground floor Rear wing

The south wall was the half brick thick north wall of the main bay described above. There was no plaster on this wall, only limewash, with a later pink paint.

The west wall is a continuation of the west wall of the main bay and forms the eastern side of the stairwell for number 17. It has a 0.85m wide doorway 170mm from the southern end. The wall continues a further 1.70m beyond this before a change in brickwork from a later addition which is set at an angle to the earlier wall. This earlier wall is finished with a two coat pink horsehair plaster, covered in yellow ochre limewash. The doorway was later blocked and limewashed without plastering. A later pink paint, which has discoloured in many places to a yellow-brown, covers the wall.

To the north the wall continues as a single brick thick wall finished with a two coat plaster. The pink undercoat has occasional horsehair. The overcoat, of similar thickness, is slightly lighter and has no hair. The plaster has at least three coats of limewash. A 0.81m wide fireplace in the middle of this wall has been blocked and all detail is obscured.

The north wall is similar to and contemporary with the northern part of the west wall. There is a modern glazed door at the west and a modern casement window along most of the rest of the length of the wall. These openings are both insertions. There is no evidence to indicate any earlier scheme. The plaster and later finishes were the same as the northern part of the west wall.

This scheme was continued onto the contemporary east wall, which has an inserted modern casement window. The southern part of this wall is earlier and at a different angle. This has a single coat pinkish plaster with small amounts of horsehair. A yellow ochre limewash was followed by a light blue wash and then a yellow-orange paint, followed by wallpaper. This wall formed the west wall of bay 2 of number 21.

The floor was of quarry tiles set on mortar with hardcore below. This floor continues below the blocked west doorway. Above the quarry tiles was a concrete skim.

Number 19 First floor Bay 1

The south wall is a continuation of the refacing described for the ground floor. There is a modern six light casement window. The plaster is of pinkish horsehair plaster basecoat, with lime plaster above. This has at least three coats of white limewash, followed by several layers of 20th century wallpaper.

The west wall has a fireplace towards the middle, projecting into the room. This has an early 19th century iron surround. Any earlier scheme is obscured. To the south of this the half brick thick wall is plastered with a very light pink horsehair plaster. As the plaster is in good condition the relationship between this plaster and that of the south wall is uncertain.

To the north of the fireplace the wall is a single brick thick. The plaster is of uncertain type. Just outside the room the wall continues north as a half brick thick wall.

The north wall is of studs covered in lath and plaster. The plaster is two coat, both being very light pink coarse horsehair plaster. There is a doorway at the west. The door has been removed. There is a step down at this point to the landing at the top of the stairs.

The east wall is substantially earlier than the rest of the walls. It is timber framed, with close studding towards the south and wider spaced panels further north. Some of the panels retain their original wattle and daub, but others have been replaced with brick. The bottom of this framing is defined by a moulded bressumer, directly above which the studs have vertical mortices for a floor, now lost. At the south the first floor was jettied and the evidence of a bracket for the jetty can be seen as peg holes. The timbers at the south are heavily weathered, indicating that they were originally external. The line of this weathering shows the original pitch of the roof which ran parallel to the street. At a later date this external area was rendered, with decorative bichrome pargetting in white and grey, with a pattern of two lozenges and a square.

To the south of the timber framing the wall has been extended in brick, underbuilding the jetty and refacing the whole frontage. The wall was then plastered as the south wall, in varying thicknesses as required to give a fair face.

The late 17th century queen post roof with two side purlins and a ridge purlin is a replacement. There are two trusses, at east and west of the room, and the roof continues westwards to its junction with the roof of number 17 which is set at right angles and which truncates it.

The floor is of timber planks 200mm (8") to 300mm (12") wide.

The ceiling was of lath and plaster. The joists were supported on a longitudinal (east-west) timber ceiling beam. Some of the joists are reused timbers.

Number 19 First floor Rear wing south bay

As in the main room of the first floor (to the south) the east wall is predominantly timber framed. The end of the moulded bressumer marks the end of the original ground floor room division. Above this the wall is of lath and plaster. The plaster is two coat and includes horsehair in both. There are at least two coats of limewash. To the north of this primary room division is a horizontal timber, at original floor level, belonging properly to the framing of the north bay of number 21.

