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The Town Wall, Newcastle upon Tyne. Excavations at Orchard Street and Croft Street, 1987–89

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THIS report describes excavations carried out by Newcastle City Council Archaeology Section on two sections of the town wall of Newcastle upon Tyne, part of a continuing programme of excavation and recording of the medieval defences begun in 1986 (Nolan *et al.* 1989). Work at Orchard Street took place in two short seasons during 1987 and 1988 on a length of the wall curtain supposed to have been wholly medieval. The Plummer Tower, subject of limited investigation in 1989, retained only a short length of adjoining curtain. On both sections there was visible evidence of different builds and repairs, the possible dating and functions of which will be examined.

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REPORT 1: THE TOWN WALL IN ORCHARD STREET, NEWCASTLE UPON TYNE

Excavation took place in 1987 along the west (outer) face of the town wall, following demoli-

tion of the Federation Brewery, to examine the wall foundations prior to landscaping. The opportunity was also taken to excavate a trial trench (Area G) on the inner face of the wall. In 1988 the ground inside the wall was mechanically reduced to approximately medieval levels for construction of the G.P.O. car park. During this work a watching brief was held. This was followed by further limited archaeological investigation of the wall foundations on the east side. The areas of excavation are shown in Fig. 1.

The Site

The curtain here survives, with one break, to a total length of 131.20 m and stands in places 9.20 m high with its wall walk and parts of the parapet. Despite the restricted areas available for excavation valuable information for the constructional and reconstructional phases was recovered. The subsoil is a firm, yellow-brown boulder clay. The area slopes gently southward, with a fall of only 20 cms along the length of the surviving portion of the wall. At the south end of the wall is a sudden drop down to Hanover Street, before the ground falls away steeply to the River Tyne.

History and Archaeology

Summary of Phasing

Phase 1	Pre-town wall
Phase 2	Town wall construction
Phase 3.1	Post wall construction land use east side

TOWN WALL, ORCHARD STREET

SITE LOCATION AND
AREAS OF EXCAVATION

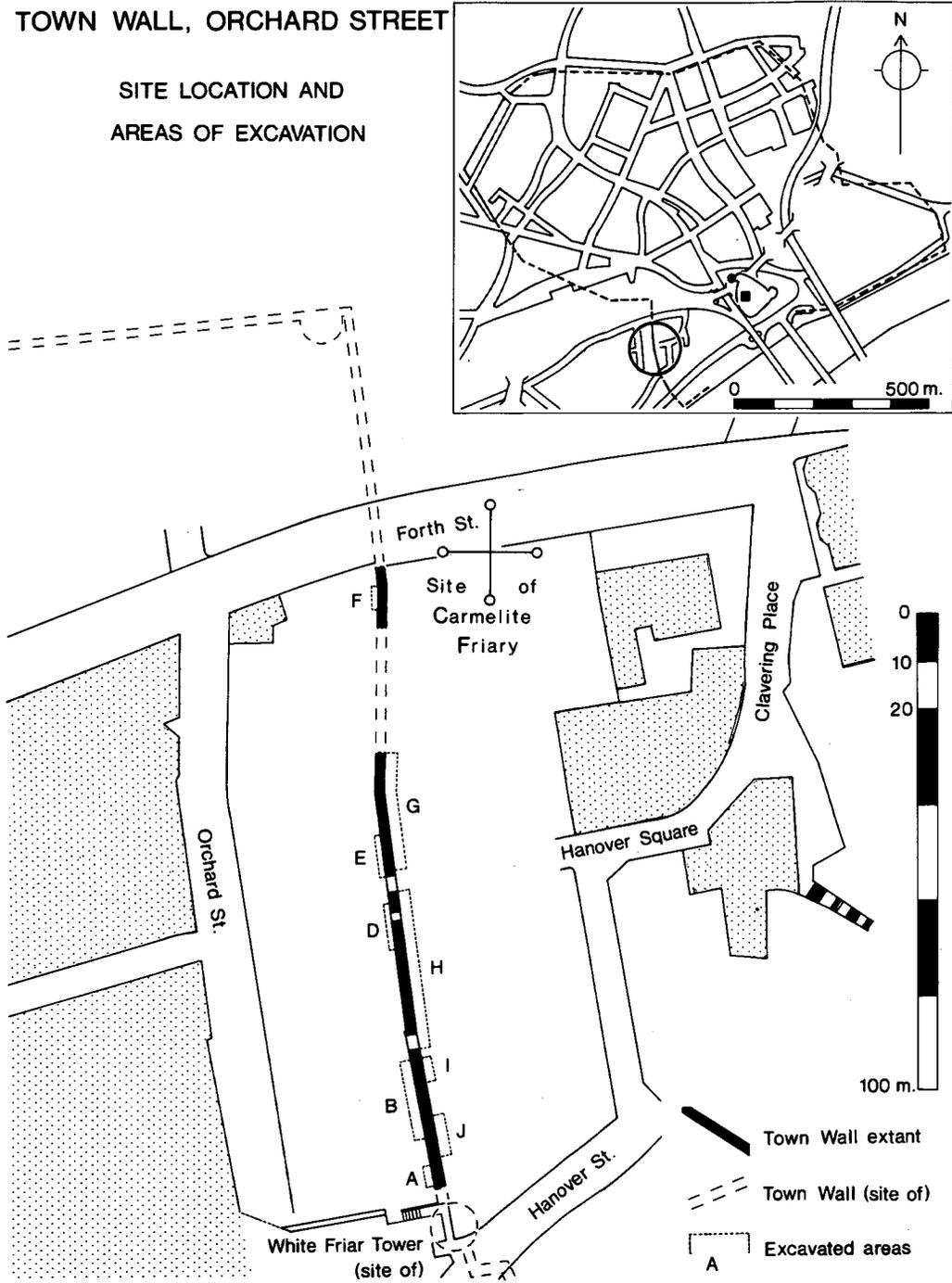


Fig. 1 Town Wall, Orchard Street: site location and areas of excavation.

- Phase 3.2 Post wall construction land use west side
 Phase 4 Post-Friary land use: the Midden
 Phase 5 Civil War
 Phase 6 Post Civil War to present

Phase 1 Predating the Town Wall Construction

Two small, broken flint blades were found in disturbed subsoil tentatively assigned to Ph.1 of the site use. Since a considerable amount of flint flakes and nodules occur throughout the medieval and post-medieval phases, these need not be indicative of prehistoric activity on the site.

Roman remains have been noted in this area since the 19th century (Sheriton Holmes 1895–6, 12), and further evidence of Roman activity was found in excavations on the site of the Carmelite Friary in 1965 and 1967 (Harbottle 1968, 178–9). The restricted nature of the areas available in 1987–8 made it unlikely that further coherent evidence for Roman activity would be obtained, and this proved to be the case. Only 5 small sherds of Roman pottery and one (identifiable) fragment of tegula were found, all residual in Ph.1 and Ph.3.1 contexts.

Until the second half of the 13th century the ground here may have been pasture land, since no identifiable traces of agriculture such as plough marks were seen in the clay subsoil. The area was presumably enclosed as the precinct of the Friars of the Sack, here from c. 1266, and certainly belonged to the Carmelites who succeeded the Friars of the Sack in 1307.

Phase 2 Town Wall Construction (mid 14th century)

Towards the end of the 13th century, construction of the town wall began on the northern side of the town and proceeded southwards. The Orchard Street section of wall forms part of the distinctive western re-entrant, built after 1311 and completed by c. 1333 (Harbottle 1968, 77). The excavation was unable to add anything more to this approximate dating, as only 21 small sherds of medieval pottery were recovered from undisturbed contexts associ-

ated with wall construction. Of these, none was particularly diagnostic, and can only be taken as a typical fabric group of the early-mid 14th century.

The appearance of this stretch of wall when first completed is unknown owing to extensive repairs and alteration (see below “The Town Wall”). The earliest (late 16th century) illustrations of the wall show it running south, battlemented, and with either an interval tower (*A.A.* 1, 3, 124) or two turrets (*A.A.* 2, 12, 230; Sheriton Holmes 1895–6, 12) along its length. Where the wall reached the edge of the steep escarpment above the Tyne stood the White Friar Tower. This structure, demolished c. 1840–44, was unusual among the wall-towers in having an “octangular” lower storey (Richardson 1846, 230), becoming circular above a triple roll-moulded string course. As there are no detailed views or descriptions prior to the 18th century, it is impossible to say how far such anomalies might have been a result of repairs following Civil War siege damage (see Ph.5). The site of the tower was completely removed when Hanover Street was formed.

There is now no positive evidence in the wall fabric for interval towers or turrets such as are shown on the pre-Civil War illustrations, though the possibility that their former existence is reflected in peculiarities in the foundation work is discussed below (see “Wall foundation”).

West of the wall a ditch, known as the “King’s Dykes” completed the defensive system. The site of the ditch lay beyond the area available for excavation and nothing of its character here is known.

Phase 3.1 and 3.2 Post-Wall Construction-Land Use

The ground to the west of the wall formed part of the defensive system, whilst that immediately inside the wall remained open as part of the intra-mural lane to facilitate movement of supplies and equipment when danger threatened. Not surprisingly there is virtually no evidence for any human activity on the outside of the wall (Ph.3.2) since the areas

available for excavation where any stratification survived (A, B, 1987) lay on the site of the berm between the wall and the ditch. It is possible that the few finds and features (11 contexts) tentatively assigned to this phase were left by workmen engaged in repairs to the wall fabric.

The pattern of land use on the eastern side of the wall (Ph.3.1) was quite different. This area was part of the White Friars' precinct until the house was dissolved in 1539, and the nearest friary buildings lay only some 40' north-east of the wall. Again the restricted areas available for excavation meant few conclusions could be drawn about the deposits which form this phase. Their predominantly ashy or charcoally composition, and the condition of the pottery and bone they contained, suggested sporadic scattering or dumping of kitchen waste close to or against the town wall. There was no evidence that this was manuring associated with any form of cultivation. A number of deposits included concentrations of mortar or powdered sandstone. Possibly this was erosion from the wall face, or a result of maintenance to the fabric. Flint fragments, previously mentioned, were frequent in this broad phase. Apart from two nodules which had been used as hammerstones there was no other indication of usage. Most of the edges were clean and sharp, which suggested that the fragments had not travelled far from the point of breakage. Of particular interest within this phase was a group of deposits (87, 118–21, 123, 124, 127, 130) abutting the inner face of the wall and containing quantities of broken medieval window glass. Some of these pieces had painted decoration attributable to the first half of the 14th century. At first it was thought that these might have a Dissolution origin, but the proportion of heat-sealed edge fragments from this group rather suggests they were reglazing waste. None of these glass-bearing deposits contained pottery which need be later than the 14th century. For a discussion of the window glass and its significance see "The Finds".

In Area G fragmented areas of metallurgy, using sandstone cobbles and broken fragments of brick and associated with 14th–late 15th

century pottery, might have been parts of the intramural lane. Metallurgy did not appear in the areas further south, and so may represent localized surfacing.

Phase 4 Post-Friary Land Use—The Early 17th Century Midden

On the east (inner) side of the town wall the Friars' precinct survived in name as the "White Friars Close" until at least 1632, and possibly some of the redundant friary buildings remained in use. Following the Stuart succession and Union of the Crowns the importance of the wall as a bulwark against Scottish invasion declined, and in 1614 the Corporation leased the White Friar Tower as a meeting place for the Society of Wallers, Bricklayers, and Plasterers, and the Company of Mettors who occupied the basement.

By the mid-16th century only some 30–40 cm of deposits had accumulated against the wall face. Above this, by the time of the Civil War, a midden composed of a considerable depth of almost homogeneous purple ash containing animal bones and large chunks of imported tablewares had built up. This deposit was only archaeologically excavated in one small area (G, 1987) (fig. 8), where it was some 65–70 cm thick, but is known to have extended over the friary site (Harbottle 1968), and in the course of the watching brief it was noted again spreading south and east towards Hanover Street. In Area H depths of nearly 2 m were observed.

The midden was probably an accumulation of nightsoil and domestic refuse from nearby households, dumped in a conveniently out of the way spot. It is interesting that the authorities permitted the blocking of the intra-mural lane, perhaps indicative of the more stable Anglo-Scottish relations prevailing at the time. However, another possible source for the midden material may be considered. At the time of the Civil War the royalist mayor, John Marley, removed the great dunghill at the Castle using the material to strengthen the inner face of the town wall (Bourne 1736, 119n). This is evidently referred to by later writers (Grey 1649, 6; Bourne 1736, 10) who described the walls as being "rampered within with earth". However,

if the Orchard Street midden was composed of redeposited material one would expect to see a much greater degree of fragmentation and dispersal in the pottery.

Phase 5 The Civil War

Use of the midden ceased with the siege of Newcastle in 1644. Little is known of the preparations for the siege, though as early as 1639 it was proposed to increase the defensive capability of this section of town wall by mounting a small cannon on the White Friar Tower and a demiculverin near the Postern (P.R.O. MPF 287). According to contemporary accounts of the siege (Terry 1899, 226–7), two substantial breaches were made in this section of the wall, prior to storming the town, on the 19 October 1644. The first, caused by a mine blown at 3 p.m. that afternoon, was a little north of the White Friar Tower; the second, made by artillery, removed some 56 yards of wall towards the Postern. The mine, according to the Milbank Ms. (Bourne 1736, 233) had been dug “by the colliers of Elswick and Benwell . . . employed under one John Osborn (a false rebellious Scot) to undermine the walls”. Clear evidence for both these “traumas” was found during excavation. Both the mine and the reconstruction trenches cut the midden deposits, which had then been backfilled into the crater and foundation trenches.

The mine north of White Friar Tower created an ovoid, funnel-shaped crater measuring about 5 m × 6 m and at least 1.5 m deep. Contemporary accounts make it clear that this was the result of an explosion rather than undermining (Particular Relation, 1644). Here the section of wall destroyed, or so severely damaged as to need reconstruction, was some 13 m long (see “The Town Wall”, Build 17; fig. 7, Section AA).

The second breach was made by artillery 60.7 m further north. This reconstructed section (The Town Wall, Build 18) measures c. 55 m, and is almost certainly the site of the breach “at the Friars, being 56 or 57 yards”, ordered to be repaired by the Common Council in March 1647 (Twas 589/4, f. 226). In

both cases the construction trench for the rebuilt wall was backfilled with disturbed midden material and contained a few clay pipe fragments. When the White Friar Tower was demolished in 1840 the remains of two human skeletons were found, one actually under the wall (presumably the section south of the tower) and another a little distance from it (Richardson, 1846 p. 200). From other finds, including cannon balls, made at the same time it is possible that these were casualties of the storming. A mason’s “setting pinch” found at this time “in the heart of the wall” could date from the post-Civil War repairs.

The earliest illustration of the wall’s post-war appearance is on Martin Beckman’s plan of Newcastle (Beckman 1683). In view of the extent of Civil War damage it may be significant that this gives no indication of any interval towers or turrets between the Postern and White Friar Tower. Beckman’s plan does not show the wall ditch, which could indicate that the ditch had been substantially, if not entirely, filled in. This section of the King’s Dykes was being leased to individuals by the Corporation from at least 1677 (Twas LB9, 19/21A/50), though for what purpose is not clear.

The White Friar Tower, which cannot have escaped siege damage, was back in use as a meeting house of the Wallers, Bricklayers and Mettors and the Masons by 1 July 1674 if not earlier (Mackenzie 1827, 700). Probably the window shown in the middle of the west face by G. B. Richardson (Hunter Blair 1936, 128, fig. 2) belongs to the post-Civil War reuse of the tower by the companies.

Phase 6 The 18th–19th Centuries

Beckman’s plan does not show any domestic buildings. The evident slowness with which post-medieval development in this area took place has been remarked upon elsewhere (Hartbottle 1968, 174). For at least the first 40 years of the 18th century there were no buildings actually adjoining the town wall. These first appear between 1746 and 1772 (Thompson 1746; Hutton 1772) suggesting that although ineffectual in the Civil War, and by 1736 “going fast into Ruins” (Bourne 1736, 18), the

walls were still felt worth retaining as a defensive barrier and not for civic prestige alone. The wall and gates were put into order at the time of the 1745 Jacobite Rebellion (Newcastle Courant Nos. 2702–4, 28 Sept.–19 Oct. 1745), and the White Friar Tower was equipped with two 4-pounders, four $\frac{3}{4}$ -pounders and a water tub (NRO ZRI 27/4/38). These warlike preparations forced the Company of Masons to abandon the tower as their meeting place, and they subsequently moved to the Plummer Tower (see Report 2).

In 1723 (Corbridge) the King's Dykes and the ground east of the wall, apart from a few houses on the west side of the approach to Tuthill Stairs, is shown as open ground covered with ?apple trees.

West of the town wall an orchard (the origin of Orchard Street) seems to have been walled in, separating it from an extensive area of ?market gardens towards the Forth. This created an enclosure c. 60–70' by 290', the western extent of which might perpetuate the outer edge of the ditch. At Bath Lane, the only excavated ditch section available for comparison, the outer edge lay c. 21 m (69') from the base of the wall.

Apart from a few buildings immediately outside the Postern, the ground immediately west of the wall remained unbuilt upon into the early 19th century. By 1830 however the dykes and the gardens towards the Forth had been parcelled out and built over creating two new roads, South Street and Orchard Street. On the site of the orchard ten variously sized plots were leased from the Corporation, fronting Orchard Street on the west and extending about 30 m (98') west of the wall. In most of these plots there were lean-to buildings taking advantage of the town wall, as the numerous joist holes in the outer face still testify. By 1860 several of these plots were industrial premises. One, a vinegar manufactory (Oliver 1830, no. 201), had a well in the central yard, possibly taking water from the infilled town wall ditch.

Only by c. 1740 was the eastern side of the town wall beginning to be developed. This development has been substantially

documented elsewhere (Harbottle 1968, 83–85). Two large houses, one of which later became Russell Court, stood on either side of the lane called Hanover Square by 1772. The other house, on the southern part of the site, belonged to Isaac Cookson, an entrepreneur with business interests in the Close who had obtained a lease of the White Friar Tower from the Corporation in 1776 and converted it into an ice house. An early photograph shows Cookson's house to have been brick-built, three-storied and pilastered, with Dutch gables and numerous large sash windows. Its garden ran south to the edge of the escarpment and was bounded by the town wall on the west.

The tower, part of the wall adjoining to the north and south, and the adjacent embankment were purchased in 1839 for £5,250 by Amos Spoor, builder, for the creation of Hanover Street. Demolition of the tower and the wall to the south began early in 1840. Shortly before its destruction the tower was described as "at the head of the Breakneck Stairs . . . (the tower and stairs were theretofore ruinous and dangerous for public passage) and waste ground on the E side of the tower now laid into Isaac Cookson's garden; also a battlement and way from the garden to the stair-head." (TWAD 589/20, f. 447). The battlement was presumably that part of the wall-walk immediately adjoining the tower.

Little evidence of the late 18th and early 19th century development appeared within the areas of excavation apart from fragmentary walls and wall footings from buildings abutting the town wall. One of these, possibly used as a brewhouse, was uncovered in Area G in 1987. Brick foundations from Cookson's house were noted during levelling for the post office car park in 1988, and showed that the buildings had not been cellared.

Massive clearance for the York, Newcastle and Berwick Railway between 1845 and 1849 removed c. 51 m of the western reentrant south of the Denton Tower, leaving the Orchard Street section isolated. Subsequent development within and against the wall was rapid and intense. By 1860 the buildings south of Hanover Square were subsumed into the Hanover

Square Brewery which grew to occupy virtually the whole area between Forth Street, Hanover Street, Orchard Street and Clavering Place by the early years of the present century. Later the Federation Brewery occupied the site until its move to new premises in Dunston in 1985.

That so much of the wall survives at all is due more to its assimilation within this complex of buildings than to the Corporation's care. Although leases of the wall to the Brewery as late as 1930 exhorted the company to "keep the old Town wall . . . in good order and condition" (CEPS File "Old Town Walls" 1F), as the brewery expanded to occupy premises on the west side of the wall a number of access points were punched through the fabric. The most destructive of these was formed between 1860 and 1896, and destroyed a section of the northern post-Civil War rebuild over 25 m long. The other three openings (the largest giving vehicular access between the west side of the wall and Hanover Square) are undatable, but may have been a result of agreements between the Corporation and the Brewery for forming breaches in the wall in 1937, 1945 and 1958.

Despite these changes there were also encouraging moves to preserve the wall. The earliest recorded systematic restoration took place in 1952, when large areas of the facework of the northern end of the wall were rebuilt (PSAN 5, I, 1951-6, 105-7). In 1957 a strip of ground adjacent to the inner face of the wall between the large breach and the Hanover Square access was bought by the Corporation as a landscaped area, ensuring there would be no further building encroachment there.

Full structural conservation followed demolition of the brewery in 1986 and the excavations of 1987 and 1988.

Brewery occupation has also affected the archaeological remains. Deep cellaring and thick concrete pad foundations on the west side contributed to the restricted nature of the 1987 excavation, and much of the east side of the wall has been rendered almost entirely archaeologically sterile (apart from at the north end) through the extensive use of concentrated pile and pad foundations for the later

brewery buildings. This area was further disturbed by heavy plant in forming the present Post Office car park.

THE TOWN WALL

The different constructional phases have been numbered and are referred to as *builds*. The principal builds are shown, in outline for clarity, on Figs 3-5. Differences in masonry at the joints of selected builds are detailed in Fig. 2.

Material

The wall fabric consists of squared or rectangular facing blocks of close-grained yellow sandstone from the coal measures group, probably obtained locally, enclosing corework of small-medium rubble grouted with lime mortar. Numerous common garden-snail shells were found to have penetrated deeply into the joints of the face stones from foundation level upwards, their former occupants possibly attracted by this ready source of calcium for their shells. Where unweathered, the medieval masonry was dressed with fine, close, diagonal tooling. The face stones were laid horizontally or vertically without regard to consistency in their bedding planes.

Wall Foundation

For most of the surviving length of medieval wall, the foundations were of rubble laid in a shallow trench c. 30-40 cm below modern ground level. This is similar to the foundations recorded at Pandon and Gallowgate by Sheriton Holmes (1896, 23). Shallow foundations have been noted on other town wall sites, for example Hartlepool (Smith 1986, 69), and may support the view that the prestige value of masonry weighed as heavily as defensive considerations when it came to construction (Bond 1987, 92). The only notably different foundationwork occurred in *build 14* where the footings were dressed ashlar closely packed into a narrow trench. Above the footings the width of the superstructure was reduced by a variable

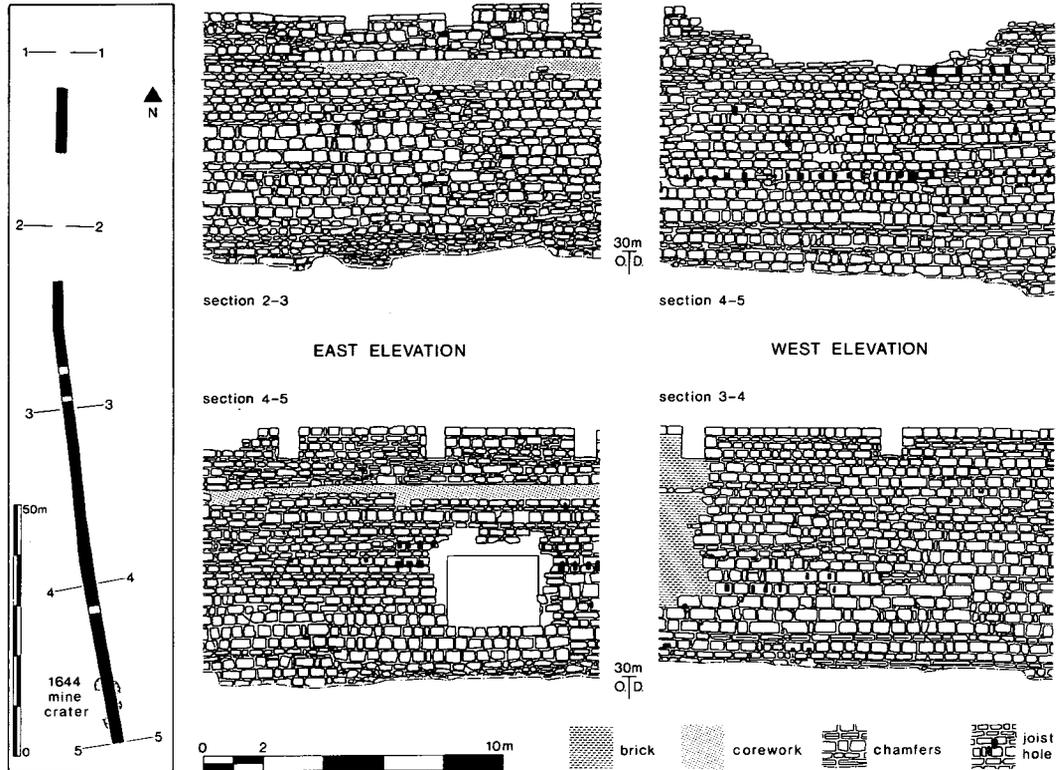


Fig. 2 Location (inset) of phased elevation sections (figs. 3–6) and masonry details of areas outlined by shading.

number of internal offsets and a double external chamfer course. A selection of foundation forms appear on the cross-sections in Fig. 7.