The south wall is a stud wall with laths and two coat horsehair plaster dividing the room from the stairway to the south. The east wall is also of timber studding. These studs, however, are larger and include some reused timbers. The plaster of this wall is of two coats, both pinkish and using horsehair. The plaster has a yellow ochre limewash. This is covered by the similar two coat plaster of the north stud wall, which is therefore later.

The wall plate of the roof of the heightened first floor of the frontage building reuses the mortice of the original rear wall and is a reused timber. On its underside are single pegged mortices and on its upper side it has cuts and pegs to carry the rafters of the heightened building. At the west it has been cut back through a mortice, indicating that the original length of the timber was at least 4.6m.

The floor is of timber planks 7" to 8½" (170-215mm).

The roof is continuous with that described in the rear wing north bay and is butted to the earlier roof of the frontage building. The ceiling is raised here and is canted. Its covering was of lath and plaster and was removed before recording.

Number 19 First floor Rear wing north bay

The south wall has been described above as the north wall of the adjoining bay. The west wall is one brick thick and has a small early Victorian iron fireplace. The plasterwork was removed before recording. Small amounts survived at the southern end of the wall to indicate that the plaster was of two coats and used horsehair in both coats.

The north wall is one brick thick. The plaster was removed before recording. There is a modern timber window in a primary opening.

The east wall is one brick thick. The plaster was removed before recording, except at the southern end, below and to the south of the end (north) wall of number 21. In this area the plaster is of two coats. It overlies laths laid on the brickwork which forms the rear of the fireplace and chimney stack at the north-west corner of number 21, bay 2. The lower part of the timber corner post at the north-west of number 21 has been truncated 0.5m below wall plate level. A further post can be seen to the south, continuing the framing visible in the adjacent bay.

The floor is of timber planks 170mm (7") to 215mm (8½").

The ceiling was of lath and plaster and was removed before recording.

The roof has a single braced king post truss secured to the tie beam with an iron bolt. This truss carries a single purlin roof, with a ridge batten. Many of the common rafters are reused,

as are the purlins, in contrast to the newer king post truss and ceiling joists. The northern end of the roof is hipped.

Number 21 Ground floor Bay 1

The south wall is of plastered brickwork. At the west is a segmental headed doorway, primary to this elevation, with a segmental headed window to its east. The west elevation is plastered brickwork of the 17th century which blocks the originally open area beneath the mid-15th century moulded bressumer. The north wall is again of plastered brickwork of this period. The east wall has a staircase of this period rising at the north, with a wide inglenook fireplace at the south (again of the early 19th century), which has a 1930s fireplace added within it.

The ceiling is of lath and plaster.

Number 21 Ground floor Bay 2

The south wall is plastered brickwork, as is much of the west wall though this incorporates remains of the earlier timber framing, including the mid-15th century work and a later, 17th century, door head towards the south of the bay. The north wall is in poor condition but incorporates fragmentary remains of the 15th century timber frame and a late 17th century mullioned window (reset?). The west wall is plastered brickwork over a plastered stone area which formed the foundation on which lay the timber sole plate of the 15th century timber framing. The south-eastern corner of the room was taken up with a late 19th or early 20th century brick pantry. The ceiling survived from the 15th century scheme, with a trimmer indicating the original position of the access to the first floor.

Number 21 First floor Bay 1

The south wall is one brick thick, finished with two coat pink horsehair plaster basecoat, with white lime plaster finishing coat. There is a modern six light casement window in a primary opening. This wall is the continuation of that in number 19. At the east it returns and sits above the bressumer of the timber framing of the east wall, which is described above (number 19, first floor, bay 1). In number 21 the bressumer is unmoulded and the entire timber framing above it is covered with pinkish horsehair plaster basecoat, with white lime plaster finishing coat.