The only possible indication of the former existence of wall turrets is a marked thickening and stepping out of the wall footings in two places (*builds 3 and 4*). These approximate to the positions of the turrets shown on John Marley's plan of 1638. It might be suggested that these were intended to bear additional weight, though admittedly such features do not occur below the turrets on the town wall at Bath Lane.

Mason's Marks

All the mason's marks *in situ* (i.e. not on reset or reused stonework) occurred in *build 1* and

were variations on a simple "V". In *build 18* a squat arrow and cross appeared on reset stones.

Structural phases

Including the parapet, 33 constructional phases are visible, spanning primary medieval construction, medieval alterations/repairs (16 *builds*) and post-medieval reconstruction (17 *builds*).

To present the wall as a coherent structure, both the medieval *and* post-medieval *builds* will be considered in this section.

Constructional phases are more apparent on the eastern (inner) face than on the outer face of the wall itself. Since it was the outward appearance of town defences which mattered

most, it would not be surprising for more care to have been taken, from both an aesthetic and defensive viewpoint, to blend builds and repairs. Also a considerable amount of blurring has almost certainly taken place in more recent years, with some large sections of facework having been reset or rebuilt. This is most obvious in the case of *build 23*.

Builds 1–8 (figs. 4–6)

This group appears to be the earliest masonry, forming a low wall (3.50–4 m above construction period ground level) being built southward, and including the stepped foundations described above. The foundation builds of this group can only be distinguished on the inner face. *Build 1* or possibly *build 2* seems to be the primary work. The masonry here is well-coursed, with a mix of large squared and oblong ashlar, but *build 2* has smaller

stonework in its base courses similar to that at Hanover Street (Nolan *et al.* 1989, 39). *Builds 5* and *6* again mix square and oblong ashlar. *Builds 7* and *8* are similar, and may have some relationship with the stepped foundations below. Externally *build 8* seems to rise c. 1.5 m above the top of the low wall, possibly representing part of an early parapet buried within the heightened wall. *Build 15* at the extreme north end of the wall may have been part of this phase.

Because of Civil War reconstruction and later damage it is impossible to say how far north the unheightened wall represented by *builds 1–8* extended nor is it clear if the low wall was ever intended to remain as such or simply represents a temporary cessation of work. If the former is true the original wall walk height (c. 4–10 m above ground level) would be closer to the range of surviving wall heights elsewhere on the western part of the circuit e.g. the Hanover Street section adjacent

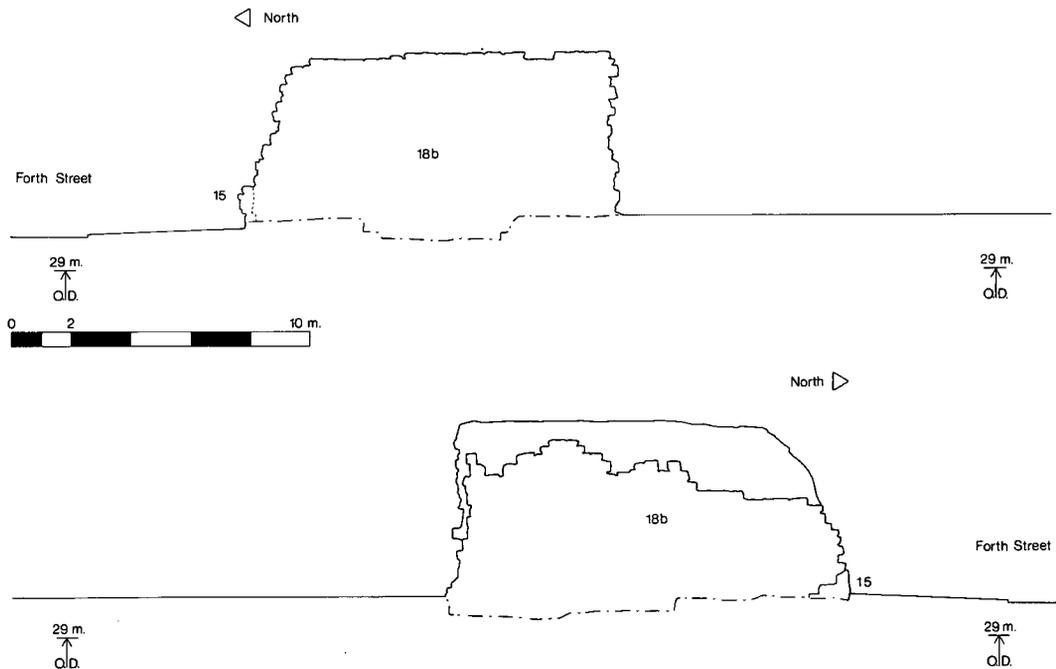


Fig. 3 Town Wall, Orchard Street: phased elevation section 1–2. On figs. 3–6 the western outer elevation is shown at the top of the page.

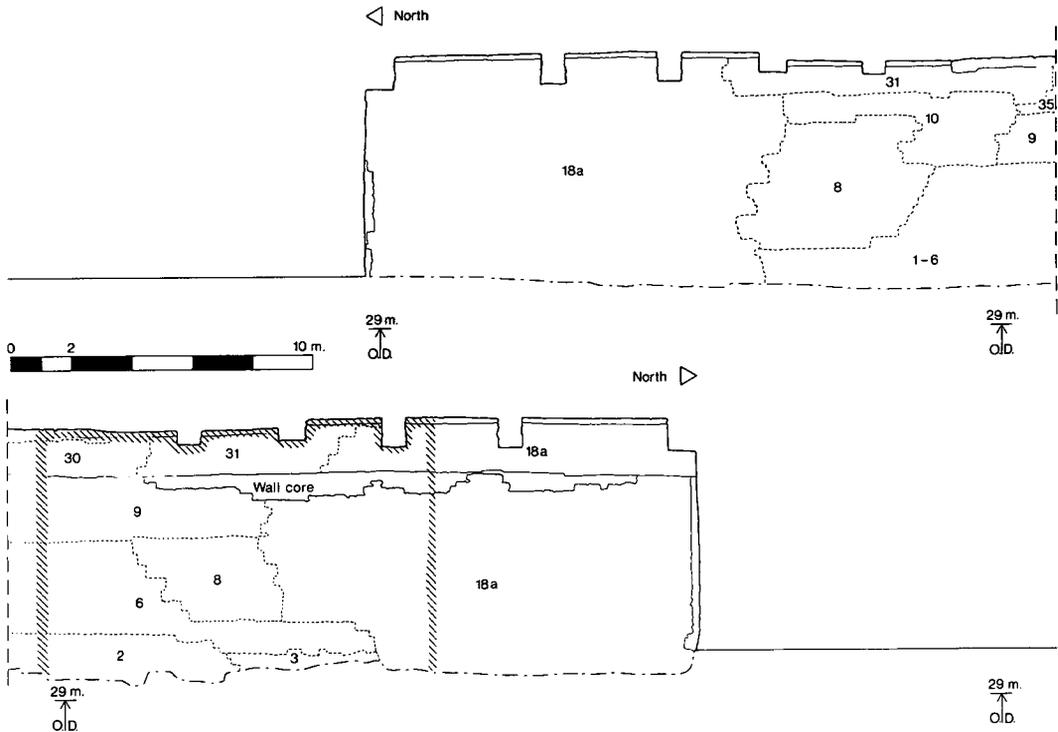


Fig. 4 Town Wall, Orchard Street: phased elevation section 2-3. For detail of masonry within shaded areas on figs. 3-6 see fig. 2.

to Closegate (c. 3.80 m) or that to the east of the Heber Tower (c. 5.50 m), than that of the heightened wall at c. 6.30-6.60 m.

Build 9-12 (figs. 4-5)

Subsequently the stretch of low wall was raised some 2 m by the addition of these builds. *Build 9* uses medium sized oblong ashlars, evenly coursed and closely jointed, and appears to have risen to the level of the present parapet walk internally. This was noted as early as the last century by Sheriton Holmes (1895-6, 3). *Builds 10* and *11-12* only appear on the outer face but seem to be associated. The latter may have been largely rebuilt in 1951 (PSAN 5, 1, 1951-6, 105-7). Evidently though the decision to raise the wall height was taken while wall construction was generally in

progress and before the curtain coming from the north had been joined to the White Friar Tower (see below, *Build 13*).

Build 13 (fig. 6)

Some 7.5 m south of the sections described above, *build 13* appears to have largely been constructed to full height in one operation. The masonry is regular and evenly coursed but not level, the whole structure appearing to have slumped southward. Conceivably this was once part of *build 14* and both were built, from the south and after construction of the low wall, to a different specification.

Build 16 (figs. 5–6)

Build 16 presumably represents a stitching together of the wall built from the south with the heightened curtain on the north, though there is no apparent reason for leaving so large a gap to be filled separately. From the deposits sealing its footings this section has to be of broadly mid-14th century date, so its insertion cannot have been long delayed.

Build 17–19 (figs. 3–6)

Two major mid-17th century rebuilds (*17* and *18a–b*) are apparent. The archaeological and documentary evidence for dating these builds is given in the discussion of Ph.5. Both sections have well coursed and dressed masonry on

their outer faces, mostly reused medieval wall stone. Though outward appearances were maintained the inner face and corework was of very poor quality, suggesting speed and economy outweighed quality of construction. Where the inner face of *build 17* had been spared recent repointing the wallstone was largely unmortared rubble with huge voids going back into the core. When the facework of *build 18* was repaired in 1951 a similar construction technique was noted. Earth bonding has also been noted in the town wall in Gallowgate, and may also indicate post Civil War reconstruction (Sheriton Holmes 1895–6, 110). *Build 17* was founded on a stepped rubble base in the mine crater, which had then been backfilled largely with midden material. The foundation trench for *build 18a–b* cut Ph.3.1 deposits and again contained redepo-

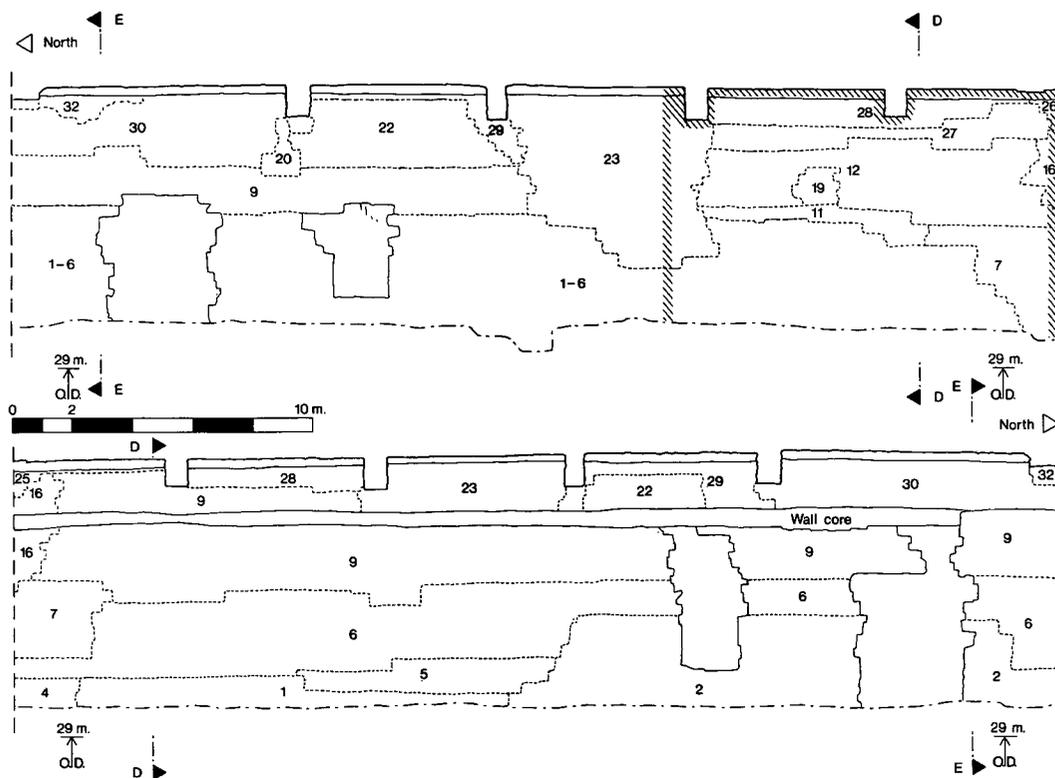


Fig. 5 Town Wall, Orchard Street: phased elevation section 3–4.

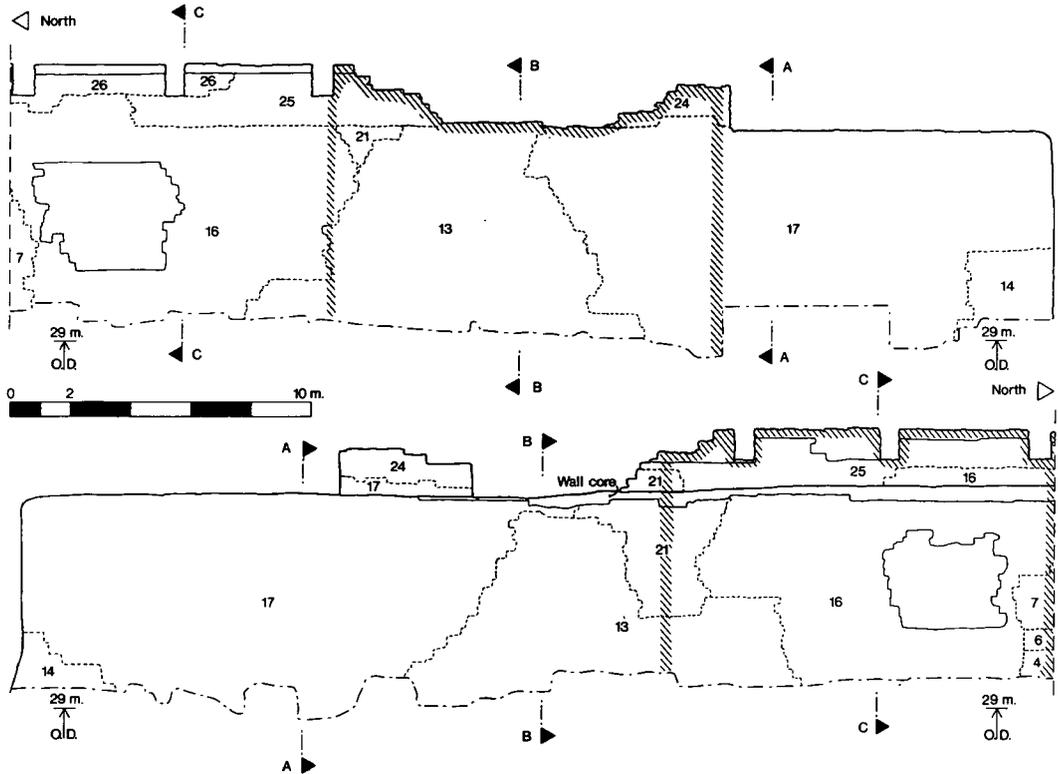


Fig. 6 Town Wall, Orchard Street: phased elevation section 4-5.

sited midden material. Pick marks were visible in the clay bottom and sides of the trench for build 18a. Both sections were built on a slightly projecting base course of rubble. A small patch of stonework on the outer face (*build 19*) is tentatively included here as possibly representing the repair of shot damage. An inserted piece of walling (*build 21*) on the inner face, and just visible on the outer, has no medieval characteristics and may be a repair to the junction of *builds 13* and *16* resulting from the nearby mine damage.

Build 23 (fig. 5)

This is a large area of brick facing in English Garden Wall bond, extending up to form part of the parapet. That this repair followed exten-

sive fire damage is evident from the reddening of the immediately adjacent stonework, and its late date is confirmed by the lower part of the patch cutting a line of joist holes associated with a building in existence by 1827 (Wood 1827; Oliver 1830, no. 199).

The Parapet

The parapet is extremely difficult to phase, though four small stretches (*builds 9, 16, 21* and *27*) have been tentatively associated with the heightened medieval wall. The parapet above the Civil War breaches (*builds 17* and *18*) has to be part of the c. 1647 rebuild if not later. Perhaps *22* and *30* should also be seen as post-war reconstruction. *Builds 28* and *29* are cut by the brick rebuild *23* but otherwise

TOWN WALL, ORCHARD STREET: CROSS-SECTIONS

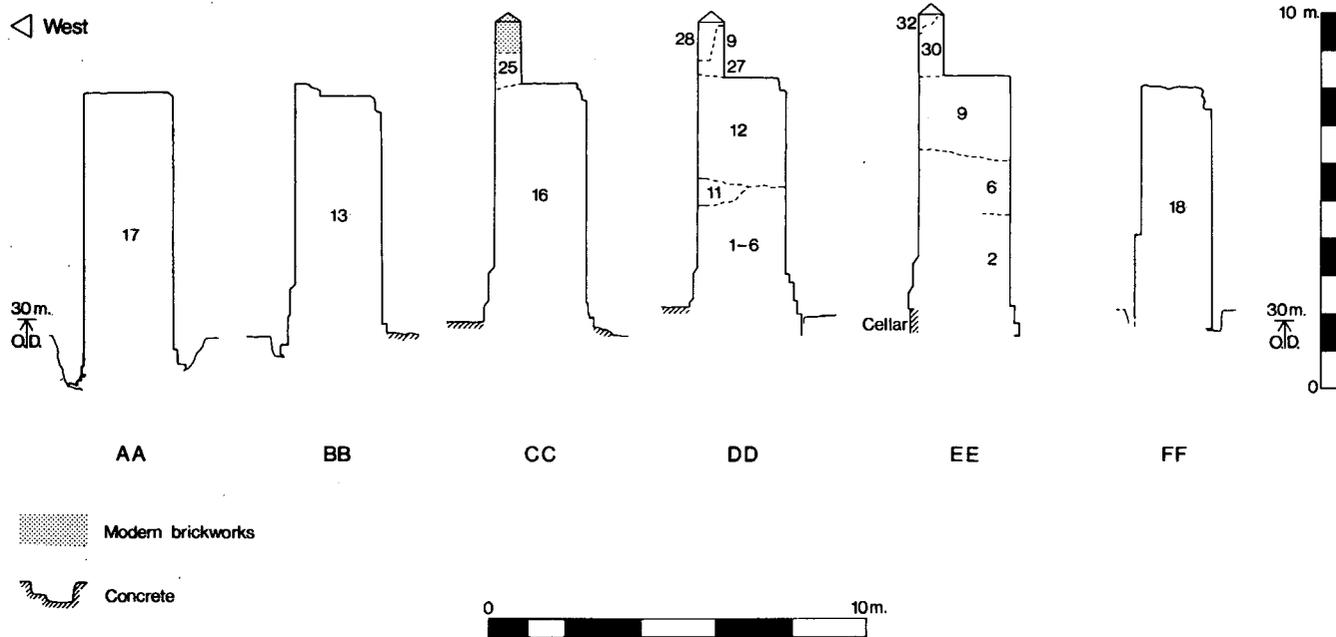


Fig. 7 Town Wall, Orchard Street: cross-sections.

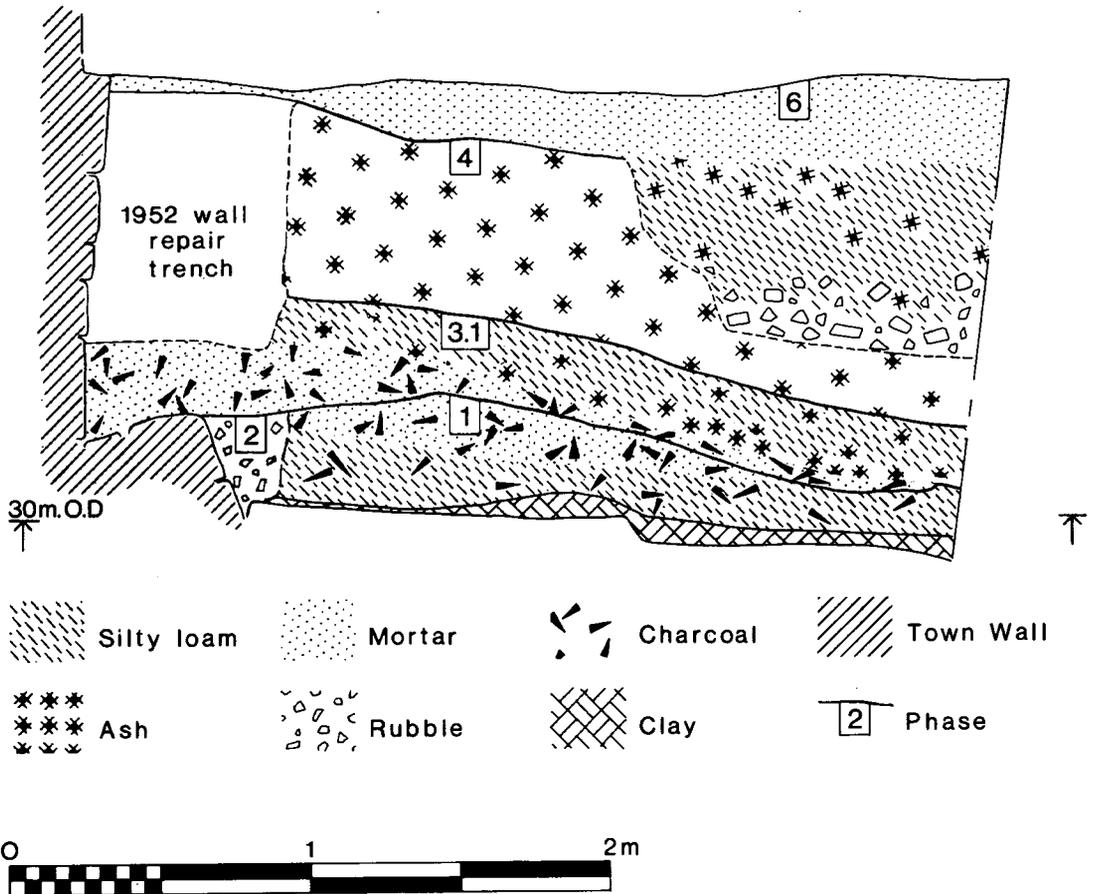


Fig. 8 Town Wall, Orchard Street: area G, north section.

undatable. *Builds 25* and *26* are almost entirely modern, with much rebuilding taking place in 1951 (*Weekly Chronicle* 10/11/51). A very recent date may also be suspected with *builds 31* and *32*, the latter having truncated four embrasures. The marked difference in the spacing of the embrasures is further indication of reconstruction; those nearest to and above the Civil War breaches are noticeably closer together than the ones above the substantially medieval central section of wall. The coping on the parapet is of such uniformity as to suggest that it at least is of almost entirely one post Civil War phase. Perhaps this was added when the walls were repaired at the time of the 1745

Jacobite Rebellion (*Newcastle Courant* No. 2702, 28 September–5 October 1745).

The original wall elevations, recording the wall stone by stone, were produced by rectified photography with manual additions and drawn at 1:25. These form part of the site archive and are available for study through Newcastle City Council Archaeological Unit. Because of the amount of space required to reproduce them here in full and at an appropriate scale, it was decided only to publish the phased outlines in this report.

ORCHARD STREET FINDS

* Indicates that an item is not illustrated.

POTTERY

Janet Vaughan

This report follows recent practice in referring to finds from other (mainly Newcastle) excavation reports by using an abbreviated title and catalogue number thus: *Pit 10* and *Ditch 205*. See bibliography.

The relative quantities of material from the different phases of the site are represented in the two pie charts. Comparison between them highlights the higher degree of fragmentation in the first two phases. The two tables give a breakdown of the assemblage by weight and by numbers of recorded vessels for each fabric group. Comparison between them shows that, for instance, reduced greenwares comprise a higher proportion of the assemblage by weight than by number of vessels. Large, heavy storage vessels are responsible for this. "Occasional" fabrics, less than 1% of the assemblage, have not been included in the table.

In this relatively small assemblage the medieval fabrics do not add a great deal to present knowledge of local wares in Newcastle. The illustrated vessels are unfamiliar forms or variations of forms already known from elsewhere.

Fabric number sequence used:

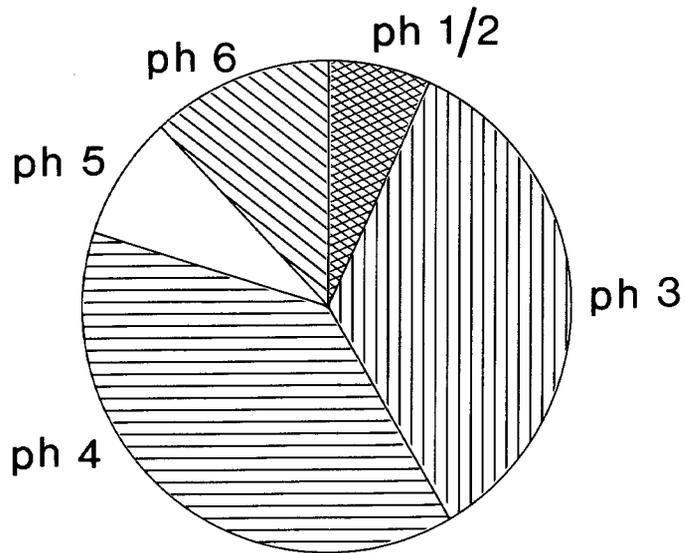
- 1 Roman
- 2 Dog Bank/early coarse ware
- 4 Buff white and orange/buff fabrics
- 6 Early reduced greenware
- 8 Later reduced greenware
- 10 Other medieval
- 11 Scarborough
- 12 French whitewares
- 16 Rhenish Stoneware—Langerwehe, Siegburg, Raeren
- 17 Cologne Frechen
- 19 Weser
- 20 Imported Redware
- 22 Whitewares

- 24 Cistercian
- 25 Blackware
- 26 English Whitewares
- 27 English Redware
- 28 Tin glaze earthenware
- 29 Staffordshire slipware
- 30 Westerwald stoneware
- 32 Later redwares
- 33 White earthenware
- 34 Other ?17th century wares
- 35 White salt glaze stonewares
- 38 Creamware
- 50 Unidentified/burnt etc.

The pottery from the 17th century rubbish deposit (phase 4)—illustrated graphically in the two bar charts—forms the most significant part of this assemblage, well over half of the vessels illustrated (the majority of them Redwares) are in this group. They form an interesting assemblage to "compare and contrast" with other 17th century groups from Newcastle. Plain redwares themselves can be difficult to date closely, but the whitewares (English and Low Countries), Weser and North Holland Slipware all indicate an early 17th century date. On the other hand more local wares common in the *Ditch* are either almost completely absent, like the Cistercian ware, or represented by only a small number of vessels, like the later reduced greenwares, which would seem to suggest that there is no significant 16th century element. This major dumping on the site also appears to have been completed before the influx of the large quantities of English redwares of Metropolitan type so familiar from the *Bastion*, *Pit*, and *Blackfriars* assemblages (see below under *Redwares*). Thus indications are that this assemblage has quite narrow date brackets and, apart from a few obviously early residual pieces, the fabrics and vessels which occur in it are representative of those in use in the first half of the 17th century, before the Civil War. The presence of imports which have their origins in the late 16th century (as, for instance, some stonewares) could indicate continuing manufacture or survival rather than "residual" or redeposited rubbish.

All vessels were given a number and vessels

Phase assemblages compared by weight



sherd count

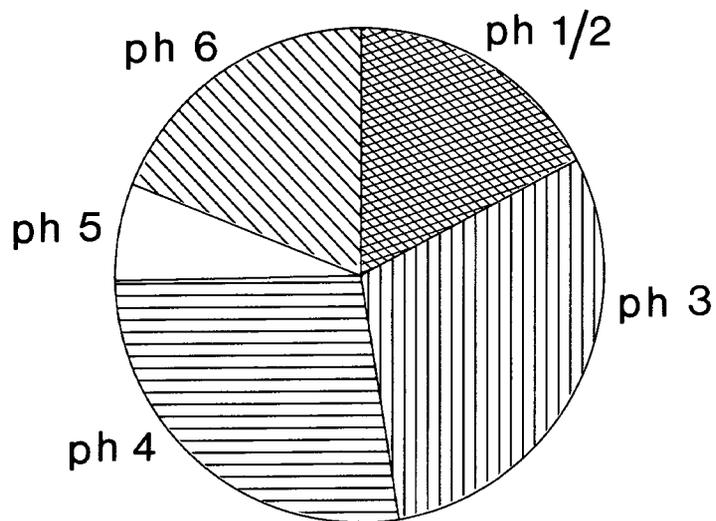


Table 1 Fabric/phase groups: weight in grams

fabrics	ph.1/2	ph.3	ph.4	ph.5	ph.6	totals	
1	16	7				23	0.0%
2	30	30	25			85	0.2%
4	1628	2365	283	122	498	4896	10.5%
6	454	808	153	55	56	1526	3.3%
8	488	10189	2219	1137	825	14858	31.8%
10	214	155	347	39	101	856	1.8%
11	108	312	97		51	568	1.2%
12	1		82	36		119	0.3%
16	22	1191	753	23	173	2162	4.6%
17		27	931	53	110	1121	2.4%
19		16	511	187	27	741	1.6%
20	134	557	6960	1490	369	9510	20.3%
22			261			261	0.6%
24		15	5			20	0.0%
25		69	1014	118	17	1218	2.6%
26		73	277	113	24	487	1.0%
27		98	2529	61	162	2850	6.1%
28			109	18	181	308	0.7%
29					27	27	0.1%
30		7	81	7	90	185	0.4%
32	3	50	764	104	1673	2594	5.5%
33			12		1137	1149	2.5%
34			411	20	32	463	1.0%
50	74	307	147	111	81	720	1.5%
	3172	16276	17971	3694	5634	46747	100.0%
	6.8%	34.8%	38.4%	7.9%	12.1%	100.0%	

not illustrated but referred to in the text are given their V. number and can be identified in the archive by this. Contextual information follows the V. number, with the letter denoting area. W indicates the contexts recorded during the Watching Brief.

To avoid repetition, phase numbers will only be given with the first entry for a particular context.

Dog Bank type

1* Fragment of strap handle with central groove. Coarsely gritted light brown fabric with a small patch of greenish glaze, possibly Dog Bank Fabric 1. Jugs were indicated at the kiln site (Bown 1988, p. 36) although no handles have been found before. See also no. 14 below. [V.328: Ph.1, B/87.067]

Buff White wares

As the fabrics of vessels vary so much individual descriptions have been given. The group includes

buff white and orange buff fabrics. In the archive they can be distinguished but, as commented on with reference to the Closegate material (Vaughan forthcoming), the significance of the distinction has yet to be demonstrated. Seventeen of the 30 vessels in this group were orange buff, one of them hard over-fired.

Cooking pot/jars

There were 10 rims of this type of vessel, five of them sooted. Three bases were also sooted.

2 Square clubbed rim. Slightly pinkish buff with some very coarse inclusions (quartz and quartz aggregate and red ?iron oxide). Sooted. [V.332: B/87.067]

3 Similar to 2. Pale orange buff, not sooted. [V.333: B/87.067]

4 Rim. Hard fired with grey core, dark red brown external surface with a spot and runs of pale green glaze. Not sooted. [V.330: B/87.020 Ph.2]

Table 2 Vessels in phase/fabric groups

fabrics	ph.1/2	ph.3	ph.4	ph.5	ph.6	totals	
2	1	2	1			4	1.0%
4	17	22	4		4	47	11.3%
6	7	18	2			27	6.5%
8	6	47	11	4	3	71	17.1%
10	1	3	2	1		7	1.7%
11	1	5	1			7	1.7%
12			2	1		3	0.7%
16	1	17	9		2	29	7.0%
17			9	1	2	12	2.9%
19			12	4		16	3.9%
20	1	13	78	13	9	114	27.5%
22			8			8	1.9%
24			1			1	0.2%
25		1	15	4		20	4.8%
26		2	5	2		9	2.2%
27		1	18	2	3	24	5.8%
28			3	1	6	10	2.4%
30					1	1	0.2%
34		1	4			5	1.2%
	35	132	185	33	30	415	100.0%
	8.4%	31.8%	44.6%	8.0%	7.2%	100.0%	

5 Grey fabric with light red oxidized exterior, moderately quartz gritted with some red and black inclusions. Traces of glaze internally. Neck with lid seating. Not sooted. [V.262: G/88.064 Ph.1]

6 Wide flat top. Coarse orange/buff fabric with ill sorted fine to coarse quartz and quartz aggregate, fine to medium black iron oxide. Sooted. [V.321: W/88.001 Ph.1?]

7 Hard fired coarsely gritted fabric. Light brown with darker red brown surfaces. Unsooted. Similar to *Queen St.* 133 (Bown 1988) and *Closegate 5* (Vaughan forthcoming). [V.259: G/88.036 Ph.1]

Other vessels

8 ?Chafing dish. Light grey fabric with frequent fine quartz inclusions, buff surfaces, glazed externally (not on bottom) green to mottled brown glaze. [V.274: G/87.105 Ph.3.1]

9 Globular storage vessel/urinal with internal sediment, similar to *Ditch 37/86*. Light grey external, orange/buff internal fabric, fine inclusions with occasional medium to large. External green/brown glaze with brown patch. [V.310: W/88.007 Ph.4?]

10 Base with pinched decoration. Orange buff

fabric with light grey external margin. Frequent fine, fairly frequent medium quartz. [V.311: W/88.007]

11 Jar rim. Fairly coarse buff white fabric with quartz and black iron oxide. Pinky brown surface with spot yellow glaze. [V.329: B/87.003 Ph.6]

Gritty wares

Of the 13 vessels in the reduced fabric there were three square sectioned cooking pot type rims, three strap and one rod handle and a small jug rim as *Ditch 9*. The illustrated vessels were all oxidized wares.

12 Cooking Pot rim, sooted, with internal lid seating. [V.331: B/87.063 Ph.1]

13 Cooking Pot type rim. [V. no. 312: W/88.018 Ph.3.1]

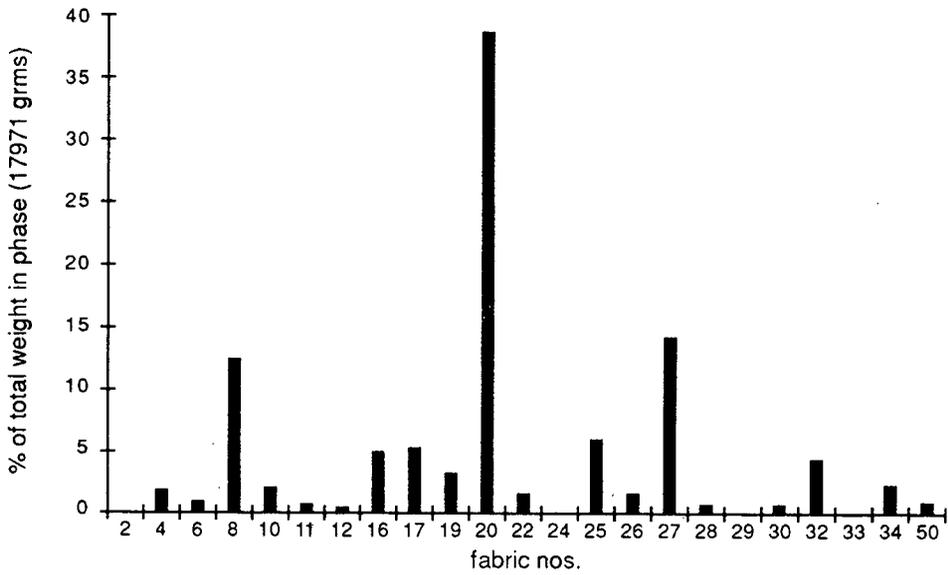
14 ?Jug. Fragment of strap handle flaked off side vessel, with two grooves and patch of greenish glaze. [V.255: G/88.071 Ph.1]

Reduced Greenwares (RG1, 2, 3, 4, 5)

About 20% of the reduced greenware was somewhat grittier than the classic type 4 as defined in the *Ditch* report though not as coarse as the early, gritty

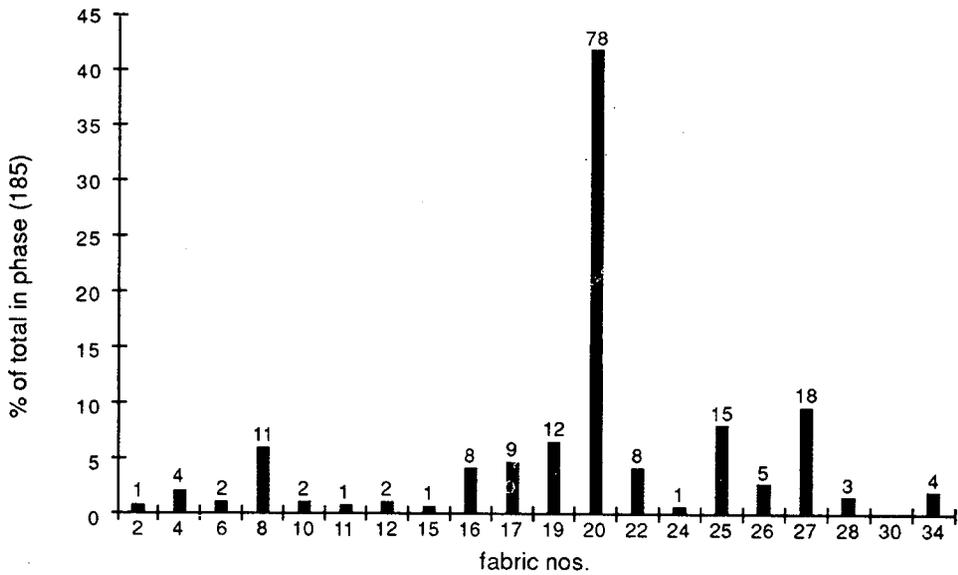
Phase 4 Fabric Groups

compared by weight



Phase 4 vessels

actual numbers given above each column



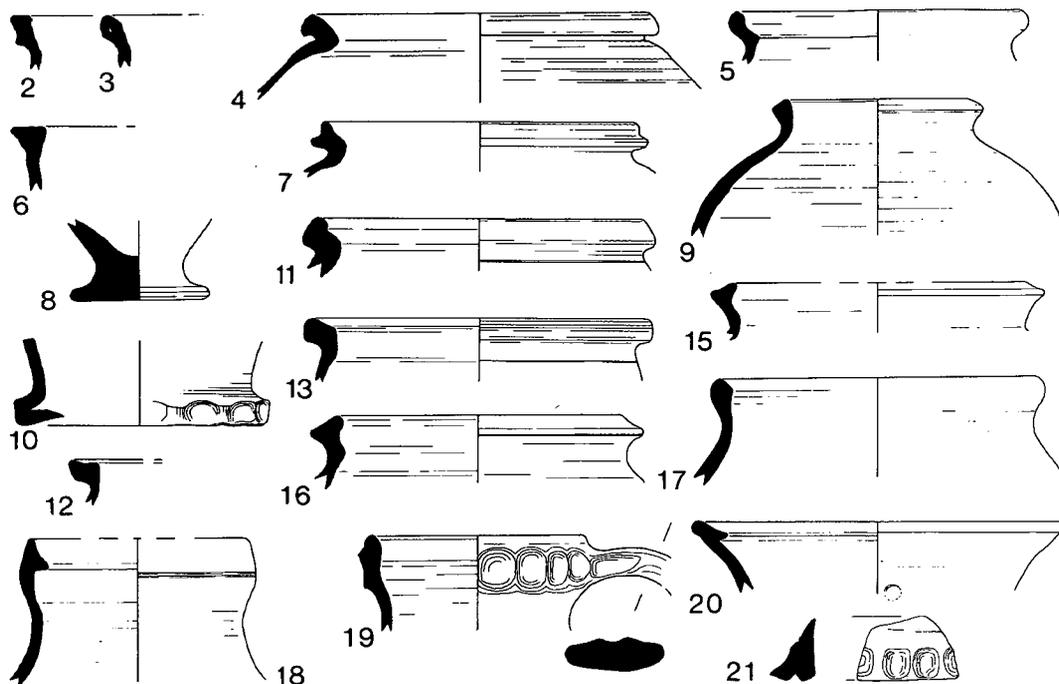


Fig. 9 Town Wall, Orchard Street: medieval pottery (1:4).

wares 1, 2 and 3. Illustrated vessels of this type are noted below. Over two thirds of the vessels recorded were either fragments of handles or plain bases.

15 Rim. RG4. [V.214: G/87.118 Ph.3.1]

16 Jar rim. Signs of pattern on body. Similar to *Ditch* 35. RG4 [V. no. 198: G/87.119 Ph.3.1]

17 Jar rim. Fully glazed. Similar to *Ditch* 42. RG5 [V.242: J/88.083 with fragment from 88.099 Ph.6]

18 ?Cistern. Very pronounced lid seating. Moderately gritted with fine grits, light grey external margin. See *Closegate* 104 ("unknown"). RG3/4? [V.179: W/88.015 Ph.3.1?]

19 Jug. Hard dark grey fabric with oxidized (red/brown) margins on handle and on large part of body externally where not glazed. RG4? [V.180: H/88.063 with sherds from W/88.003 and W/88.007]

20 ?Chafing dish. Mid grey fabric with fine to medium quartz grit. Green, slightly metallicky gold external glaze. Light brown unglazed surface with some sooting internally. RG3? [V.176: W/88.003]

Unknown ?Medieval fabric

21 Possibly part of pedestal. Sherd has an applied outer frill. Light red brown fabric fairly abundantly gritted with medium quartz of various colours. Streaky green/brown glaze externally with dull green glazed interior. [V.378: G/88.030 Ph.5]

Blackware

All the mugs seem to have two distinct bands of rilling below rim and just above base like Brears type 2 (1971) but body shape is different. See *Blackfriars* 79.

22 Mug. Main sherd has only an indication of the rim but there was a detached rim sherd with handle probably the same vessel which would give the mug two handles, but not close together. Fabric of this hard fired dark red with abundant fine quartz grits. [V. no. 158: G/87.074 Ph.4]

23 Mug. A larger base with two handles in 20% of circumference. There could be another one exactly

opposite a gap. Body shape and fabric as 22. [V.159: G/87.074]

24 Seems very large for a mug. [V.160: G/87.074]

25 Cup similar to Brears type 6. Fabric very hard fired dark grey/red, with dark brown slightly metallic glaze like Cistercian ware. [V.156: W/88.003]

Redwares

A third of the recorded vessels were redwares. The majority would appear to be Low Countries imports, but there were a substantial number with features more typical of English wares such as those from Norwich (Jennings 1981, fig. 71) but not of Metropolitan type wares. There was one Metropolitan type bowl rim with horizontal handle as *Pit* 10 from the midden (V.43 W/88.003) and one from outside the wall (V.411 B/87.007 Ph.6). A small jar rim sherd came from the same area (V.410 B/87/003 Ph.6). The only rolled plate rim, abraded but probably once slip decorated, came from a post-Civil War context (V.272, G/88.030).

Cooking pots/Cauldrons

26 Rod handle could suggest an English origin (see above) or possibly a Lower Rhine product, though see Hurst *et al.* 1986, p. 134 no. 193. Red brown sandy fabric with darker surfaces. Sooted externally with splashes of glaze. Inside there is a zone of white slip round the lower part of thin trickles from the rim. Under the glaze these areas appear light greenish yellow to yellow speckled with brown. Glaze cover erratic and patchy. Inside opposite the handle there is a large unglazed patch. [V.1: G/87.074]

27 Thin thrown orange brown fabric with bright orange/brown glaze, thick in a patch where body angles in but with unglazed patches externally. Similar to *Norwich* 947. Two separate small tripod

feet possibly same vessel. Under the microscope it is clear that the fabric of the handle is much grittier than the rest of the body. [V.3: G/87.074]

28 Thinly thrown sooted vessel. Body similar in form and size to the small bowl form, "porringer", as *Ditch* 231 and *Blackfriars* 29, although the beginning of a change in angle at the top suggests a more everted rim. The "porringers" have ring bases and this has a tripod foot. [V.5: G/87.074]

29 Collared rim is typical of the Low Countries from 15th century onwards but the lid seating here is very distinct and seems to have more in common with the English vessels from Norwich (Jennings 1981, fig. 71) as has the basal angle. The single handle present is above one of the feet so there may not have been another one (Ellison 1981, p. 131). The red brown fabric with very fine sand and occasional medium quartz grit is not typical of Low Countries imports. Zones and patches of glaze on exterior. Thin, cracked glaze round inside bottom half. Small patch of sooting over one foot. [V.18: W/88.003]

30 Rim like *Ditch* no. 221 (a bowl form). Well sooted all round. Pinky brown sandy fabric with some white streaks. [V.19: W/88.003]

31 Red brown sandy fabric with darker brown surfaces, patches of dark brown glaze inside. Form not familiar. [V.21: W/88.003]

32 Lid seated neck with collar. Width of neck is an indication of a late date (Ellison, 1981). Brown iron-speckled glaze inside with few larger iron spots. Partly glazed externally with sooting. Scar on top of handle. [V.24: W/88.003]

33 Collared rim with lid seating. Light orange fabric, internal bright orange glaze. [V.56: W/88.003]

34 Possibly a pitcher but sooted externally. This

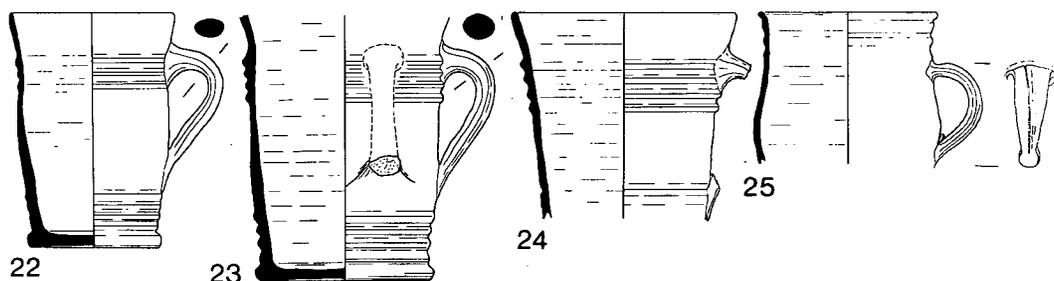


Fig. 10 Town Wall, Orchard Street: Black wares (1:4).