The north wall is timber framed, with wattle and daub infill, which has been plastered as the west and south walls. A timber partition of thin planks, and incorporating a reused board door, has been formed to provide a small landing at the top of the stairs to the east. This is accessed by a six panel door with a plain latch and a lock. One of the hinges is an L hinge, the other a plain long hinge. The door and fittings (except the long hinge) are 18th century.

The east wall is of brick with a central early 19th century fireplace. This possibly obscures an earlier scheme. At the northern end of the wall a stairway leads up to the second floor. The first step is within the room. The doorway to this stairway is of six panels, with long hinges and a plain latch. This is of early 18th century date.

The fireplace is flanked by cupboards. The door of the cupboard to the north has two panels and square hinges and is late 17th century; the door of that to the south is reused and altered, now having seven panels. In its original form it was of early 18th century date.

The ceiling has a central transverse (east-west) timber girder, supporting plain joists. The lath and plaster of the ceiling is attached to the underside of the floorboards above and the joists are whitewashed like the plaster.

The floor is 320mm lower than the level of the soffit of the primary bressumer and is a later insertion. There is no evidence of any earlier flooring. The present floor is of timber planks generally 230mm (9") wide, but varying from 150mm (6") to 300mm (12"). By the fireplace the grate has brick flooring.

Number 21 First floor Bay 2

Two steps lead up to the room from the landing to the south. The south wall is timber framed with plastered over wattle and daub infill. The original form of the frame was of a queen post truss with a central doorway below, with curving 'arch' braces to either side. The wall posts are jowled, that to the west being chamfered on its north-eastern angle. The tie beam is also chamfered. The doorway has subsequently been lowered and replaced with a six panel 18th century door with, H hinges, a plain latch and a wooden lock case. Above this doorway is brick infill. The plaster above this is on laths and is of two coats, the lower being pinkish horsehair plaster, the upper of fine white lime plaster. This has a blue-grey wash with a later white limewash. Subsequently a second fine white lime plaster was added over the earlier scheme. This was limewashed at least three times and later painted first pinkish-red (madder) and then cobalt blue. Wallpaper covers this.

The west wall is based on the remains of a timber frame, described in the first floor rear extension of number 19. It now consists of a bressumer at floor level (now obscured), a chamfered wall plate with an integral 'capital' for a chamfered wall post with run outs at the base. To the south, between the chamfered wall post and the jowled post of the frame, the area is filled with lath and single coat pinkish horsehair plaster. The limewash, paint and wallpaper sequence is similar to that of the south wall. It is thought that this area was originally a doorway. The next post to the north has been removed and the area below is infilled with brick. The plaster is two coat - pinkish horsehair below fine lime - and the paint and wallpaper sequence is the same as further south.

In the angle of the north-west corner is a plastered brick flue and blocked fireplace, largely obscured by plaster, paint and wallpaper as before. This has been added to the original timber framing.

The north wall is a timber frame of the same form as that at the south end of the bay, but with no doorway. Several timbers are now lost and the panels are infilled with brickwork, plastered and finished as elsewhere in the room. The tie beam is chamfered.

The west wall, as the east, is based on the remnants of a timber frame, but is now infilled with brick. The wall plate is chamfered. Only the southern of the two intermediate posts survives. The plaster is of two phases each having two coats - pink horsehair under fine white lime. The earlier phase is limewashed and was designed to show the surviving post. The latter

phase involved pecking the earlier plaster for keying. This later plaster was finished as elsewhere in the room.

The floor is of timber planks generally 230mm (9") to 280mm (11"), but some as narrow as 150mm (6"). The flooring in front of the fireplace is of quarry tiles.

The roof was originally open and is of single through purlin construction with wind braces at each end below the purlin. The uninterrupted common rafters and the wind braces are pegged to the purlin. At a later date a ceiling was inserted, carried on a transverse (east-west) timber girder with diagonal bracing to the purlin and a rudimentary collar. The ceiling was of lath and plaster and was removed before recording. The space it provided was accessed from a hatch in bay 1 of the second floor and lit by a small window in the north frame.