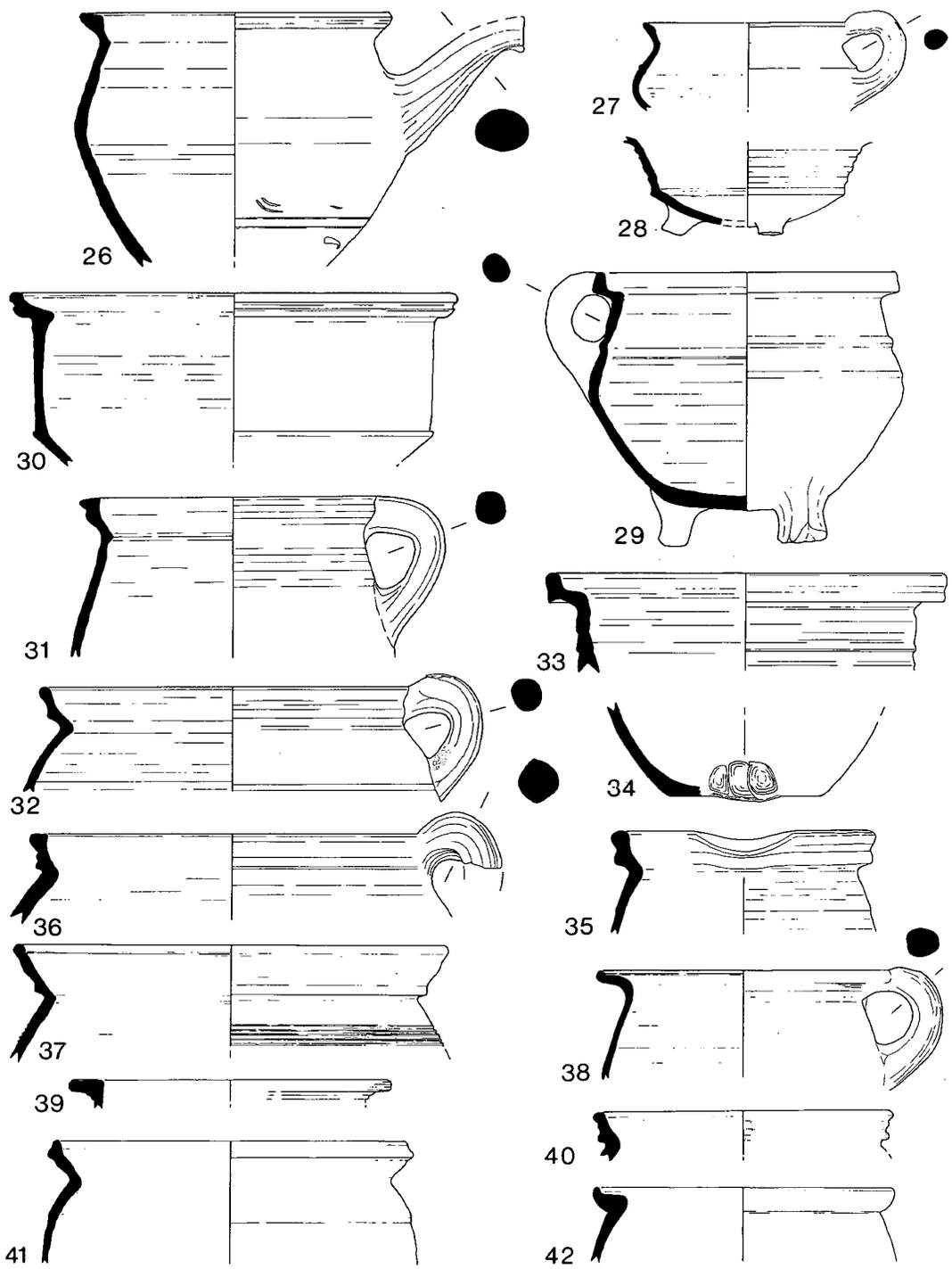


Fig. 11 Town Wall, Orchard Street: Redware cooking pots and cauldrons (1:4).

form of pinched foot is a late 14th–early 15th century type. See also an unglazed example *Norwich* 997. Coarse red/brown fabric with thin rough brown glaze internally. [V.74: W/88.003]

35 Collared rim as *Norwich* 968 and *Bastion* 7 (“unknown”). The sherd is burnt and discoloured. Ill sorted quartz inclusions very fine to medium and occasional very large. [V.77: W/88.003]

36 Lid seated rim as *Ditch* 164 but with wider mouth and collar. Sandy light red fabric with red brown glaze. Handle has added grits, see no. 27 above. [V.97: J/88.057 Ph.5]

37 Unsooted vessel of cooking pot type. Light red fabric with moderate medium quartz grits. Glazed yellow to orange with iron spots and streaks and a patch of pale green where fabric is reduced and an unglazed patch externally. [V.28: W/88.003]

38 Chamber pot form as *Ditch* 240. Orange/brown fabric glazed internally with dark red external surface. Scar on top of handle. [V.29: W/88.003]

39 Similar to above with ridges below rim. [V.31: W/88.003]

40 Unsooted vessel with collar and ridges. Fully glazed brown, slightly speckled. [V.33: W/88.003]

41 Wide neck with pronounced lid seating and collar, (see Hurst *et al.* fig. 59 no. 184) late 16th century. Coarser fabric with fine and medium various coloured quartz inclusions. Fully glazed bright red brown. [V.64: W/88.003]

42 Chamber pot type *Ditch* 240 but with bead above. Fully glazed bright orange/brown. [V.98: J/88.057]

Other Cooking Vessels: Skillets etc.

43 Skillet, probably English (see Jennings 1981, fig. 70 for similar vessels). Fabric light red/orange moderately gritted with medium various coloured quartz grits occasional large. Patchy brown glaze internally. [V.103: H/88.097 Ph.3.1]

44 Skillet showing part of spout and probable scar of foot. Heavily sooted. [V.48: W/88.003]

45 Possibly skillet/frying pan. Very similar to *Ditch* 213, a dish and there is a very small speck of slip trail on top of rim. Sandy orange fabric with occasional medium quartz grit, glazed internally. [V.30: W/88.003]

46 Spouted vessel. [V.71: W/88.003]

47 Flat topped rim. [V.2: G/87.074]

Bowls and Dishes

48 Rolled rim, an English redware type familiar from *Pit*, *Bastion*, *Blackfriars*, there were three others from the midden, one associated with a horizontal handle (V.43). The fabric of these was less sandy and they were tentatively identified as English. Change in body angle at bottom of sherd though does not appear to be base. Fabric red brown sandy. Some reduction, on inner face of rim in particular, has turned glaze greenish brown. Glazed externally except for outer face of rim and small area visible below change in angle. [V.5: W/88.003]

49 Horizontal handle as Low Countries types see *Norwich* Fig. 57. Coarse light orange fabric. [V.53: W/88.003]

50 North Holland Slipware, dish rimmed bowl (see Hurst *et al.* 1975, fig. 5 no. 32, dated 1623). White slip with speckled copper green glaze inside. Rim flange with slip trail covered in plain lead glaze. The rim flange pattern is usually quite complex on this type of vessel (*ibid.* p. 59) dated to second quarter of the 17th century. [V.16: G/87.074 with fragment from W/88.003]

51 North Holland Slipware. Similar to no. 50 though slightly bigger and angle of body from flange is steeper. Glaze on unslipped rim and flange is a dark greeny brown and the slip dashes do not show up. [V. no. 17: G/87.074]

52 Bowl with slip trail decoration. ?Utrecht. [V.66: W/88.003]

53 ?English redware bowl with flange and slip trailed decoration in Metropolitan style but shape is not familiar. The vessel may be oval as the rim is on a different plane to the base. [V.383: W/88.003]

54 Low Countries dish on flanged feet. As *Ditch* 205 (late 16th century). Similar vessels with internal slip coating are a common Low Countries find in 16th century and one was found on the Carmelite Friary site near the Wall (Harbottle 1968, 212, no. 96). This vessel is most likely to be 17th century. Sandy light red brown fabric with a few iron speckles in glaze and runs of glaze on back. [V.41: W/88.003]

55 Dish. Form as *Ditch* 207, a frying pan. Sandy light red/brown fabric with bright orange glaze to outer surface of rim. [V. no. 62: W/88.003]

56* ?Low Countries dish on feet with horizontal handle. Another unfamiliar form for Low Countries. [V. no. 117: B/87.032 Ph.5]

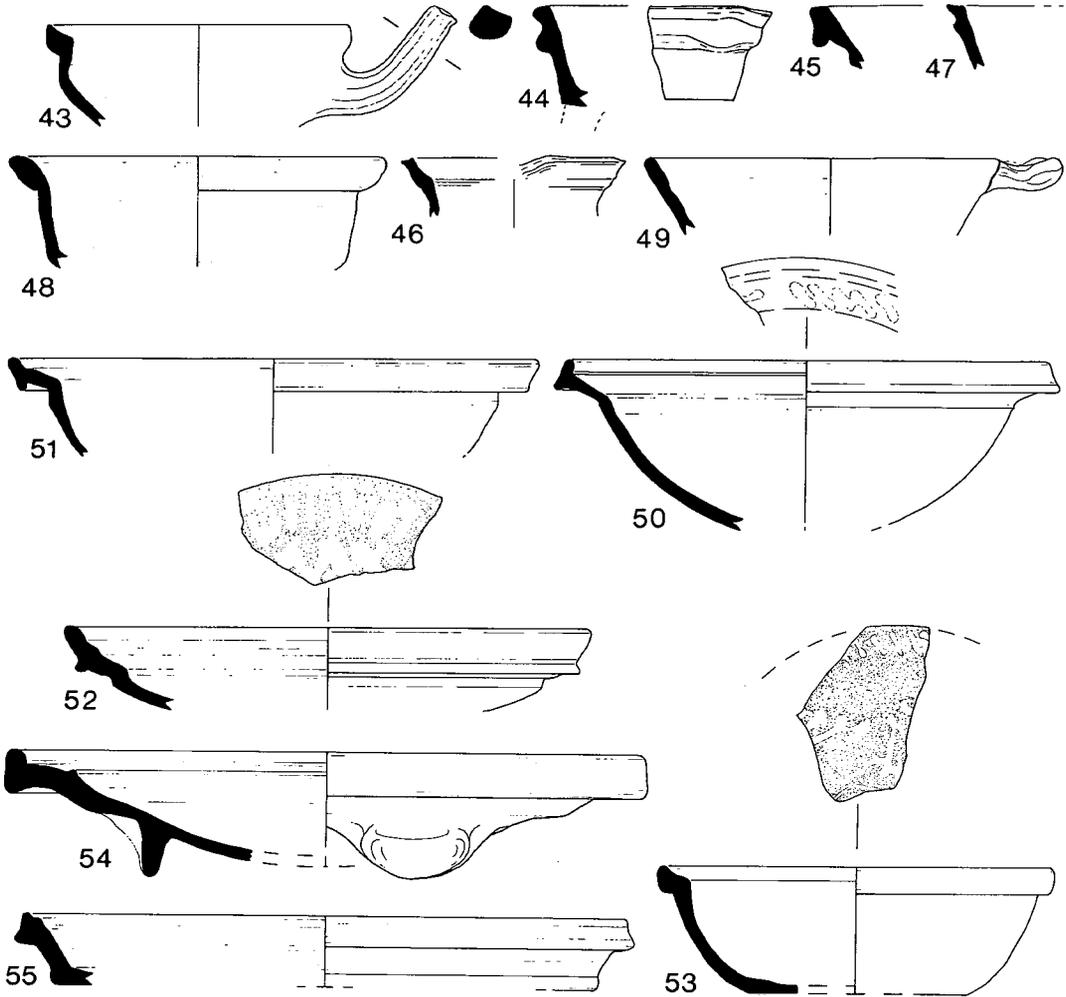


Fig. 12 Town Wall, Orchard Street: Redwares (1:4).

Whitewares

Seven vessels in Low Countries whiteware came from the early 17th century midden deposit with another unstratified. Although white fabrics occur earlier than the 17th century in the Low Countries they do not become common till then (Ellison 1981, p. 147 and Ellison 1983, p. 156). Three vessels indicated tripod feet, two of them probably shallow vessels, and there was one ring base. Of the nine other whiteware vessels five were the early 17th century Southern type (see nos. 61–3) and four were not definitely provenanced.

57 Low Countries dish/bowl. This seems to be a development or refinement of the collared rim, applied and carefully formed. The fabric is fairly coarse with moderate medium quartz grits of various colours. Bright green glazed internally. [V.352: G/87.074]

58 ?Low Countries dish. Off-white fabric with abundant fine to medium inclusions, mainly various coloured quartz with some black specks. [V.362: G/87.074]

59 ?Whiteware jar. Hard pinkish off-white fabric with occasional fine quartz inclusions. Glazed inter-

nally, appears to be pale greenish yellow though burnt and cracked. [V.389: W/88.003]

60 ?Whiteware, possibly a jug. White fabric with moderate very fine quartz inclusions. Fully glazed dull greenish yellow, distinctly different from the other yellow glazed whitewares. [V.359: W/88.010 Ph.4?]

61 English Whiteware, everted jar rim. Yellow glazed internally. [V.357: W/88.003]

62 Southern Whiteware "Pipkin" with hollow handle and external lid seating. First half of 17th century (see Moorhouse 1970, p. 45). Yellow glazed internally. A sherd with sharp base angle and tripod foot, probably a similar vessel, occurred in J/88.078, V.358. [V.327: W/88.003]

63 Southern Whiteware cup with side handle and simple upright rim, some body rilling. Internal yellow glaze with some splashes externally. Another simple rim, 8 cm diameter, occurred in H/88.075, V.356. [V.355: W/88.003]

64 ?Whiteware, rounded base fully glazed rich green. Fine white fabric (similar to the Southern

type) with moderate mostly fine, occasional medium grey quartz inclusions. [V.361: J/88.057]

Tin glazed Earthenwares—"Delft"

Of ten vessels six occurred in contexts with china and the later red earthenwares, including no. 66. Apart from the small jar illustrated the midden deposit only produced two other vessels: a flatware ring base and another, larger drug jar. Another ring base was from J/88.057 associated with the 17th century rebuild. This small number of vessels contrasts strongly with the other major 17th century assemblages in Newcastle.

65 Anglo-Netherlands. Tiny drug jar in a pink fabric with blue and white horizontal stripes. [V.365: G/87.074]

*66 ?Spanish tin glaze. Flask with some sort of lug or handle, rather abraded so difficult to see. Soft pinky buff fine fabric with yellowish internal glaze and white external with blue painting. Residual. [V.366: G/87.092 Ph.6]

German Slipwares

The presence of 12 Weser vessels in the midden

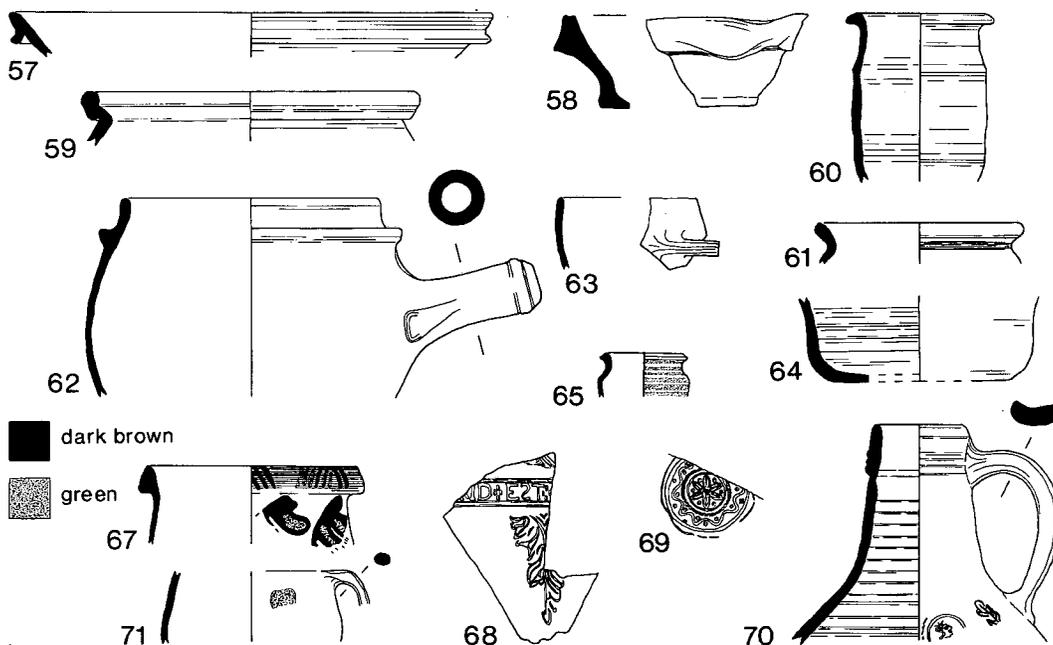


Fig. 13 Town Wall, Orchard Street: Whitewares and other post-medieval pottery (1:4).

deposit is another indication of its specifically early 17th century date. The only Werra sherd from the site was unstratified. At Blackfriars Werra appeared in smaller quantities than the Weser and also in the assemblage from Norwich (Jennings 1981, p. 82). The Weser hollow wares are mentioned below, most of the vessels were flatwares: two bowls with handles, eleven other dishes/plates. The fabric colour varies considerably from white through pink, buff to light red. Half the vessels have no overall white slip and thus appear "reversed", except for V.336 where the fabric is so white the effect is the same as the slipped vessels.

67 Hollow vessel, possibly small pipkin. Yellow buff fabric with white slip coverage finishing internally just below rim. Pattern in dark brown and green. Two other hollow vessels came from same deposit: a small rim sherd with white and green dashes [V.338], and a leg and basal angle with dark and light green slip trailed decoration with no overall white slip [V.339]. [V.345: W/88.003]

German Stonewares

In addition to the usual stoneware mugs and jugs were three fragments of a Raeren panel jug from the midden. These rather rare imports date to the end of the 16th century (Jennings 1981, p. 112) [V.119: G/87.074 with a fragment from W/88.003]

68 Cologne/Frechen jug. Body sherd with inscription and leaf see *Norwich* 797. Brown glossy glazed exterior changing to mottled appearance. Light grey internal surface with sparkly appearance. Under the microscope small black and red specks are visible. [V.155: G/87.074]

69 Cologne/Frechen medallion. Second half 16th century, see *Norwich* Fig. 49. Light grey fabric, grey exterior with dark brown patches mottled grey. [V.148: W/88.003]

70 Cologne/Frechen jug with leaf and medallion (see *Norwich* 797). Dark grey fabric. Dark brown speckled exterior with brownish interior unglazed except at top. [V.149: W/88.003]

Unknown Provenance

71 White stoneware with spot of dark grey slip and dull green glaze. Very thinly thrown, with thin handle. The context also produced Scarborough ware, buff white ware, blackware, Raeren and Low Countries redware. [V.404: H/88.063]

WINDOW GLASS

Pam Graves

This report is a summary of the full report and analysis which forms part of the site archive. Numbers in square brackets in the text—e.g. [72]—refer to the published catalogue of items. The archive report catalogue numbers are given at the end of each entry here, e.g. (Cat. 20).

Medieval window glass, painted and plain, was present from Ph.3.1 to Ph.6. The bulk of the material derived from Ph.3.1 and was concentrated in a closely related group of excavated contexts in Area G [87.118–121; 123–4; 127; 130; 139]. A small group of 12 fragments from disturbed Ph.3.1 contexts was collected during the watching brief in 1988 [88.013; 014; 019; 021], and some scattered pieces (9 frags) were found during the subsequent excavation in area H and adjacent to area G [88.050; 062; 063; 066; 072]. Another group of 17 fragments [88.003B] was collected during the watching brief and assigned to Ph.4, though probably contaminated with Ph.3.1 material.

The painted window glass was quantified by area since this can be related to function (Baxter and Cool 1991). The fragments were measured to the nearest $\frac{1}{4}$ cm using a 1 cm grid and the results are given in square cms. The plain glass was dealt with more simply, a sample being used to give an area:weight ratio, the resulting factor being multiplied up to give an approximate total area.

The glass is in varying states of decay. In this report "opaque", unless otherwise stated, denotes the dark grey–brown corrosion product of potash glass. "Translucent" glass may have various tints but still transmits light; "transparent" glass may have slight tints but can be seen through quite clearly. The term "white" is used for essentially colourless glass, though some of this has tints. "Opaque white" refers to a solid, non-transmitting white, only found as a corrosion product in this assemblage. The corrosion patterns in the assemblage are consistent with a potassium composition. Pitting of

the external (unpainted) surface, a result of external exposure while part of a window, is evident on many examples. Some larger pits have joined to form interlinked grooves as with [93]. Much of the white glass has a green tint from iron having been present in the constituents, probably in the sand.

Manufacture

The presence of fire-rounded edges is evidence of the cylinder method of flat glass manufacture, the edges being those cut in opening out the cylinder and subsequently melted when the cylinder was placed in an oven for flattening out. Other indications of cylinder blown glass are elongated air bubbles (seeds). Early cylinder blown glass had one matt and one glossy surface from having been opened out onto an ash-covered table in the kiln. There is one possible example of this in 87.127. In the same context, blue, green and yellow glass occurred as pot metal (coloured all the way through), the first predominating. Three tones of red were represented in the flashed glass from this context. Painted decoration is red/brown, typical of medieval iron-oxide based enamel.

Date and origin

Most of the fragments date to the first half of the 14th century and are stylistically in keeping with the general forms of contemporary window design at York, the main glass-painting centre in the North of England at that time. The glass itself, however, may have been imported. A York origin is a possibility since the medieval window glass at St. Mary the Virgin, Morpeth, has been attributed to the All Saints North Street glazier's workshop in York, and surname evidence suggests that workers responsible for the west wall glazing in the Minster in the 1330s may have come from Northumberland. The coloured glass would have been imported, possibly from the Rhineland, while the white window glass could have been made locally. Glass manufacture was certainly taking place near Leeds in 1479 (Knowles 1936, 197–8, n. 1).

Decorative styles

1. *Grisaille*

This is the earliest glass from the Orchard Street assemblage, and is represented by two fragments from context 87.127. One [72] has a curvilinear design on a cross-hatched ground; the lines possibly represent the curling stems of trefoils. This form of *grisaille* occurred throughout the 13th century and particularly between the 1220s–80s. Without a trefoil head it is impossible to be more specific about the form or date, though the majority of foliage in the north of England belongs to the mid-13th century, for example fragments in Brinkburn Priory, Northumberland (Evetts 1942, 94–5) and Durham Cathedral (sIX2c, G/wI 36, Prior's Hall, Haselock and O'Connor 1980, 109, 125). In York Minster there are lancets of similar *grisaille* in the south transept dating to c. 1240 (sXXV and sXXXVI) and the Five Sisters, dating to c. 1250 (O'Connor and Haselock 1977, 325–8, fig. 91).

A second type of *grisaille* is represented by [73–74]. These suggest oak leaf *grisaille* on a plain ground, with the edges of the panes defined by strapwork. This form of *grisaille* occurs in the Chapter House, York Minster, dated to c. 1285, and in the nave aisle windows dated to the early 14th century (O'Connor and Haselock 1977 *passim*). It is also present in Durham Cathedral (sIX 3c, Haselock and O'Connor 1980, 117). The same form possibly occurs in [76]. The thinner glass and more delicate line drawings are probably from quarries, and can be compared with the *grisaille* behind the figure of a bishop at St. Mary's, Ponteland, Northumberland (sII; French and O'Connor 1987, Pl. 28c). This glass has been dated to c. 1325–40 (*ibid.*, 22). The tip of a different quarry design is represented by a single yellow-stained edge fragment [77].

Grisaille was popular in the 13th century since white glass, on which the pattern was drawn, was cheaper than coloured which had to be imported from the Continent. It may have been standard glazing for less wealthy religious institutions, and has been found in

other Carmelite friaries, such as Perth (Lindsay 1989). Possibly the grisaille was installed by the Friars of the Sack before their house was taken over by the Carmelites in 1307, or the latter may have brought it with them from their first house at Wall Knoll.

72 Opaque, with one short length of grozing. Painted with design in reserve on a lightly cross-hatched ground. Mid-late 13th century. G/87.127 Ph.3.1. (Cat. 20)

73 Quarry; opaque white with two grozed edges. Painted with the edge of a quarry and a line along the grozed edge from which issues a curling stem in trace line. Late 13th–14th century. W/88.003B. (Cat. 70)

74 Transparent white with one grozed edge. Painted with the lower half of an acorn in trace line and very dilute paint. Oak leaf grisaille, late 13th–early 14th century. W/88.014. (Cat. 76)

75 ?Quarry; opaque white, painted in thin trace line. Oak leaf grisaille, probably second or third quarter 14th century. W/88.019. (Cat. 77)

*76 Semi-transparent white, with one grozed edge. Painted with a corner of overlapping strapwork lines G/87.127, Ph.3.1. (Cat. 53).

77 Semi-translucent white, one short length of grozing. Painted with lines defining the edge of a quarry which has been stained yellow on the reverse. Second quarter 14th century or later. H/88.066, Ph.3.1. (Cat. 91)

2. *Human or animal forms*

All examples occur in 87.127. Two small fragments depict hair [78–79]; the style of drawing of the first of these, and the use of smear shading on both, suggest a date in the second quarter of the 14th century or later. One fragment [80] is a border design possibly from a jewelled hem or a crown. The most interesting pieces join together to show a hand holding a book [81], probably from the figure of a saint or donor. The sleeve is detailed with embroidery in yellow stain. White, patterned drapery such as this is common from the late 14th century and throughout the 15th century. The

pattern is often represented by isolated, repeated motifs powdered across the garment, drawn in thin outline and highlighted with yellow stain, for example late 14th century figures in the west window of All Saints, Pavement, York, and early 15th century figures in sIV of St. Michael, Spurriergate, York (RCHMY 1981, pl. 48; pl. 62). On the Orchard Street fragment, the tight sleeve reaching down over the wrist suggests a late-14th to mid-15th century date.

78 Transparent white, with one grozed edge. Painted in reserve with locks of hair detailed with trace lines and smear shading to give depth. Late 14th century. (Cat. 36)

*79 Transparent thin white, probably painted to represent hair. 14th century. (Cat. 37)

80 Opaque. Probably a jewelled border design. 13th/14th century. (Cat. 40)

81 Transparent white with some fine grozing (4 fragments). Painted in thin traceline with a hand emerging from a patterned sleeve cuff and holding a book. Cuff decoration and book highlighted with yellow stain. Late 14th–15th century. (Cat. 38)

3. *Architecture*

Three sets of architectural crocket are represented, attached to partial pinnacles, in fragments from context 87.127. Illustrated fragments are on a deep pot metal yellow [82], and on a yellow stained ground [83]. As the lines defining the pinnacles on these fragments come close to converging, the crockets must come from close to the finial. The size of these examples might indicate that the pinnacle came from buttresses or side shafts rather than central canopy gables. The crockets are of foliate form, akin to Knowles' type "c" (1936, 54, fig. 7c), but without fine trace lines defining detail within the crocket. Similar crockets of varying sizes can be seen in Durham Cathedral, for example sXIII, St. Leonard panel, c. 1340–50.

82 Translucent, deep amber pot metal, consistently thin with fine grozing (4 fragments). Painted with architectural pinnacles and foliate crockets in

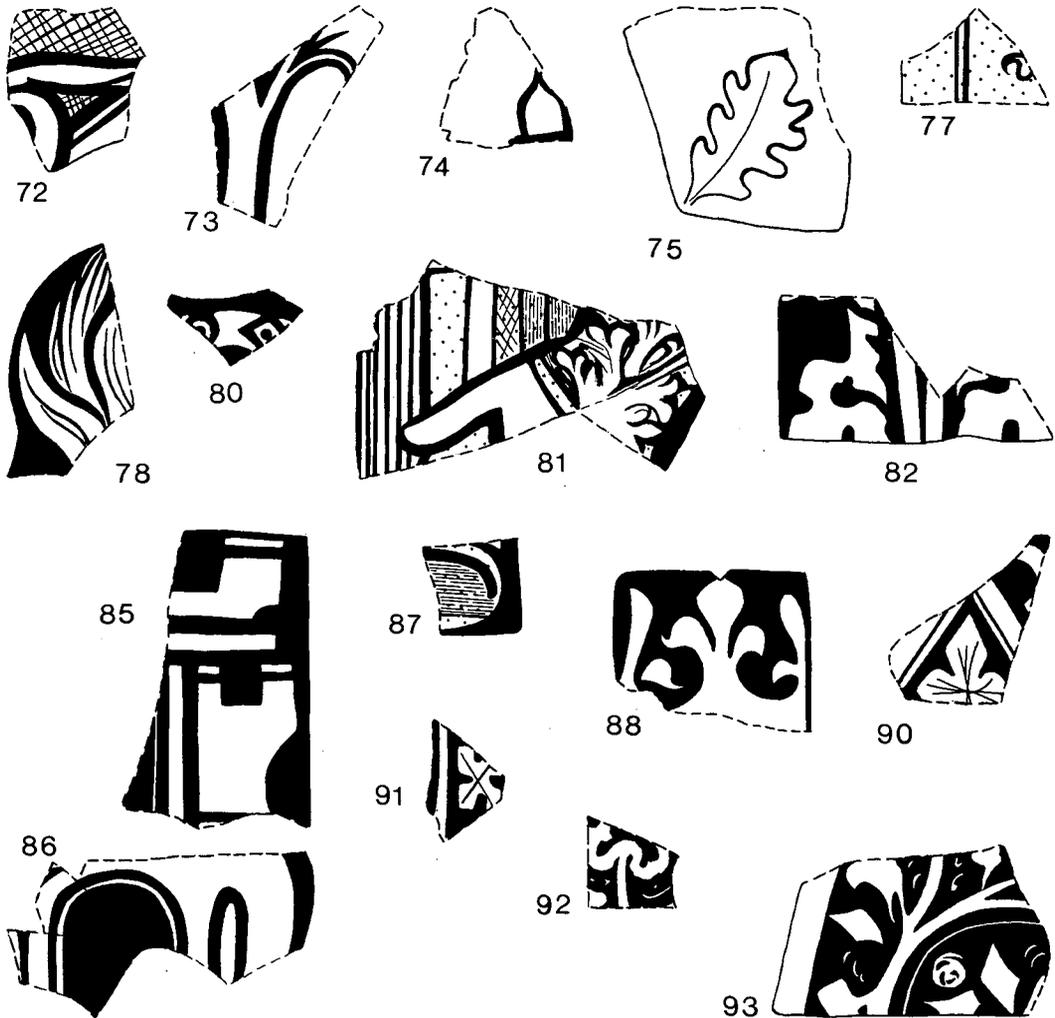


Fig. 14 Town Wall, Orchard Street: painted window glass.

reserve. Probably second to third quarter 14th century. G/87.127. (Cat. 33 and *34)

*83 Transparent fine white (2 fragments), each with a length of fine grozing. Painted with an architectural pinnacle and foliate crockets in reserve on yellow stain, and one with smear shading. Probably second to third quarter 14th century. G/87.127. (Cat. 35)

4. Borders

Another architectural feature, occurring as a repeated border motif rather than part of a larger design, is a stylized castle with crenellated side turrets and a central tower [84–86]. There is a comparable border in the chancel of St. Mary the Virgin, Ponteland, dating to c. 1325–40 (sII a, b; sIII a; Evetts 1942, Pl. VII fig. 4; French and O'Connor 1987,

22). Such borders are common, usually alternating with covered cups or chalices as at Ponteland, St. Denys, Walmgate or the west window of York Minster nave (French and O'Connor 1987, Pl. 20. vi). The Orchard Street design is closer to the Ponteland variation, but has an open archway instead of a central portcullis. One piece [86] has been shaped to fit the curve at the head of a light or in the tracery. Another border design [87] features a crown, some attempt having been made at perspective by showing the front of the crown higher than the back, and by using light smear-shading to give depth. Tripartite crowns appear in the borders of the west windows at York Minster (French and O'Connor 1987, Pl. 4), and crowns with almost identical fleur-de-lys occur in the church of St. Andrew, Bothal.

A geometric border is represented by three fragments [89–90]. This motif occurs at Durham Cathedral (GwI 3a; Haselock and O'Connor 1980, 121), at St. Mary, Ponteland and Bothal, dated to the middle, or second quarter of the 14th century.

The quatrefoil design with saltire cross [91] could have come from the apex of a larger geometric lozenge border of the form described above, but the small linear fillet of plain glass above suggests that the design may have been repeated as a linear border. Similar designs, without the cross saltire, appear at St. Denys, Walmgate, York (Gee 1969, pl. xvi) and Bothal.

84* Semi-translucent white with one grozed edge. Painted with design in reserve from a matt wash with trace line detail. Castle border design. 14th century. G/87.127. (Cat. 28)

85 Two fragments of almost opaque white, with two edges grozed at right angles. Painted with architectural design in reserve with trace line details. Castle border design. 14th century. G/87.127. (Cat. 29)

86 Three fragments of semi-translucent white with one curved grozed edge. Painted with design in reserve from a matt wash with trace line and scratched detail, showing the lower part of a central archway flanked by round-headed lights. Castle border design. 14th century. G/87.127. (Cat. 30)

87 Semi-transparent white with two edges grozed at right angles. Painted decoration shows the lower right hand corner of a stylized crown, painted in reserve and trace line detail on yellow stain with smear shading. 14th century. G/87.127. (Cat. 25)

88 Opaque, with three grozed and one broken edge. Painted with fleur-de-lys. G/87.127, Ph.3.1. 14th century. (Cat. 27)

89* Transparent white, painted with design in reserve on a dilute matt ground. Probably 14th century. G/87.127. (Cat. 22)

90 Transparent white, consistently thin, painted in reserve with trace line (2 fragments). Probably 14th century. G/87.127. (Cat. 23)

91 Transparent white, painted in reserve, with tapered saltire cross. 14th century. G/87.127. (Cat. 24)

5. *Rinceaux/Diapers*

One small fragment on green pot metal is most probably from a kidney rinceau background of the first half–mid-14th century [92]. It appears at St. Mary the Virgin, Morpeth, dated to the first half of the 14th century [Evetts 1942, 98, Pl. IV figs. 1 and 2). A second type appears to be more like a conventional ivy leaf rinceau [93], with one lozenge in reserve, but other leaves issuing from the main stem.

92 Translucent, light olive green pot metal. Painted with an oxbow design in reserve on a matt wash with details scratched out. 14th century. G/87.127 (Cat. 44)

93 Opaque, with one cut edge and one grozed edge. Design picked out of a matt wash background. 14th century. G/87.118, Ph.3.1

Plain white glazier's side strips

Plain strips were sited next to the stonework of the window and could be taken out when a panel was replaced. Only one complete plain white curved strip was found [94].

94* Complete pane of translucent white with green tint. Grozed to a curve. G/87.127. (Cat. 32)

Conclusion

The origin of the Ph.3.1 group of Orchard Street glass is unclear. Such a concentration of fragments first suggested destruction deposits, such as those associated with the Dissolution. These tend to be characterized by fragments with grozed edges and from peripheral zones of the window, for example background diaper and border patterns, or fields of grisaille and plain side strips. These are the details that might be expected to have remained had the central parts of the windows, the figures and canopies, been smashed *in situ* during an iconoclastic campaign, or salvaged for reuse or sale. The predominance of border patterns in the painted glass from Orchard Street certainly implies destruction debris, but this is balanced by the number of fire-rounded edges suggesting installation waste. Since none of the pottery associated with this group of deposits need be later than the 15th century, it may be safer to suggest that this is refenestration rather than Dissolution waste. Due to corrosion, lead comes need replacement every 100–150 years, and routine repairs would have been undertaken right up to the Suppression in 1539. The quantity of unpainted white glass and the presence of a few pieces of 13th century grisaille are consistent with repair and releading.

CLAY TOBACCO PIPES

John Nolan

An unremarkable collection of 101 fragments was recovered from both sides of the wall, and identified using the Tyneside type series (Edwards 1987 and 1988). The majority (93 frags) occurred in Ph.6, of which 74% came from the west or outer side of the wall and reflect the extensive late 18th–early 19th century development of the former King's Dykes. Two late 17th–early 18th century stem stamps of John Thompson and Edward Craggs occurred in this group.

The earliest pipes were two examples of ?London type 23 (see Edwards, 1987), found on the east side of the wall during machine

clearance of the Ph.4 midden deposit in the vicinity of the mine crater. These were probably deposited during the Civil War or subsequent reconstruction. One of the bowls [95] has the stamp S on a kite-shaped foot.

A bowl and stem (Tyneside type 3a) was found in 1991 during consolidation of the wall by workmen clearing soil and ash deposits from below the modern wall-walk. The exact findspot was not recorded, but seems to have been north of the site of the mine breach. If so, this is a further indication of the wall having undergone substantial reconstruction in the post-Civil War period.

95 Bowl, ?London type 23. [W/88.003F] Ph.5

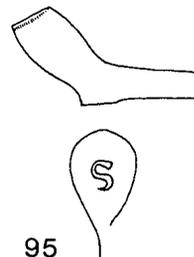


Fig. 15 Pipe (♁), stamp (♂)

CERAMIC BUILDING MATERIAL

John Nolan

Despite the restricted areas of excavation a considerable quantity of floortile, roof tile and brick was recovered. Each type will be considered briefly. A full catalogue for each type, with relevant metrical and fabric descriptions forms part of the site archive.

FLOORTILE (144 fragments). Examples occurred in all phases except 2 and 3.2. The largest groups were 87.109 (16 frags), 87.119 (14 frags) and 88.050 (12 frags), all of which could belong to the Dissolution. Most were small pieces with worn surfaces. A range of thicknesses was recorded, most being in the range of between 23 and 27 mm, the thickest being 43 mm. All tiles were undecorated and

seemed to have been square. With one possible exception all were, or had once been, glazed either green or yellow (white slipped), with the former predominating.

ROOFTILE (54 frags). These fell into four distinct fabric groups:

Group 1—Medieval; gritty with orange/buff interior margin, reduced core and exterior margin, occasional inclusions of hard unmixed clay. This fabric was reminiscent of local pottery types RG2–3 (first half 13th–early 14th century. Outer surfaces (wiped) were splashed or evenly covered with dark green glaze. Forms noted were plaintile and ridgetile. 25 fragments, the largest concentrations being in Ph.3.1 contexts 87.123(10) and 88.050(6), with none occurring in later phases.

Group 2—Medieval; similar to above but noticeably less gritty and the clay better mixed. Unglazed. Plaintile only. 3 fragments in Ph.3.1 contexts 88.063, 071 and 073.

Group 3—Medieval; fabric very similar to Group 2 but much thicker and predominantly occurring as curved fragments suggestive of ridgetile or even pantile. 11 fragments. This was present in Ph.1–3.1, while Ph.5 produced two probably residual fragments.

Group 4—Post medieval; dark red–brown hard-fired slightly sandy fabric, evenly mixed and free from inclusions. Outer surfaces smooth wiped, edges clean cut. All fragments were pantiles. Most came from Ph.6 (11 fragments), but it also occurred in Ph.2(1), Ph.3.1(2), and Ph.4(4) where it was clearly intrusive.

BRICK (338 fragments). This was catalogued using the type series established for material from the Castle and most recently set out in the Bastion report (Harbottle and Ellison 1983, 196–7), but the degree of fragmentation was such that much of the material could not be firmly identified. Types 1, 2, 3/4/5/7, 9/10, 13/16 were present from Ph.1 onward, with heavy concentrations in Ph.3.1 contexts 88.050, 063 and 073.

STONE OBJECTS

John Nolan

Despite the close proximity of the Friary buildings no worked stone was found. Fragments of sandstone roofing flags were common in Ph.3.1. Small, roughly-shaped sandstone discs (4 from Ph.3.1 and two from Ph.5) may have been used as counters or pot-lids. These ranged in diameter from c. 44 mm–c. 80 mm.

Perhaps the most interesting stone finds were the flint fragments (63 in total) which appeared in all phases but were most frequent in medieval contexts. These were mostly small, cleanly struck flakes or broken nodules, but included two worked blade fragments from Ph.1, and two nodules which had been used as hammerstones from Ph.3.1. Several large nodules occurred in the foundation trench of the town wall (build 7). Flint does not occur naturally in the area and the unworked material here probably derives from ballast. However its presence at Orchard Street in such quantity and clean condition is remarkable.

COINS

A damaged silver penny of Edward I or II was found in a Ph.2 deposit (87.136), and two worn long cross pennies from ?15th century contexts (88.062 and 88.050 Ph.3.1.).

METALWORK

Janet Vaughan

Copper Alloy

Most of the 24 fragments of copper alloy were unidentifiable scraps. The only obviously functional objects are illustrated or described below.

96* Small bar (32 mm by 4.5 mm) with triangular cross section and a rivet hole at each end. (Ph.1, B/87.063)

97 ?scraper. (Ph.3.1, J?/88.074)

98* Pin with a double spiral twist head, shank

42 mm long (Ph.3.1, 87.127). A headless pin 47.5 mm long came from Ph.3.1, G:87.130, and one with a spherical head, probably wound wire, from Ph.4, the midden deposit 87.074.

99* Lace tag (34 mm long). (Ph. 88.033)

100 ?half of a buckle or strap-end fastening. One of the same type was found at the Whitefriars, Coventry (Woodfield, 1981, fig. 5, no. 29) in a possible 16th century context. (Ph.3.1, G/87.118)

101 Single loop buckle (cast) with no seating for a pin or any sign of wear indicating there ever was one. The file marks on the flat surfaces are still sharp. Paralleled closely at Battle Abbey (Geddes, 1985, fig. 49, no. 17) in a ?Dissolution context. (Ph.3.1, G/87.127). Part of another buckle or fastening came from an associated context.

102 ?stud (F.no. 8: G/87.074)

103 ?skillet leg. Possibly paralleled at Threave Castle (Good and Tabraham, 1981, p. 107, no. 43) (Recovered during watching brief 88.003)

IRON (120 pieces). Most of these (81) were nails. Only five (from medieval contexts) had distinguishable heads: 3 fairly large square and one round head, and a dome-headed nail. There was also a spike, about 235 mm long. The only other identifiable objects were a key and two arrowheads.

104* Key, identified from X-ray apparently with kidney shaped bow (broken) of 15th century type. Possibly the bow shape is a result of damage, as this comes from a pre-wall context (Ph.1, 87.137).

105* Arrowhead, identified from X-ray, with short barbs in relation to the tang. Possibly early military example, see Type 13 London Museum Medieval Catalogue. (Ph.3.1, 88.096)

106 Arrowhead, complete. Possibly Type 16 London Museum Medieval Catalogue. A later barbed type for hunting, not heavy enough for armour piercing. Residual. (Ph.6, B/87.003)

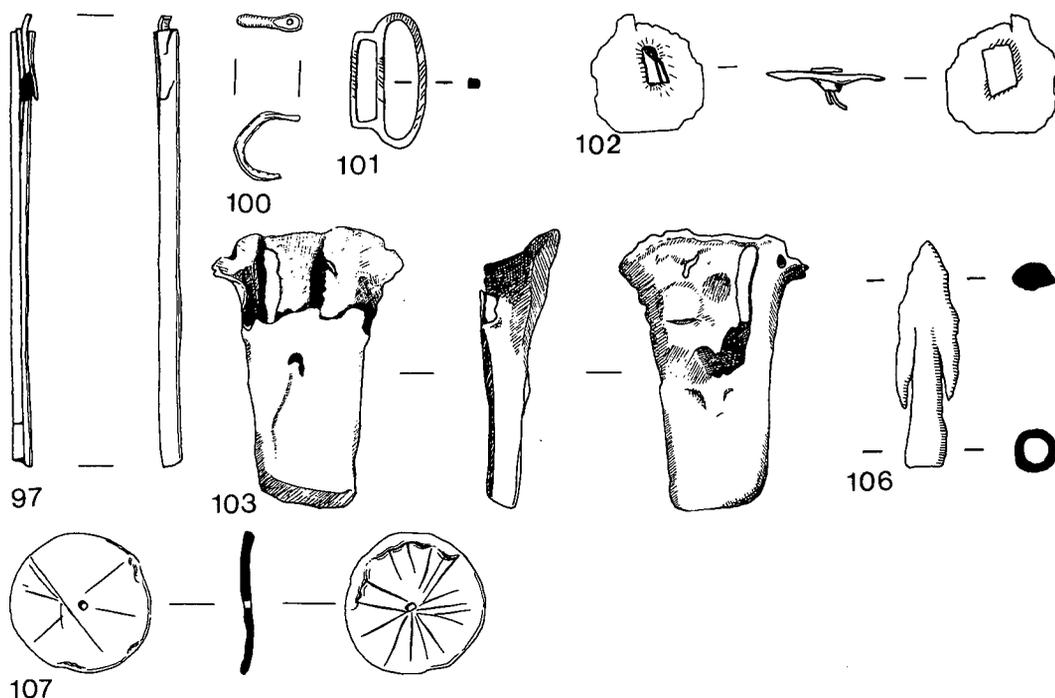


Fig. 16 Town Wall, Orchard Street: metalwork (1:2).

LEAD (14 fragments). There were 6 came and a few fragments of sheet and casting waste.

107 Disc with a hole pierced slightly off-centre and the surface scored. (Ph.3.1, G/87.127)

MISCELLANEOUS

108* Bone comb with fine and coarse teeth. (Ph.4, G/87.74)

ANIMAL BONE

Keith Dobney and Deborah Jaques

A small assemblage of animal bone—2409 fragments weighing 30.785 kg—was recovered from the excavations. Because of the small quantities of material in Ph.1 and 3.2, the bone from these phases was amalgamated with that in Ph.2 and 3.1 respectively. The Ph.5 bone was analysed separately, though it probably derived from redeposited Ph.4 deposits. The small size of the assemblage limited the conclusions which could be drawn, and it is chiefly of interest in the corroborative or contrasting evidence it offers for trends noted in larger assemblages from other excavations in Newcastle. Because of the limitations of space, the detailed analysis forms part of the site archive, and a summary report is given here.

Recovery and Preservation

All the material was recovered by hand-picking, resulting in an inherent bias towards the larger, more conspicuous elements. The presence of only six large fish bones, and the absence of smaller mammalian elements in the assemblage, is probably a reflection of this. This, as much as the small size of the assemblage, limits the conclusions which can be drawn regarding frequency of species and elements, and their importance in the local economy.

Most of the bone was well preserved and appeared to have suffered little serious fragmentation. However a substantial amount of the assemblage had suffered damage almost

certainly due to dog gnawing, indicating that the material had been exposed for a time prior to burial.

Methodology

The bone was assigned to particular levels of identification, i.e. either to species, large or small artiodactyle or unidentifiable. Bones identified to species were recorded in the manner described by Dobney and Reilly (1987) using identifiable zones present on each element. Thus minimum number of individual counts for each species are based on the most frequent occurrence of one non-repeatable zone. Other methods of quantification, i.e. total number of fragments and epiphyses only counts, follow procedures outlined in Grant (1975). Epiphyseal fusion data uses the standards set out by Silver (1969).

Species and Species Frequency (Table 3)

Cattle and caprovid (sheep/goat) remains form the bulk of the assemblage. Of the 561 fragments identified as caprovid 124 (22.1%) could be positively identified as sheep, and none positively as goat. The proportion of identifiable sheep remains is identical to that at Closegate (Davis forthcoming), again suggesting that they were the most commonly used caprine species in both medieval and post-medieval Newcastle. Wild mammalian fauna included cervid—almost certainly fallow deer, hare (probably brown), and rabbit.

Only 45 bird fragments appeared in the assemblage, most deriving from Ph.3.1 deposits. Recovery techniques have led to a bias in favour of larger species, most common being domestic fowl, followed by domestic goose. Game included wood pigeon and possibly wild mallard. Knife marks were present on two fowl and one goose fragment. A smaller fowl tarsometatarsus from Ph.3.1 probably belongs to a bantam. Both domestic fowl and geese remains fall well within the size range of birds recovered from Closegate (Davis, forthcoming) and Flaxengate (O'Connor, 1982). Hens are present in Ph.3.1, 4 and 5. There are very few immature fowl, i.e. birds aged less than 5–6 months, suggesting a dietary preference for

Table 3 Species and fragment counts, numbers in brackets represent positively identified sheep remains within the caprovid total.

SPECIES		PHASE			
		1/2	3	4	5
MAMMAL					
Cattle	(<i>Bos domestic</i>)	74	328	86	74
Caprovid	(<i>Capra/Ovis domestic</i>)	46	292	145	77
Sheep		(16)	(62)	(23)	(19)
Pig	(<i>Sus domestic</i>)	4	50	—	3
Horse	(<i>Equus sp. domestic</i>)	2	11	—	—
Fallow Deer	(<i>Dama dama</i>)	—	2	1	1
Dog	(<i>Canis sp. domestic</i>)	2	10	—	—
Cat	(<i>Felis sp. domestic</i>)	4	11	1?	—
Hare	(<i>Lepus cf. europaeus</i>)	—	1	—	—
Rabbit	(<i>Oryctolagus cuniculus</i>)	1	2	—	—
Total		133	707	233	155
BIRD					
Domestic Fowl	(<i>Gallus gallus</i>)	2	17	6	5
Goose	(<i>Anser anser</i>)	1	5	4	—
Mallard	(<i>Anas platyrhynchos</i>)	—	1	—	—
Raven	(<i>Corvus corax</i>)	—	—	—	1
Magpie/Jackdaw	(<i>Pica pica/C. monedula</i>)	1	—	—	—
Woodpigeon	(<i>Columba palumbus</i>)	—	—	1	—
Unidentified		—	1	—	—
Total		4	24	11	6
FISH					
Ling	(<i>Molva c.f. molva</i>)	—	1?	—	1
Cod	(<i>Gadus morhua</i>)	—	—	1?	—
Cod family	(<i>Gadidae</i>)	—	1	2	—
UNIDENTIFIED					
Large Artiodactyle	Rib	28	115	26	28
	Vertebra	18	134	30	9
	Shaft	10	54	9	13
	Cranium	—	1	11	—
	Scapula	4	6	—	6
	Sternum	—	8	2	—
Medium Artiodactyle	Rib	8	47	54	27
	Vertebra	6	66	44	17
	Shaft	5	27	8	15
	Cranium	5	13	—	—
	Scapula	—	1	—	2
	Sternum	—	—	1	—
Unidentifiable		31	121	51	56
TOTAL		115	593	236	163

mature birds—or perhaps eggs! Again though recovery methods may have excluded immature fragments.

The small size and inherent bias in this

assemblage made it impossible to assess realistically the relative frequency and thus importance of the major domesticates. Total fragment and epiphyses only counts suggest a gradual

decline in the importance of cattle against a growth in sheep between the 14th and 17th centuries. A similar pattern is suggested by other assemblages in Newcastle and elsewhere, particularly between the 13th and 15th centuries (Rackham, 1981, 1983, 1987; Gidney 1989; Davis, forthcoming; O'Connor, 1982 and 1990). Minimum number counts however suggest a dominance of sheep throughout this period, with a significant increase in cattle usage in Ph.5. Some pig remains occur in all but Ph.4. Small numbers of equid fragments occur in Ph.1-3 and are wholly absent in Ph.4-5. This again follows the pattern of other Newcastle faunal assemblages.