Number 21 Second floor Bay 1

This is an unlit attic room is reached by a stair in the north-east corner. It winds for four treads at the bottom and after a single straight tread winds for a further five treads. There is a plain landing banister of planks and battens. The south wall is the roof pitch, covered in lath and plasterwork, with the whitewashed purlin exposed. The west wall is the frame described in no. 19 first floor bay 1. This is plastered and whitewashed. The north wall is the continuation of the frame described on the first floor. The present floor has been inserted and is below the level of the original doorhead of this frame. A small hatch above this led to the attic space of bay 2. The upper part of the frame is obscured by the pitch of the roof. The east wall is of whitewashed brick and has a chimney stack projecting into the room.

The floor is of timber planks which vary in width from 150mm (6") upwards, with several being 330mm (13").

The room is ceiled with lath and plaster. It is supported on joists which include two reused 15th century embattled plates.

The double purlin roof extends the roof of number 19. It carries common rafters which include two reused timbers.

Exterior South elevation

Nos. 19 and 21 are united in Flemish bond brickwork, with a two course plate bande dividing the two storeys and with dentillated eaves. There is a half brick wide plinth, four courses high, reducing to three at the higher east end. The two segmental headed doorways to the respective houses are adjacent to one another. A further segmental headed doorway at the west of number 19 has since been partially blocked to form a window. Further windows flank the two doorways. There are three windows on the first floor above the ground floor windows. The western of these is segmental headed of headers on edge, the others are flat headed. All other segmental heads are of alternating double headers and single stretchers (i.e. English bond). The pitched roof is covered with plain tiles, as are all the roofs of 17-21.

At the west of number 19 the wall has been cut back and the Flemish bond brickwork of number 17 is butted up against it. The west elevation shows this is an addition. The doorway at the west is segmental headed and has chamfered jambs. There is a large ground floor

window to the east, the sill of which is picked out in engineering brick. It is segmental headed, with a soldier course capped with headers of engineering brick. The first floor has similarly treated windows with segmental heads and sills, above the door and ground floor window. The eastern sill has been replaced. The second floor window, in the centre of the gable, is also treated in this way. The gable has angled dentilation.

Exterior West elevation

The front part of the west elevation is the west elevation of number 17.

The southern part of the wall is a clear addition, as described above. To the west the Flemish brickwork is of smaller bricks, similar to that of the south elevation of 19 and 21. There is a half brick wide plinth, six courses high at the south, and only three courses at the higher north end. It has a similar two course plate bande between ground and first floor, but this is set 0.3m lower. There is a second similar plate bande between first and second floors. Attached to each plate bande are the circular end stops of four iron ties. The eaves are plain.

The ground floor has two segmental headed windows. That to the north is of larger brickwork, along with almost all the ground floor walling north of the east window above sill level. At the northern corner the walling has again been rebuilt in recent years.

The first floor has a single window, above the northern of the ground floor, similarly treated to them, its segmental head being of headers on bed.

To the north of this, set further east, is the irregularly bonded brick of the stairwell of number 17. Beyond this, built in Flemish Garden Wall bond, is the west wall of the rear extension of number 19. This is interrupted only by a projecting chimney stack. It has dentillated eaves.

Exterior North elevation

The north elevation is a mix of largely featureless expanses of brickwork associated with the rear of numbers 17 and 19, with the timber framing of number 21 at the east.

At the east is the rear wall of number 17. This is not in bond with the west wall. From the ground floor to a height of 2m (the level of the ground floor window heads of the west elevation) the walling retains traces of whitewash, presumably from an extension (probably a lean-to). To this level the bond is based on Flemish bond. Above this level the mortar is different, possibly simply repointed. Also, above this level, the bond is regular, a variant of Flemish garden wall.

Beyond is the rear wall of number 19 which is also of Flemish bond. There is a doorway at the west and 20th century windows on ground and first floor. At the eastern corner of this is a small outside toilet of machine made brick.

The rear wall of number 21 was originally of timber framing, which has decayed in the lower part of the wall and has in large part been replaced with brickwork laid in no coherent bond form. There is a ground floor entrance at the east with six light casement windows at ground and first floor levels.

Exterior East elevation

This elevation is within the adjacent property and no relevant historic fabric can be seen.