The few fish bones recovered all belonged to large Gadid species. One fragment is possibly cod, and two are ling. The small number and likely bias in the recovery techniques precludes further comment.

Frequency of Skeletal Elements

One of the most striking features of the cattle remains is the almost total absence of horn-core, cranial and jaw fragments in all phases. There are also few loose teeth, the majority being in Ph.1-3. The most frequent cattle elements appear to be major meat bearing bones (humerus, femur, scapula, tibia and pelvis). Second cervical vertebrae (atlas), calcaneum, astragalus, metacarpal, metatarsal fragments and phalanges are also relatively common. The frequency of sheep elements resembles that of the cattle except that cranial fragments, particularly horn-core, maxilla and mandibles, are more common. As with the cattle the major meat bearing bones are well represented i.e. scapula, distal humerus, proximal radius, pelvis and distal tibia. Again metacarpal, metatarsal, calcaneum, astragalus fragments and proximal phalanges are fairly well represented.

The Cattle and sheep elements suggest that most of the material, particularly in Ph.3.1/2, derives from domestic waste rather than primary butchery, and that prime joints were evidently being consumed both by the Friars and by the households contributing to the Ph.4

midden. This is a marked contrast to the evidence from Closegate where meat-bearing bones were lacking. The scarcity of cranial fragments, particularly with the cattle, suggests the use of prepared carcasses with the head already removed.

Butchery and Bone Use

Evidence for butchery was found on the domestic livestock remains in all phases. The range of marks indicates that both cattle and sheep carcasses were reduced to more manageable joints using cleavers and sharp knives. Most of the chop marks occurred on cattle remains, principally at the articular ends of the long bones, scapulae, pelvis and vertebrae. Knife marks were more frequent on the sheep bones and affected both the shafts of major long bones as well as the articular ends. This could be a result of secondary butchery or consumption. A number of sheep and cattle vertebrae in all phases had been cleaved in two. The greatest concentration of these were sheep in Ph.4, where nearly half the fragments belonged to the right half of the carcass.

Interestingly, evidence of butchery was found on a horse metatarsal and humerus fragment, both from Ph.3.1. A fragment of butchered horse pelvis from a 13th/14th century deposit at Closegate had been tentatively identified as evidence for glue production. Another unexpected discovery was the presence of small knife marks on several cat bones [Ph.3.1/87.48, 123]. A complete femur showed a series of regular short incisions on the medial and lateral surfaces of the distal end of the shaft, and similar marks in a similar position were noted on a humerus fragment. These marks have been interpreted as the result of skinning, presumably to obtain pelts.

Some material from Ph.4 and particular group in Ph.5 [88.26, 28] had apparently been subjected to prolonged heat exposure, possibly by boiling. Seven cattle metapodial fragments showing this characteristic had had areas of bone previously removed by sawing, suggesting that they were workshop waste possibly boiled subsequently for the production of glue.

Table 4a Detailed fusion data showing numbers of fused (Fu) and unfused (Un) cattle epiphyses for each major age category. Percentage of fused fragments is shown in column (%F).

	Phase 1 + 2			Phase 3			Phase 4			Phase 5		
	Un	Fu	%F	Un	Fu	%F	Un	Fu	%F	Un	Fu	%F
10 months	—	2	100	1	7	88	—	1	100	—	—	0
18 months	—	10	100	2	24	92	3	7	70	1	3	75
2–2½ years	—	2	100	10	18	64	3	2	40	1	4	80
3½ years	1	3	75	4	9	69	1	2	67	0	3	100
3½–4 years	4	4	50	14	18	56	3	4	57	2	5	71

Table 4b As table 4a for caprovid fragments.

	Phase 1 + 2			Phase 3			Phase 4			Phase 5		
	Un	Fu	%F	Un	Fu	%F	Un	Fu	%F	Un	Fu	%F
10 months	—	15	100	8	59	88	3	30	91	1	15	94
1½–2 years	—	4	100	4	33	89	4	6	60	3	9	75
2½–3 years	3	1	25	11	19	63	11	11	50	2	4	67
3–3½ years	1	3	75	12	6	33	5	4	44	3	—	0

Age at Death (Table 4)

Again the small size and recovery procedures limit the conclusions which can be drawn, and almost all the information derives from epiphyseal fusion data. In all phases it appears that the majority of the cattle were killed after reaching full maturity. In Ph.3.1/2, the largest group of bones, at least 64% of the fragments belonged to animals over 3½ years old. The remainder were from fully mature beasts i.e. over 3½–4 years old. Less than 8% of the bone fragments came from animals aged under 18 months. A small percentage of lambs were present in Ph.3, and it would seem that 10–15% were killed in their second year, up to 40% in their third and over 60% in their third(?). These proportions are similar to those from 16th–17th century deposits at Blackfriars (Rackham, 1987). In Ph.4 deposits the number of lambs killed in their second year is much higher (perhaps as much as 40%), as is the proportion of mature animals i.e. over 3–3½ years slaughtered. There is a suggestion here of preference for prime mutton to lamb during the Friary occupation.

Biometry (Table 5)

No definite conclusions on cattle size could be drawn from the assemblage. The sheep remains all seem to derive from relatively gracile animals with little variation in size from the 14th to mid-17th centuries. There was insufficient material from the later 17th and 18th centuries for any size increase, such as has been noted for this period elsewhere, to be apparent (Armitage 1984; Stallibrass 1988).

A horse radius from Ph.3.1 indicated an animal 14.1 hands high.

Pathology

The only example was a cattle distal metacarpal fragment [Ph.5/88.26, 28] showing signs of advanced eburnation of the distal articular surface resulting from a rupture of the joint cartilage. The fragment is from a mature beast and may indicate its use as a draught animal.

The authors wish to thank the following for their input into this report: Dr. Andrew Jones for identification of the fish bones, Kevin Reilly for identification and information on the bird bones and Dr. Simon Davis for his advice and comments.

Table 5 Mean values of selected caprovid and cattle measurements—after von den Driesch (1976)

CATTLE	PHASE	RANGE	MEAN	S.D.	NO
Astragalus GLI	3	56.2–63.25	59.5	3.5	3
	4	64.0–68.55	66.3	3.2	2
Metacarpal Bd	3	52.3–63.0	55.7	3.1	9
Phalanx prima GLpe	1+2	52.3–60.8	55.4	4.2	5
	3	49.5–58.3	53.6	3.4	7
	4	58.7	—	—	1
	5	53.8	—	—	1
CAPROVID					
Humerus Bd	1+2	28.6–32.9	30.5	1.8	6
	3	26.9–32.6	29.5	2.2	13
	4	28.3–31.5	30.4	1.2	8
	5	29.5–32.5	30.5	1.4	4
Radius Bp	1	30.0–32.8	31.4	1.9	2
	3	27.8–35.1	31.1	2.5	10
	4	28.1–33.9	31.7	2.2	8
Astragalus GLI	3	26.8–32.0	28.2	1.6	11
	4+5	25.8–30.5	28.1	1.9	5
Tibia Bd	1+2	25.25	—	—	1
	3	24.0–27.7	25.1	1.5	9
	4	24.0–29.0	26.6	2.5	3
	5	23.9–25.0	24.5	0.8	2

REPORT 2: THE TOWN WALL AND PLUMMER TOWER IN CROFT STREET

In 1989 an application was made to develop the derelict ground east of the Plummer Tower, recently cleared of 19th century buildings, and to refurbish the tower itself. Construction had already started by the time the necessary consents for excavation had been obtained and this, as much as limited finance, restricted the scope of the investigation. At the same time, separate redevelopment proposals for the detached northern part of Croft Street required that the precise line of the destroyed town wall be established and the extent of the surviving remains assessed. In this report the history and archaeology of both areas will be considered together. The Plummer Tower and associated structures form a separate section.

The Site (fig. 17)

Very little now remains of the eastern part of the town wall circuit. At the eastern reentrant a section of wall surviving east of the ruined Corner Tower has been recently recorded (Nolan *et al.* 1989, 72–4); another fragment is in Croft Street, where a short length of wall survives attached to the southern side of the much altered Plummer Tower.

The Plummer Tower, once called the Carliol Croft Tower, is a mediæval horseshoe-shaped tower extensively remodelled and given two floors and a new western façade when converted into a meeting house by the Company of Masons in the mid-18th century. Its walls now stand some 7 m high above their foundation. Adjoining the tower on the south is a short stretch of town wall c. 8 m long, and 5.40 m high to the top of the parapet.

TOWN WALL, CROFT STREET
SITE LOCATION AND AREAS OF EXCAVATION

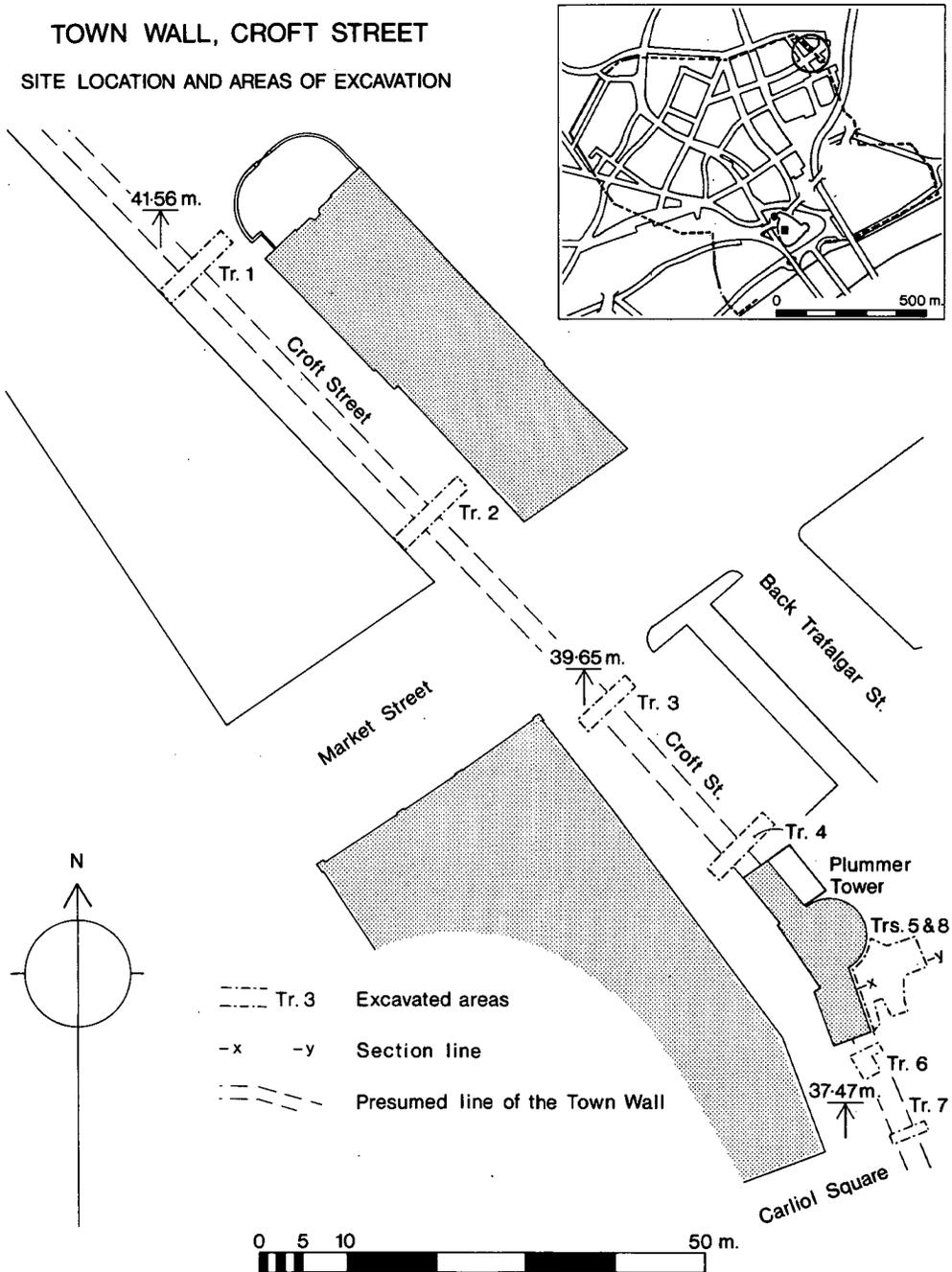


Fig. 17 Town Wall, Croft Street: site location and areas of excavation.

The site of the town wall to the north and south is now under Croft Street itself. From the tower, the wall formerly ran *c.* 176 yds (160·93 m) northwards to join the Carliol (Weaver's) Tower, where the wall line turned a right angle westward. South of the Plummer Tower the wall ran for *c.* 187 yds (171 m) to the Austin Tower (Brand 1789, 16–17).

The ground east of the tower and wall was laid out in fields and sloped down to a steep-sided dene containing the Pandon Burn. This had been infilled and built upon by the mid-19th century. West of the town wall the enclosed area between the Carliol (Weaver's) Tower and the Austin Tower, separated from the gardens of houses in Pilgrim Street by the Erick Burn, was known as the Carliol Croft at least by the 16th century. Previously this may have formed part of the town fields which survived outside the wall. The derivation of the name is uncertain, but at least as early as the 15th century the Carliol family owned property in Pilgrim Street with which the Croft appears to have been associated (*A.A.* 2, 15, 184, no. 136).

Virtually nothing is known from documentary sources about the use of the Croft or the state of the Tower until the mid-18th century. The Tower became an artillery position at the time of the Civil War (see below, "The Bastion"), and in the second half of the 17th century was apparently used as the meeting hall of the Cutler's Company (Mackenzie 1827, 113–14). Although this period of occupancy is apparently now undocumented (Brand 1789, 2, 342), the building was known as the Cutler's Tower until at least 1749, when it was let to the Company of Masons who considerably rebuilt the structure.

By the end of the 18th century Carliol Croft was the largest open space remaining within the town walls, providing "a very agreeable Walk, generally frequented in a Summer's Evening by the Gentry of this part of the Town" (Bourne 1736, 81). Dramatic changes took place after September 1810 when the trustees of the new Shields Road turnpike, the construction of which had been under consideration since 1796 (NCL.942.82 95254 Port.15/

3), were given authority to demolish the town wall between Pilgrim Street Gate and Pandon Gate and use the materials for a bridge across the Pandon Dene (TWAD 589/18, f. 505). In 1811 the town wall was taken down leaving only two short stretches immediately adjoining the north and south sides of the tower. These presumably survived because they formed part of the Company of Masons' premises; no internal access between the floors of the tower was provided in the Masons' conversion, only a forestair(s) leading to the wall-walk and thence to the first floor side doors. Although the town wall itself was removed, the Trustees were required to perpetuate its line as a boundary for the Corporation's property by a new wall 8 feet high. Part of this survives, built into the later house on the north side of the tower. Removal of the town wall and construction of the bridge and "New Road" after *c.* 1813 (TWAD LB 13, 26/21/50) opened up this area to development. Building upon the northern part of the Carliol Croft was underway by 1824, while the south end was being developed by the Corporation with a new Prison and House of Correction. Croft Street had appeared by 1827; the total absence of man-made deposits or features in Tr.1–3 strongly suggests that ground levels were reduced at this time. Possibly this was compounded by the activities of builders such as Richard Grainger and William Greaves, who were making bricks from clay dug in the area of Croft Street and Carliol Street in 1824 (TWAD 589/19, f. 437). The area was almost completely built up by 1830, and remained thus with only minor additions until clearance for redevelopment in the mid-1980s.

Excavation

Trenches 1–4 and 6–7 were sited across the presumed line of the town wall as recorded by the Ordnance Survey (1st. ed. O.S. 10.56' to 1 mile (1:500) sheet XCVII.7.5, 1860). In Tr.1–3 (machined) a level surface of boulder clay was encountered at a depth of only 0·42–0·49 m below highway surface. These trenches were archaeologically sterile, probably a consequence of the early 19th century development

described above. In Tr.4 too the town wall had been completely removed but part of a robber trench survived to show its alignment. In Tr.6 and 7 destruction was less thorough, the remains of rubble foundations marking the southward course of the wall. Pottery from the robber trench and directly above the remains of the foundations accorded with the documentary evidence for early 19th century destruction.

Trenches 5 and 8 were dug to examine the foundations of the extant wall and tower, and particularly the relationship between the two structures. Trench 5 was extended as far east of the tower as the adjacent development permitted in the hope of locating the inner lip of the medieval wall ditch, apparently still visible as late as 1807 (Akenhead 1807, 3). Silty deposits were noted to the east and south-east in the area of redevelopment and appeared to have a western edge curving gently S.W. towards the line of the town wall. A few small medieval sherds were recovered from the silt, but the evidence was too fragmentary to assume that this was primary wall ditch fill. It could have been associated with the Civil War refortification.

The excavation revealed no significant or undisturbed medieval deposits. The results are chiefly of interest in so far as they provide further evidence for separate town wall and tower construction previously noted at Morden Tower and for the unexpected discovery of an undocumented Civil War refortification, or additional fortification, outside a wall tower. The excavation added nothing to what is known of this area before or after construction of the town wall, neither did it provide any further dating evidence for construction of the town wall or the tower than that suggested by documentary sources (Nolan *et al.* 1989, 74).

The Town Wall and Tower

The Wall

Only c. 7.60 m of the town wall survives above ground on the south side of the tower, but this

is enough to show that wall and tower were not of one build. The curtain on the south being separated from the tower by a narrow gap infilled *after* at least the base courses of each structure had been laid. The significance of this will be discussed below.

In its present state the wall stands 4.21 m high above foundation level where it joins the tower, from which the wall walk and parapet fall away to give a height of 4.06 m at the south end. The parapet is uniformly 1.15 m high, capped with sharply ridged sandstone coping similar to that found at Orchard Street, and does not appear to have been altered since at least c. 1904 (NCL acc.3791). There is now no trace of there having ever been any embrasures on this short stretch.

Two phases of construction are plain in the lower courses of the wall itself. The primary build ended 2.10 m south of the tower. Between this section and the tower is an infill section clearly post-dating both the primary wall and the tower. This difference can be traced in the wall stone for at least the first two courses above foundation level. The infill section is unusual. At the Morden Tower (Nolan *et al.* 1989, 55), the tower preceded the adjacent curtain, which was constructed from its foundation as a continuous run to abut the tower walls. The suggestion at Plummer Tower is that the lower courses of the curtain, on the south side at least, preceded the tower, and that a gap was left for its insertion. Above this level the wall coursing runs through with a discontinuity only at the junction of tower and wall, indicating that the curtain was raised to its full height after the tower was built.

The primary phase foundations are c. 0.70 m deep, filling the foundation trench, and consisting of a base course of large rubble on which had been laid smaller, flatter fragments, followed by a single levelling course of roughly squared sandstones. The infill section was simply founded on a jumble of irregular small to medium sandstone rubble. Both sections of wall were founded in a trench cut level into the clay subsoil ignoring a slight rise in the ground northward towards the site of the tower, so that at the junction of the two structures the

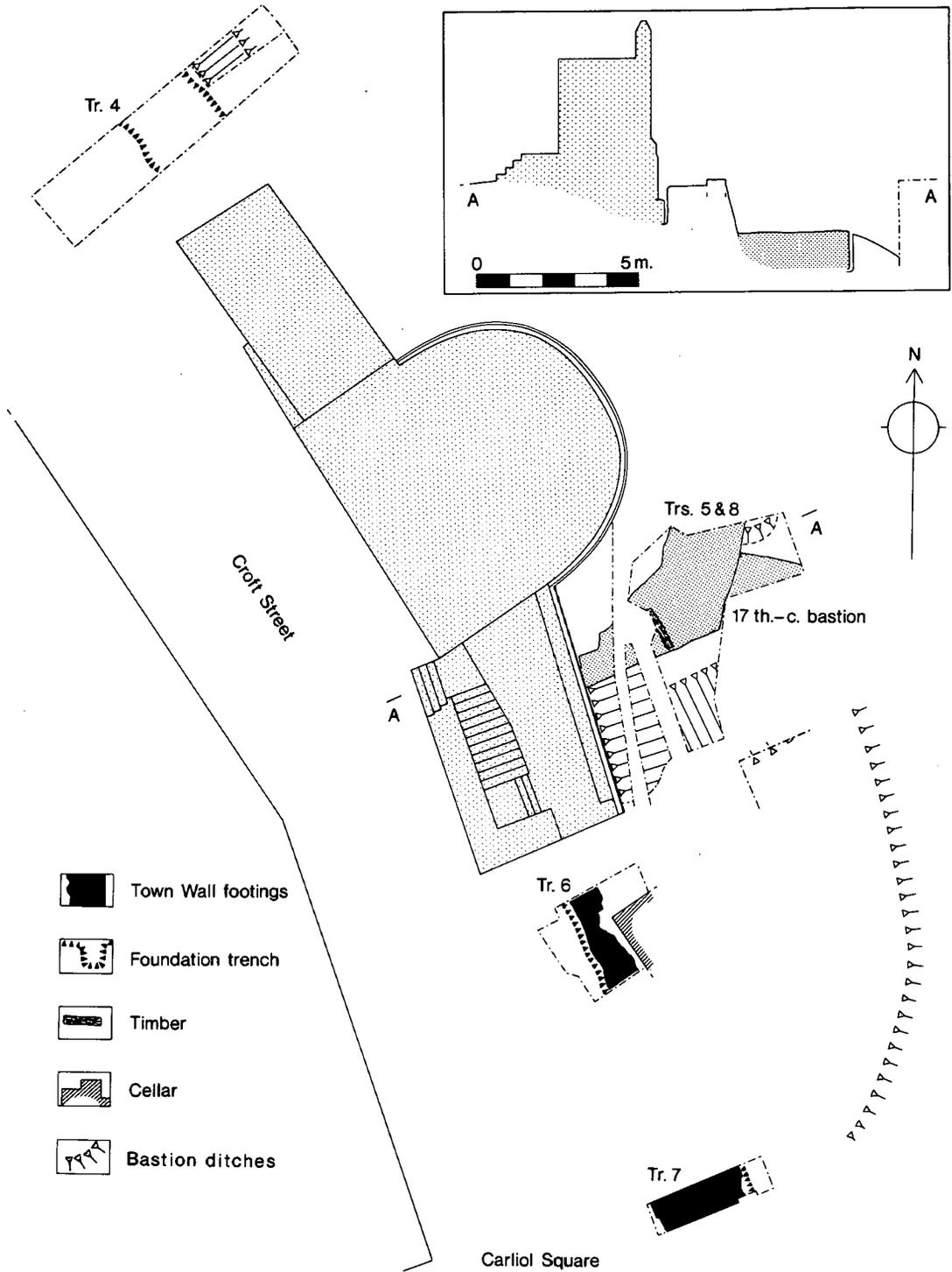


Fig. 18 Town Wall, Croft Street: the Civil War bastion.

first course of wall stones was below medieval ground level. The lowest two courses of wall face stones were a mixture of large rectangular and squared ashlar with pecked faces. The wall face above the double chamfer has been heavily repointed, blurring any other possible constructional differences. There is some localized disturbance related to the insertion of the small window to the mural chamber, but the rest of the wall face could be substantially medieval.

The Tower (fig. 19)

Where excavated, the tower foundations began with a single course of large, angular sandstones 24–28 cm high packed tightly into a foundation trench with medium-small sandstone rubble, roughly coursed, immediately below the lower wall-face course.

The tower builders too ignored the rise of ground, choosing to build up a level foundation platform rather than cutting into the slope. In consequence the tower foundations on the south side rose some 0.30 m higher than those on the wall, and the two chamfer courses, which would otherwise have run through were offset as at the Morden Tower.

It is now very difficult to reconstruct the appearance of the medieval tower, radical alterations having completely removed all original internal features. Probably it followed the form of those on the West Walls in having a single vaulted chamber at ground floor level with a flagged and parapeted roof above. Earlier writers have tended towards unsupported speculation: in 1852 G. B. Richardson classed the Plummer Tower as one of six wall towers having “two obtusely arched apartments with bold ribs”, and with either an internal spiral stair or an external stair to the wall walk (Sheriton Holmes 1895–6, 9). Holmes’ own view (*ibid.*, 18) was that in making their alterations in 1750, the Masons destroyed the original arched top. Richardson’s statement cannot have been based upon personal observation. The present arrangement of floors clearly belongs to the 1750 alterations, if not those of the

Cutlers, since internal vaulting would block the Masons’ heavily fenestrated west façade. Understanding the internal arrangements is further complicated by the wall of the drum having been reduced in thickness internally. Surviving drum towers have walls which vary between 2.29 m (Ever)—2.74 m (Heber) in thickness. At Plummer Tower the walls are now 2.18 m thick (apex of drum at ground floor level and 1.20 m thick (first floor), with the sides being thinner still).

An attempt has been made in Fig. 19 to define the extent of surviving medieval masonry, or masonry predating the obviously post-medieval intrusions. This is now only traceable to about the level of the adjoining curtain wall: everything above having been obviously rebuilt or added. The fabric uses three sizes of stone. Above the top chamfer are three courses of large oblong ashlar, and above this four courses of slightly thinner stones. All have been identified as medieval since they are well-coursed, form level bands around the drum, and predate the obvious post-medieval intrusions into the fabric. If this is correct, such differences may simply be due to variations in the supply of building stone. They may, however, indicate that radical rebuilding had taken place before the tower passed into the hands of the Cutlers in the second half of the 17th century. Support for this view is provided by the absence of positively identifiable loopholes, the implications of which are considered below.

No traces of the original parapet or loopholes remain. Sheriton Holmes suggested (1895–6, 18) that the three large blocked windows visible on the drum were enlargements of medieval loopholes. Whilst at first sight their location and spacing echoes that of loopholes in the vaulted ground floors of other wall towers, there are a number of problems with this interpretation. In the surviving wall towers the loopholes are all placed at an angle of 90° to each other, while the blocked windows at Plummer Tower are at a much shallower angle and closer to the apex of the drum. If the single chamber interpretation for Plummer Tower is correct, loopholes in these positions would also

have been sited very high in the wall, the lowest level of window blocking (externally) being 2.4 m above present ground floor level in the tower. By comparison, external openings of loopholes in the other wall towers all finish approximately 1 m above the inner ground floor, or level with the top of the third course above the external chamfer. It may be significant that this is one of the levels at which the style of the tower masonry changes as noted above. Finally, for the blocked windows to have once been accessible loopholes serving a single chamber the interior floor level must have once been much higher, giving a thickness for the tower base of some 2.6 m. This seems an unnecessarily massive plinth of solid masonry. Conversely though, the blocked areas are too low to have once been loopholes serving a second (upper) chamber above a vaulted basement as suggested by Richardson; and would not such a basement be provided with at least one loophole itself? As it is most unlikely that loopholes were never provided, and without precedent on the town wall, it must on balance be suspected that this was indeed a single chambered tower the drum of which has undergone even more substantial post-medieval alteration than is now immediately apparent.

Adjoining the tower on the south and partly hacked out of the thickness of the town wall is a small, irregularly shaped room, with an arched ceiling and lit by a small window cut in the outer face of the town wall. In its present form this is a modern feature and will be described with the post-medieval additions and alterations. Sheriton Holmes (1895–6, 16) thought he could see a blocked doorway in the north wall connecting this chamber with the ground floor of the tower, and likened this to a narrow mural chamber which may have existed at the Sallyport Tower. When the internal render on the south wall of the ground floor of the tower was removed in 1990 a possible area of blocking was visible. This may however be fortuitous as the whole wall-face appeared to have been patched together when the lower part of the tower was enlarged. No obvious trace of any opening can now be detected inside the mural chamber. If Holmes did in fact

see what he infers was a medieval opening, an alternative possibility suggests itself: whilst there is now no evidence for either an internal or external stair as part of the medieval structure, access to the wall walk could have been gained by a short straight stair rising from within a corner of the tower as can still be seen at the Ever Tower (*PSAN* 4, 9, 1939–42, 37). This could have occupied the area of the present mural chamber and been entered from a doorway in the south side of the tower.

Post-Medieval Additions and Alterations

The Civil War Bastion (fig. 18)

Excavation in trenches 4, 5 and 6 produced unexpected remains of a stone-built bastion or bulwark (RCHME 1964, 101) evidently built as an outwork to strengthen the defensive capability of the tower in the second quarter of the 17th century. Other evidence for refortification at this time has been found at the Castle (Harbottle and Ellison 1983). Possibly the bastion at Plummer Tower was a result of Sir Jacob Astley's visit to Newcastle in 1639 to advise on improving the town's defences in the light of the threat from Scotland. One of the plans submitted by Astley shows an artillery piece, described as "a small Cannon", beside the Plummer Tower and within the walls. The endorsement on the plan states that cannon drawn in such positions were to be mounted on the "round tower" by which they were shown. (P.R.O MPF 287.) The existence of an external work suggests that Astley's proposal for mounting a cannon on the tower itself proved impractical or that the structure was in an unusable state. Alternatively the bastion could have been built as an emergency measure at the time of the siege of Newcastle in October 1644; facing the tower on the eastern side of Pandon Dene and only about a quarter of a mile away was the Shieldfield fort, an earthwork artillery position which became a threat after being captured by the besiegers on 18 October 1644 (Terry 1899, 160).

The principal work, with part of an associ-

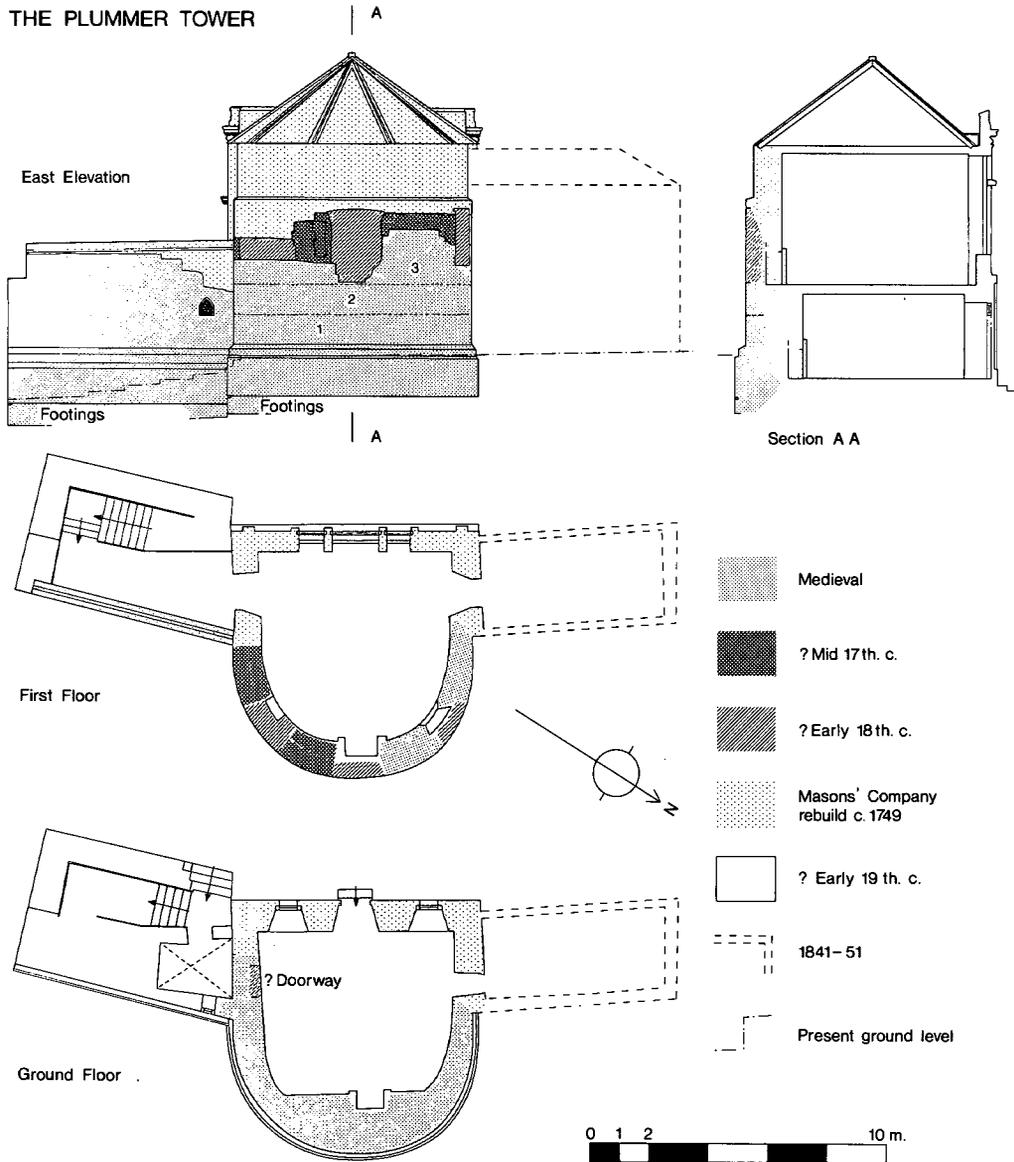


Fig. 19 Plummer Tower, plans and elevations.

ated ditch, was found in Tr.5/6. Although heavily robbed, enough remained to show that the bastion had been cut deeply into the boulder clay subsoil. An outer face of well-coursed, mortared ashlar, possibly reused stone from the Manors, retained a rubble core. Where the

outer face could be bottomed it was found to rest on wooden planks which showed signs of previous use. In the southern angle, where the bastion wall returned towards the town wall, a circular sectioned beam was set horizontally within the core work and appeared to have

once projected beyond the face. It appeared to be set too low to have functioned as a storm-pole (RCHME 1964, 102). Similarly sized timbers have been found built into the Civil War bastion at the Castle and may have formed some kind of timber lacing.

Abutting the east wall of the bastion and at the point of return westward was another section of masonry, identical in construction but evidently secondary. The extent or function of the fragment could not be determined as it lay outside the area of excavation.

Part of the bastion ditch was excavated on the south side, where it was separated from the stonework by a berm 1 m wide. The inner slope rose steeply from an apparently almost flat bottom cut into the boulder clay. About half-way up the slope were a number of small stake holes, possibly marking the positions of swinefeathers. The outer edge of the ditch was revealed in the course of construction work on the adjacent development site, and appeared to have had an almost vertical side. Where the ditch returned towards the town wall it ended in another steep slope running parallel with the wall. This activity, or subsequent erosion, had exposed part of the wall foundations. A similar slope away from the wall face at about footings level also appeared in Tr.4, presumably associated with the northern return of the bastion wall and ditch. In Tr.4,5/6 three musket balls came from the lower ditch deposits, as did a small wooden object which may have some military connection (see "The Finds").

Post Civil War infilling of the ditch was limited, and produced pottery and objects broadly spanning the mid to third quarter of the 17th century. These deposits overlay demolition debris and corework of the bastion wall, showing that it soon became a stone quarry (fig. 20). There is a suggestion of this in the Common Council Minute Book for 2 February 1658, where the Town Clerk is permitted to take "some stones lying beyond the town wall at the Carlingcroft" provided they were not needed to repair the (town) wall (TWAD 589/5, f. 510).

The bastion was probably of "arrowhead" form, with the point being opposite the centre of

the medieval drum tower. Varieties of arrow-head bastions were common features of contemporary military architecture. How high the bastion stonework rose relative to the tower is unknown since no obvious 17th century ground level survived within the bastion, nor is it understood how access to the bastion from within the walls was arranged. Since so little of the Plummer Tower bastion could be exposed and nothing is known of other possible temporary defence works on that stretch of the town wall, it is difficult to draw clear typological parallels with Civil War defences elsewhere (RCHME 1964; Harrington 1992). Interestingly a memory of the bastion seems to have been perpetuated; H. Oswald, architect, who renovated the tower c. 1930, referred to the "important part" played by the building in the siege of 1644, and mentioned the tradition that there had once been a casemate for a gun in the east wall of the tower (PSAN 4, 4, 61).

The Plummer Tower

The state of the tower immediately following the Civil War is unknown. It seems reasonable to suppose that the three blocked windows previously mentioned were inserted by the Cutlers who were apparently the first to convert the tower from its defensive role. They certainly predate the Masons' rebuild, the blockings extending below the level of the timber first floor. Although the surrounds have been completely robbed out, the proportions of the areas of blocking are reminiscent of 17th century windows, and are of similar shape to the window in Richardson's drawing of White Friar Tower. They seem incongruously large for lighting the small vaulted chamber which presumably still existed at this date.

According to Sheriton Holmes (1895-6, 18) who cites no authority, it passed to the Masons in 1742 who repaired and refronted it c. 1750. In fact the Masons petitioned for and were granted, a licence to erect a meeting house upon the Cutler's Tower on 2 February 1749 (TWAD 589/14, f. 147). Despite Sheriton Holmes' statement, the wording of their peti-

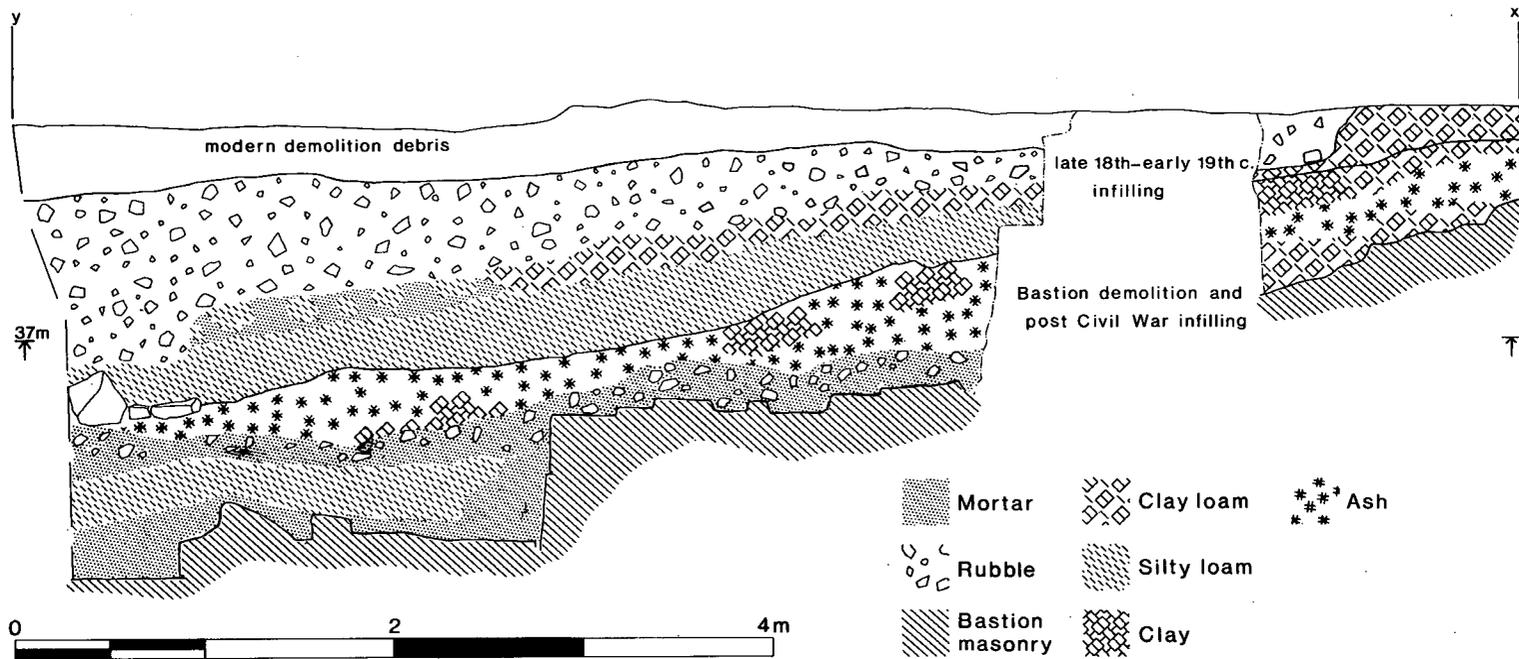


Fig. 20 Town Wall, Croft Street: Trench 5, south section.

tion clearly indicates that they had continued to use their former meeting house (the White Friar Tower) until the mounting of artillery there in 1745 made it unusable. A committee appointed to view the building and consider the Masons' request decided that they should be permitted "to build a meeting house thereon . . . to contain in length 9 yds in front, the same not to extend beyond the old foundation". This last provision may have been intended to prevent encroachment upon the intramural road. The Masons were also to build "in such a manner as will support cannon in case of any tumults or commotions". The '45 was, after all, a very recent memory and during that crisis the defensive capability of the tower had been limited to a single water tub! (NRO ZRI 127/4/38). How soon the reconstruction was completed is unknown, but the scope of the Mason's restoration was rather more extensive than their licence suggests. The inner face of the tower was completely dismantled (if it was in fact still standing) and a new Palladian façade was erected to the specified length, but projecting some 1.80 m from the inner face of the wall. At the same time the drum of the tower was heightened by some 2.10 m above a chamfered offset and considerable reconstruction undertaken below the same. The three large windows in the drum were evidently blocked at this time, the centre one becoming the site of the fireplace. This, together with another in the ground floor, were served by a tall brick chimney visible on the frontispiece to Brand (1789), and which survived until the City's restoration c. 1959–60. The first floor was carried on roughly-dressed pine rafters resting on scarcements in the drum of the tower and the new façade. The new façade extended back on each side to include doorways giving onto the wall walk north and south. It is presumed that the present style of roof also dates from these alterations. On the south side of the tower an external stair was subsequently built, giving access to the wall walk. Originally this rose from surrounding ground level (NRO ZAN M12, drawing by T. M. Richardson c. 1820); the present level "plinth" which skirts the forestair is first shown

in 1881 (NCL acc.8749) suggesting that ground levels against the west face of the tower had been reduced. On the north side Richardson's drawing seems to show another stair rising southward to serve the northern first floor doorway. A similar stair exists at Morden Tower.

Parts of the parapet, particularly at the angle of the wall and the tower, may have been rebuilt at this time.

Two small mural chambers, one of which has already been referred to in the discussion of the medieval tower, post-date the Masons' rebuild. To accommodate the larger chamber the inner face of the town wall has been rebuilt as a thinner, angled wall, containing a door leading off the first landing of the forestair. This new wall butts the dressed jamb stones on the return of the Masons' façade and is thus clearly later than their reconstruction. Since the arched ceiling of the chamber is of one build, this too must be later than c. 1749. Another small chamber lies below the forestair and is entered from a south-facing door. This too presumably belongs to the Masons' reconstruction.

Sometime in the second quarter of the 19th century a two-storied house was built against the north side of the tower. The house may have been intended to form part of a longer row which was never built, since the northern gable wall is of very temporary-looking rough sandstone rubble. The western façade is entirely of brick, the eastern consists of a stretch of the wall built by the Shields Road Trustees in 1811, with brickwork above. By 1896 a "privy" had been built in the angle between the tower and the house, later enclosed within a small yard demolished in 1989.

The date of house construction is not known, though it has to be between 1841 and 1851; it does not appear on Oliver's maps of 1830 or 1841 but is shown on John Tallis' map c. 1851. According to the 1841 census the "Old Tower" in Croft Street was occupied by Edward and Ann Lambert and their two sons (TWAD MF12). This is surprising if the name is taken literally, since the Masons were still meeting at the tower. Possibly the Lamberts occupied the

ground floor room or what would have then been the very newly-built house on the north. Forty years later the "Masons Tower" was home to five members of the Cummings family and their relatives William and George Turnbull, a printer and a labourer respectively (TWAS MF1005, 1861 Census). Possibly the "Masons Tower" embraced the adjoining house which was certainly in existence by then; even allowing for Victorian concepts of living-space it is difficult to imagine seven people living in the basement of the tower, a room measuring less than 22' × 18'. The area to the east of the tower, part of the former King's Dykes, was enclosed in the mid-19th century and became, appropriately, a stoneyard for the Corporation, remaining thus until the early years of the present century.

The Masons were still in occupation in 1905-6, when the tower was threatened with demolition as part of the Corporation's street improvements (*PSAN* 3, 2, 5). Although these proposals were abandoned after protests from the Society of Antiquaries, appropriately supported by the MP William Plummer, no action was taken to improve the fabric or setting of the tower. At the time of the First World War it was a picture framer's workshop, though the Masons apparently retained an interest in the building until 1928 (*PSAN* 4, 4, 62). Some refurbishment was undertaken c. 1930, but subsequently the tower fell into disuse until restored as a small house by Mrs. V. B. Scott in 1948 (Kelly 1950). By the early 1950s it was once more derelict. In 1957 or 1958 the Council bought back the building and subsequently the whole structure was restored by the Estates and Property Department to house a display of the City archives and a "period room" of the Laing Art Gallery. This function ceased c. 1978 and the building was refurbished again in the early 1980s. In 1989 the City parted with the Tower and adjoining house on a long term lease and extensive internal redecoration and repairs were undertaken to provide office facilities. To the time of writing, however, the building has remained empty.

THE FINDS

Janet Vaughan

The small finds assemblage from this excavation has been of some use in interpreting the pattern of site use. It has little intrinsic value, and does not lend itself to comparative studies with other groups of finds from Newcastle, although individual pieces can be paralleled. For the published report a few objects of particular interest have been illustrated or commented on and brief general notes are given under each finds group heading. The quantity of animal bone from all phases was too small to be worth inclusion.

THE POTTERY

A total of 1062 sherds (11.85 kg) was recovered from recorded contexts in five of the trenches excavated (see first chart), although the great majority was from Trenches 5 and 8 which were linked. Nearly 55% of the assemblage came from contexts producing late 18th-19th century types (numbered 32 to 38 on the chart). A simple breakdown of the whole assemblage is given in the second chart below. The quantities involved are too small to make any more detailed analysis valid. For the same reason the assemblage has been recorded on a single database file based on fabric types per context, with details of the few vessels of interest given in the comments. The fabric list given is an edited version of that used by the writer for pottery from other sites in the city; the gaps being types which do not occur on this site.

	fabric no.
Buff white type	4
Early reduced greenware	6
Later reduced greenware	8
Other medieval	10
Scarborough	11
Rhenish Stoneware	16
Werra/Weser	18
Imported Redware	20

Chart 1: Pottery Quantities

No. of sherds given at top of column

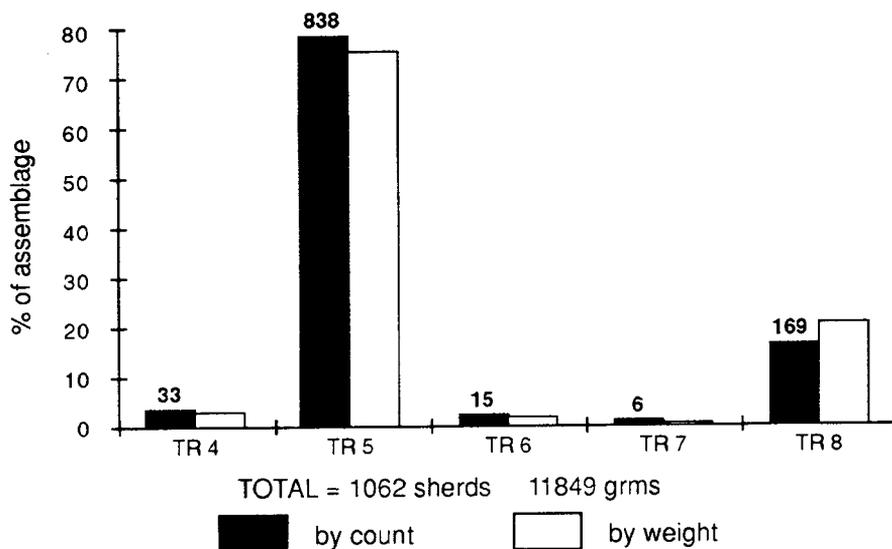
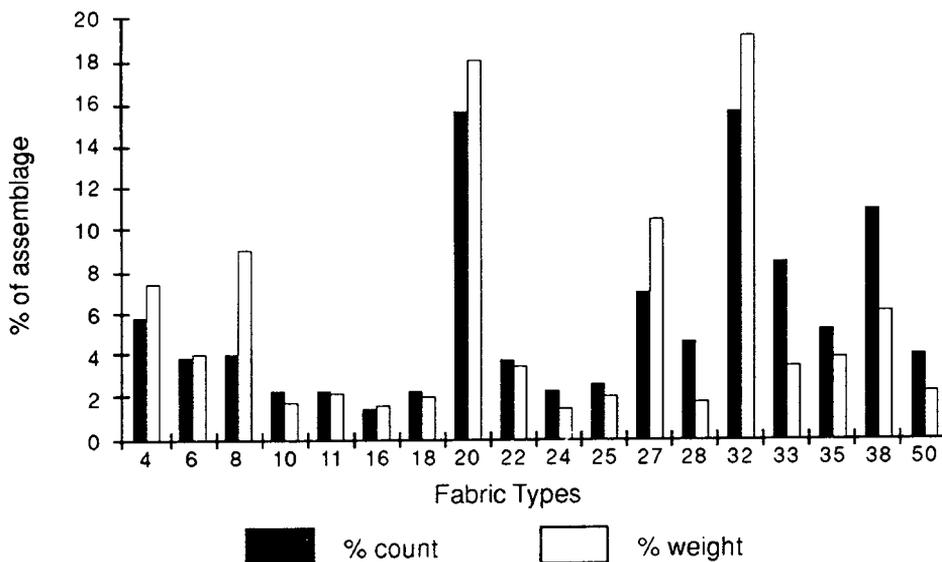


Chart 2: Pottery Fabric Types



Whitewares	22
Cistercian	24
Blackware	25
English Redware	27
Tin glaze earthenware	28
Later red/brownwares	32
White earthenware	33
White salt glaze stonewares	35
Creamware	38
Other post-medieval	50

Local Medieval Fabrics

A rim sherd as *Orchard Street 2*, came from a pre-wall context (Tr.6/67). The type also occurred amongst the Mansion House material from Ph.1—13th century (no. 8, Vaughan, forthcoming). The other medieval fragments were of no particular individual interest. The relatively small number of reduced greenware type 4 sherds would suggest little 15th century activity. Reduced greenware type 5 is an early post medieval type and has been linked with type 4 for the chart. They occurred in almost equal quantities.

Imported and Post-Medieval Fabrics

Imported redwares: These formed the largest pre-18th century group, although in such a small assemblage the two illustrated vessels accounted for about a third (by weight)! There were form sherds of 29 vessels.

1 Low Countries redware cooking pot. Not enough rim survived to be sure the vessel only had one handle, and there were no feet. Rim distorted, presumably by handle attachment. Glaze has run over the fractures on some sherds. Patchy glazing and a narrow neck relative to a deep globular body suggest an early, possibly 15th century, date for this vessel but its association with the Cistercian vessel (no. 6) and reduced greenware type 5 would point to the late 15th century, if not the 16th. The proportion recovered and condition of this pot suggest it is not "residual" here. Tr.5/20 and 80.

2 Rim of a similar vessel, with smaller diameter. Similar to *Ditch 162*, another early form. Tr.5/20.

Of four rim sherds of other probable cooking pot forms three seemed to be the lid-seated type as *Blackfriars 2* and probably 17th cen-

tury, although only one, from Tr.5/52 was a clear example. The other was a collared rim with neck lid seating similar to *Norwich 957*, from Tr.5/64. Five other small sooted rim sherds were uninformative but could have been from bowls used for cooking or heating. There were six feet. One of these, from Tr.8/95, was from a fairly flat bottomed vessel, possibly a skillet rather than a cauldron type cooking pot.

Other vessels:

Small sooted rim sherd ?frying pan as *Ditch 194*. Tr.5/52

Rim similar to *Ditch 184*, a jug. Tr.5/52

Possible chamber pot as *Ditch 240*. Tr.5/64

Two slip trailed dishes with collared rims (in Tr.5/28 and 74). See *Ditch 204* and 205.

One collared and one lid seated rim. Tr.5/53 and 64

Four handle fragments.

Whitewares: these seemed to make up a relatively large proportion of the Croft Street assemblage. They have been recorded under one fabric number in the archive although the fabrics vary and do not all have the same provenance.

3 Dish in sandy white fabric with also fine pink/red and black (iron oxide) inclusions. Rim similar to redware form *Ditch 203*. Yellow internal glaze with heavy iron staining. This is a feature of "Rhenish yellow wares", which first occurred in the Castle Ditch in the phase 13 (mid-16th century) (Ellison 1981, fig. 6 and pp. 152-4). Tr.5/52.

4 Rim of cauldron type vessel in sandy white fabric, no red inclusions. Pale greeny yellow glaze internally. Probably Low Countries import. Form similar to *Norwich* no. 927. Tr.5/52.

5 Rim and handle of cauldron type vessel in pinkish buff slightly sandy fabric. Copper green, slightly uneven glaze internally with patch on shoulder. See *Norwich* no. 923—identified as Dutch white earthenware. Tr.5/105.

In addition to the illustrated vessels there were three fragments, not joining but including a foot, of a shallow vessel with internal copper green glaze and collared rim as illustrated in the Orchard Street section no. 57 (a similar vessel occurred at the *Mansion House* no. 47).

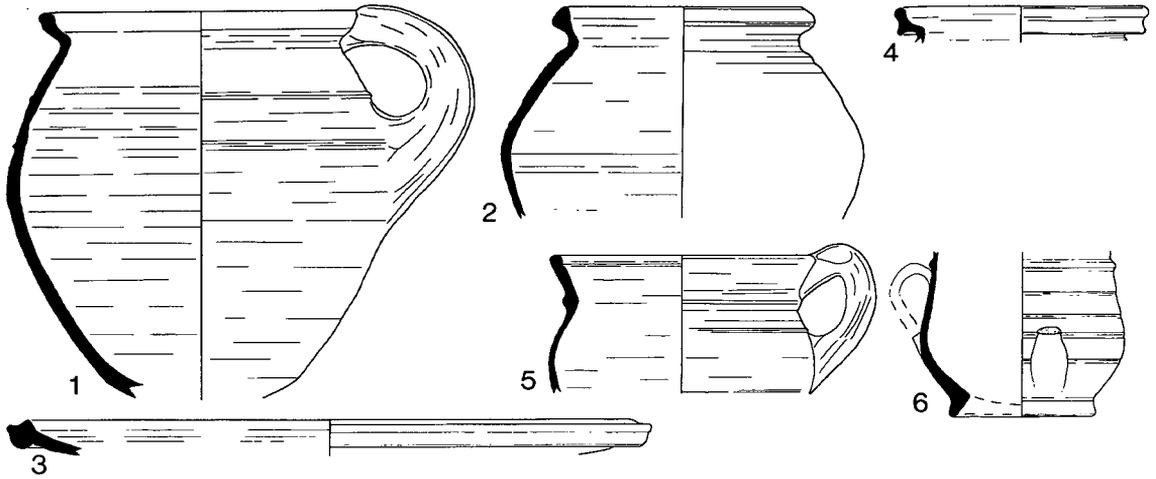


Fig. 21 Town Wall, Croft Street: Pottery (1:4).

The same context, Tr.5/64, produced two other tripod feet, one small and fully glazed in a greyish fabric, one with sharp base angle and bright green glaze, both sooted. There was another base fragment with foot scar in Tr.5/78. Bichrome body fragments—green glaze outside and yellow inside—in a creamy buff sandy fabric occurred in Tr.8/100 and Tr.5/40, while 40 also produced a chipped fragment of base with a pulled foot.

All the vessels mentioned above are most likely to be imports from the Low Countries or the Rhineland of late 16th–early 17th century. Fragments of a collander in 40 and a bowl with simple rim in Tr.8/108, similar to those illustrated from Cove Fig. 4 (Haslam 1975) are probably English, early 17th century.

Cistercian ware

6 Cup, similar to decorated form as *Ditch* 323 but with distinct ridge above handle and slightly ridged body. Red brown fabric with very dark brown “metallic” glaze. Tr.5/19, 20 and 80.

Two fragments, including the handle, of another plain vessel with fairly smooth dark brown glaze, probably as *Ditch* 313, also occurred in 20.

Blackware: fragments of about six mugs. Also a rolled rim like the common Metropolitan

type bowl rim (see *Blackfriars* 35, *Pit* 10) in a sandy red-brown fabric with full cover of black glaze. From Tr.5/32.

English Redware: fragments of 10 slip decorated flatwares, seven of them Metropolitan type, a chipped fragment of candlestick. Sooted fragments of two small “skillets”—see *Blackfriars* nos. 25, 26, 27.

Tin glazed earthenwares: 30 small abraded fragments from Tr.5/29 account for discrepancy between “count” and “weight” percentages! Some of the small fragments in this context were of same vessel as a cup/bowl rim in Tr.5/28 with overall pale blue glaze, dark and light blue painted foliage outside with geometric border pattern inside. Probably an early 18th century vessel. Most of the other occurrences were scattered single sherds, though there was a ring base of flatware with hanging hole.

GLASS

A total of 113 fragments of glass of all kinds was recovered. Sixty-one of these were bottles from 18th–19th century contexts, which also contained pieces of light green window glass.

Among 13 fragments from the bastion ditch fill were two pieces of tubing, both in green metal with heavy surface patina. One was oval sectioned and of 5 mm bore similar to *Bastion*, p. 184, the other round sectioned and 3 mm bore. Tr.5/40 and 52 respectively.

CLAY TOBACCO PIPES

Sixty-seven fragments of clay pipe were found, of which only 6 were bowls. The bowl types and the bores of most of the stem fragments indicate a 17th century date.

One bowl and an interesting fragment of decorated stem occurred in the bastion ditch fill [Tr.5/52], and have been illustrated. One stamped stem (Thomas Parke 1667–87) came from a modern context [Tr.5/28].

7 Bowl, with milling around heel. Type uncertain.

8 Stem fragment, $\frac{7}{64}$ ths. Densely covered with scrolls of vegetation, flowers and fruit, at first sight reminiscent of friezes of 17th century decorated plaster. There were both simple tobacco type flowers and complex tudor roses, different shaped leaves, various single fruits, grapes and monkeys. The illustration is of one side flattened out to show the detail more clearly. Stems with simple scrolls of vegetation occurring in 18th and 19th century contexts at Black Friars were identified as “uncertain Dutch” [Edwards, forthcoming]. This fragment though belongs to a mid-17th century context.

CERAMIC BUILDING MATERIAL

FLOORTILE (4 fragments). Two of these were plain and glazed, one (illustrated) was decorated.

9 Fragment of floor tile, fine sandy fabric with impressed pattern filled with white-firing clay under glaze, and bevelled edge. This is the first decorated floor tile recorded from Newcastle. Tr.5/54 bastion ditch infill.

ROOFTILE (14 fragments). The majority (10) were pantiles. One large fragment of medieval roof tile, identical to the Group 1 type found at Orchard Street [q.v.], occurred residually in the bastion ditch infill. Tr.5/52.

BRICK (52 fragments). More than half of these had no measurable dimensions, the rest (22) could only be measured for thickness.

STONE

Two architectural fragments were found, both in a fine grained sandstone. One was possibly a piece of ribbing (TR.5/unstrat.). The other, curved, and with a well dressed outer face and c. 84 mm thick, occurred in a pre-town wall context and may have been cladding for a rubble-cored pillar.



Fig. 22 Town Wall, Croft Street: other finds, pipestem 1:1, others 1:2.

COINS

Of the three coins found one, from a service trench, was probably a very worn Georgian halfpenny. There was also an insecurely stratified token by Hans Krauwinkel of Nuremberg (fl. c. 1580–1610) from disturbed deposits within the bastion (Tr.5/?21), and a corroded Turner, probably of Charles II, from the bastion ditch fill (Tr.5/59).

METALWORK

COPPER ALLOY (7 fragments). Medieval finds included a piece of tubing 1.5 mm diameter (Tr.5/20), and a 210 mm length of chain (Tr.5/112). The latter context contained two sherds of 19th century pottery, so may be contaminated.

LEAD (6 fragments)—all from the bastion ditch. Two musket balls, both c. 16 mm diameter—one weighed 28 g the other 26 g—Tr.5/79 and 1010 respectively (NB. 28 g = approx. 1 oz). Context 79 also contained a fragment of lead apparently a severely impacted bullet weighing only 5 g. Another impact flattened bullet with part of the mould line still visible came from context 95 (weight 30 g). Both spent bullets appeared to have struck stonework. The only other recognizable object was a small piece of window came (Tr.5/56).

IRON (48 fragments). Thirty were identified as nails or pieces of nails, with the largest group (13) coming from the apparently medieval context 20/80 in Tr.5. One of these was a “tack-nail”, with a large circular head 20 mm diameter and tapering shank 40 mm long. A small blade with offset tang, probably part of a pair of shears or scissors, came from the same context. Apart from what appeared on X-ray to be a small tube (Tr.5/56) there were no other identifiable objects.

MISCELLANEOUS

A few scraps and wood and leather offcuts

were preserved in the waterlogged bastion ditch fill. The leather was apparently stray pieces of cobbler's waste, among which were several fragments of narrow, square-toed shoe soles. Only one piece of wood (illustrated) had obviously been worked.

10 Wooden object c. 89 mm long and c. 30 mm diameter, turned with sharply tapering ends. Species unidentifiable. Several similar objects, in a range of sizes, were found in Civil War deposits at the Castle, Newcastle upon Tyne, suggesting a military origin. Tr.5/95.

BIBLIOGRAPHY—REPORTS 1 AND 2

Abbreviations

A.A.	Archaeologia Aeliana.
C.B.A.	Council for British Archaeology
CEPS	City Estates and Property Surveyor
N.C.L	Newcastle City Library Local Studies Section
N.R.O	Northumberland Record Office
P.R.O	Public Record Office
P.S.A.N.	Proceedings of the Society of Antiquaries of Newcastle upon Tyne
RCHME	Royal Commission on Historical Monuments England
S.S	Surtees Society
T.W.A.D	Tyne and Wear Archives Department

Abbreviated references to excavation reports used in “The Finds”:

- Closegate*—Vaughan and Davis in Fraser *et al.*, forthcoming a.
Ditch—Harbottle and/or Ellison 1981
Bastion—Ellison 1983
Pit—Ellison, 1979
Blackfriars—Vaughan 1987
Queen Street—Bown 1988
Mansion House—Vaughan, forthcoming b.
Norwich—Jennings 1981

- AKENHEAD, D. AND SONS (1807). *The Picture of Newcastle upon Tyne*, Newcastle 1807. Facsimile by E. & W. Books Ltd, 1969.
- ARMITAGE, P. L. (1984). "The Faunal Remains" in Thompson, A. *et al.* Excavations at Aldgate, 1974 *Post-Medieval Archaeology*, 18, pp. 131-44.
- BAXTER, M. J. and COOL, H. E. M. (1991). "An approach to quantifying window glass", in K. Lockyear and S. Rhatz (eds) *Computer Applications and Quantificative Methods in Archaeology 1990* BAR International Series 565, (Oxford), 127-31.
- BECKMAN, B. (1974). "The main types of the first four production periods of Siegburg pottery", in *Medieval Pottery from Excavations* (eds V. Evison *et al.*), pp. 183-220.
- BECKMAN, SIR MARTIN (1683). *New castle upon Tine Plan* (copied 1742).
- BOURNE, HENRY (1736). *A History of Newcastle upon Tyne*, 1736.
- BOWN, L. (1988). "The Pottery" in O'Brien, C., Bown, L., Dixon, S. and Nicholson, R. 1988 *The Origins of Newcastle Quayside, Excavations at Queen Street and Dog Bank*. (The Society of Antiquaries of Newcastle upon Tyne Monograph Series 3.)
- BRAND, JOHN (1789). *A History of Newcastle upon Tyne*, 2 vols, London 1789.
- BREARS, P. C. D. (1971). *The English Country Pottery. Its History and Techniques*.
- BUCK, S. and N. (1745). *View of Newcastle upon Tyne*.
- CLARKE, H. and CARTER, A. (1977). *Excavations in King's Lynn 1963-1970*. (Medieval Archaeology Monograph Series 7.)
- CORBRIDGE, JAMES 1723: *Plan of Newcastle upon Tyne*.
- CROSSLEY, D. W., (ed.) (1981). *Medieval Industry*.
- DAVIS, S. J. M. (forthcoming) "Faunal Remains from Closegate I & II, Newcastle, Tyne and Wear, 1988 and 1990 excavations".
- EDWARDS, L. (1987). "The Clay Tobacco Pipes" in Harbottle, B. and Fraser, R. 1987.
- EDWARDS, L. (1988). "Seventeenth and Eighteenth Century Tyneside Tobacco Pipe Makers and Tobacconists" No. XI in *The Archaeology of the Clay Tobacco Pipe*, (ed. Peter Davey). BAR British Series 192.
- EDWARDS (forthcoming)—report on clay tobacco pipes for the second Blackfriars report.
- ELLISON, M. (1979). "The Pottery" in Ellison, M., Finch, M. and Harbottle, B. The Excavation of a 17th-Century Pit at the Black Gate, Newcastle upon Tyne, 1975 *Post-Medieval Archaeology* 13 (1979), pp. 157-67.
- ELLISON, M. (1981). "The Pottery" in Harbottle and Ellison, 1981.
- ELLISON, M. (1983). "The Pottery" in Ellison, M. and Harbottle, B., 1983.
- ELLISON, M. and HARBOTTLE, B. (1983). "The Excavation of a Seventeenth Century Bastion in the Castle of Newcastle upon Tyne", *A.A.*, 5th series, 11.
- EVETTS, L. C. (1942). "Medieval Painted Glass in Northumberland" *A.A.*, 4th series, 20, 91-109.
- FRASER, R. *et al.* (forthcoming) a "Excavations adjacent to the Closegate". The first part of the Close project.
- FRASER, R. *et al.* (forthcoming) b "Excavation on the site of the Mansion House, Newcastle upon Tyne 1990". The second part of Close project.
- GEDDES, J. (1985). "The Small Finds" in Hare, J. N. *Battle Abbey. The eastern range and excavations of 1978-90* HBMCA Archaeological Report No. 2.
- GEE, E. A. (1969). "The Painted Glass of All Saints Church, North Street, York", *Archaeologia* 102, 151-202.
- GIDNEY, L. J. (1989). "The Mammal and bird bone", in O'Brien *et al.*, 1988.
- GOOD, G. L. and TABRAHAM, C. (1981). "Excavations at Threave Castle, Galloway, 1974-1978". *Medieval Archaeology* 25, 1981.
- GREY, WILLIAM (1649). "Chorographia; or, A Survey of Newcastle upon Tyne, Printed by S. B., Newcastle 1649" in *Newcastle Reprints, Topographical and Historical*, Newcastle, for Emerson Charnley, 1818.
- HARBOTTLE, B. (1968). "The Town Wall of Newcastle upon Tyne: Consolidation and Excavation" *A.A.*, 4th series, 47, 70-87.
- HARBOTTLE, B. and ELLISON, M. (1981). "An Excavation in the Castle Ditch, Newcastle upon Tyne, 1974-76", *A.A.* 5th series, 9.
- HARBOTTLE, B. and FRASER, R. (1987). "Black Friars, Newcastle upon Tyne, after the dissolution of the monasteries", *A.A.* 5th series, 15.
- HARRINGTON, P. (1992). *The Archaeology of the English Civil War* Shire Publications.
- HASELOCK, J. and O'CONNOR, D. (1980). "The Medieval Stained and Painted Glass of Durham Cathedral", in *Medieval Art and Architecture at Durham Cathedral*, BAA Conference Transactions for the year 1977, 105-29.

- HOOPPELL, REV. R. E. (1881). "The Town Wall of Newcastle-upon-Tyne in Pandon Dene", *A.A.*, 2nd series, 11 (1886).
- HUNTER BLAIR, C. H. (ed.) (1937). "The Walls of Newcastle upon Tyne Illustrated from Drawings by George Bouchier Richardson", *A.A.*, 4th series, 14.
- HURST, J. G., NEAL, D. S., VAN BEUNIGEN, H. J. E. (1975). North Holland Slipware in *A Contribution to Medieval Archaeology* (ed. Renaud, J. G. N.) Rotterdam Papers II.
- HURST, J. G., NEAL, D. S., VAN BEUNIGEN, H. J. E. (1986). *Pottery produced and traded in North West Europe 1350-1650*, Rotterdam Papers, VI.
- JANSEN, H. (1983). "Later medieval pottery production in the Netherlands", in *Ceramics and Trade* (eds Peter Davey and Richard Hodges), pp. 121-185.
- JENNINGS, S. (1981). *Eighteen Centuries of Pottery from Norwich* East Anglian Archaeology Report No. 13.
- JONES, M. J. and BOND, C. J. (1987). "Urban Defences", in *Urban Archaeology in Britain* (eds Schofield, J. and Leech, R.) CBA Research Report 61.
- KELLY Directories of Newcastle upon Tyne.
- KNOWLES, J. A. (1936). *Essays in the History of the York School of Glass-Painting*, London.
- LINDSAY, W. J. (1989). "Glass Objects" in J. A. Stones (ed.) *Three Scottish Carmelite Friaries: Excavations at Aberdeen, Linlithgow and Perth 1980-86*, Society of Antiquaries of Scotland Monograph 6 (Edinburgh), f.9.5.1.
- LITHGOW, WILLIAM (1645). "An Experimentall and Exact relation Upon That famous and renowned Siege of Newcastle . . . by William Lithgow, Edinburgh 1645." In *Newcastle Reprints*, Newcastle, for Emerson Charnley, 1820.
- MACKENZIE, E. (1826). *A History of Newcastle upon Tyne*.
- MOORHOUSE, S. (1970). "Finds from Basinghouse, Hampshire Part 1" *Post Medieval Archaeology* 4, pp. 31-91.
- NOLAN, J., FRASER, R., HARBOTTLE, B. and BURTON, F. C. (1989). "The Medieval Town Defences of Newcastle upon Tyne: Excavation and Survey 1986-87" *A.A.*, 5th series, 17.
- O'CONNOR, D. E. and HASELOCK, J. (1977). "The Stained and Painted Glass", in *A History of York Minster* (eds Aylmer, G. E. and Cant, R.), Oxford, 313-94.
- O'CONNOR, T. (1982). "Animal bones from Flaxengate, Lincoln c. 870-1500", in *The Archaeology of Lincoln*, 18 (1). London, C.B.A.
- O'CONNOR, D. (1990). "Bones from 46-54 Fishergate", in *The Archaeology of York Vol. 15/4: The Animal Bones*, London, C.B.A.
- OLIVER, THOMAS (1830). *A New Map of Newcastle upon Tyne*.
- PARTICULAR RELATION (1644). *Particular Relation of the Taking of Newcastle*, London.
- POULTON, R. and WOODS, H. (1984). *Excavations on the site of the Dominican priory at Guildford in 1974 and 1978*, Research volume of the Surrey Archaeological Society, 9.
- RACKHAM, D. J. (1981). "The animal remains", in Harbottle and Ellison, 1981.
- RACKHAM, D. J. (1983). "The animal remains", in Ellison and Harbottle, 1983.
- RACKHAM, D. J. (1987). "The animal remains", in Harbottle and Fraser, 1987.
- RCHMY (1981). *An Inventory of the Historical Monuments in the City of York 5: The Central Area*.
- RICHARDSON, M. A. (1846). *The Local Historian's Table Book*, Historical Division 5.
- RICHARDSON, T. M. *Memorials of Old Newcastle upon Tyne*, 2 vols.
- SHERITON HOLMES (1895-6). "The Walls of Newcastle-upon-Tyne", *A.A.* 2nd series, 18.
- SMITH, K. (1986). "The St. Helen's School Field Site, in Daniels, R. The Medieval Defences of Hartlepool, Cleveland: the results of Excavation and Survey", *Durham Archaeological Journal* Vol. 2, 63-72.
- STALLBRASS, S. (1988). "The animal bones", in Scull, I. Excavations in the cloister of St. Frisewide's Priory, 1985. *Oxoniensa*, 53: pp. 21-75.
- SURTEES SOCIETY (1961). *Northumbrian Petitions*, C. M. Fraser (ed.), S.S.176 (1961), pp. 197-8.
- TERRY, C. S. (1899). "The Siege of Newcastle upon Tyne by the Scots in 1644", *A.A.*, 2nd series, 21, 1899.
- THOMPSON, I. (1746). "A Plan of Newcastle upon Tyne".
- TWAD 589 Calendar of Common Council Books, Newcastle upon Tyne (Typescript).
- VAUGHAN, J. E. (1987). "The Redwares", in Harbottle, B. and Fraser, R. 1987.
- VAUGHAN, J. E. forthcoming a. "The Pottery", in R. Fraser *et al.* forthcoming.
- VAUGHAN, J. E. forthcoming b. "The Pottery", in R. Fraser *et al.*
- WELFORD, R. (1887). "The Walls of Newcastle in 1638", *A.A.* 2, 12, 1887.
- WELFORD, R. (ed.) (1883). *History of Newcastle and*

Gateshead in the 14th and 15th centuries.
WOODFIELD, C. (1981). "Finds from the Free Gram-

mar School at the Whitefriars, Coventry c. 1545-
1557/58" *Post Medieval Archaeology* 15.

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