

20-30 LAWRENCE STREET,

YORK

**REPORT ON AN ARCHAEOLOGICAL
EVALUATION AND BUILDING SURVEY**

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ABSTRACT

An archaeological evaluation consisting of four trenches at 20-30 Lawrence Street, York, located post-medieval and modern remains, together with residual Roman and 10th century pottery. In addition a building survey of the Grade II listed flax mill and associated buildings located on the site identified numerous original features and identified the flax mill as being of more than local significance.

1. INTRODUCTION

Between June 25th and July 6th 2001 York Archaeological Trust carried out an archaeological evaluation and building survey at 20-30 Lawrence Street, York (NGR SE 6113 5132, Figure 1).

The aim of the evaluation and building survey was to record the character, date and state of preservation of any archaeological deposits, structures, or features which would be vulnerable to disturbance or destruction should the proposed development proceed. The work was carried out in accordance with a specification prepared by York Archaeological Trust and approved by John Oxley, Archaeologist for the City of York Council.

The work was undertaken on behalf of Mr W. Legard of Waterfront House (York) Ltd. All records of the evaluation are currently stored with the York Archaeological Trust under the Yorkshire Museum accession code YORYM:2001.10752.

2. METHODOLOGY

The archaeological evaluation consisted of the excavation of three 3x3m trenches, and one 4x2m trench, to a maximum depth of 1.5m below the present ground level or to the natural sub-soil, whichever was reached first. Prior to any machining the area of each trench was examined thoroughly with a cable detector and service plans for gas, water, electricity and telephone cables were checked for any underground services. Modern deposits were removed by machine under archaeological supervision and then deposits of archaeological interest were hand excavated. Recording followed the procedures laid down in the York Archaeological Trust *Context Recording Manual* (1996). Standing sections of two of the trenches were drawn at a scale of 1:20 and deposits and features within the trenches were recorded as single context plans at a scale of 1:20. Colour photographs were taken of any significant features and standing trench sections.

A programme of environmental sampling was agreed with the Regional Advisor for Archaeological Science of English Heritage and the Environmental Archaeology Unit, University of York prior to commencement of the archaeological evaluation, but none of the deposits encountered during excavation merited environmental sampling.

The archaeological evaluation also included the recording of a Grade II listed flax mill and associated buildings on the site. This recording work followed the guidelines in Chapter 3 of the ALGAO document 'Analysis and recording for the conservation and control of works to historic buildings' 1997.

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3. GEOLOGY AND TOPOGRAPHY

The underlying drift geology of the site is Boulder clay over lacustrine clays with pockets of sand (occasionally waterlogged) in places. Beneath this the solid geology is of Bunter and Keuper sandstones laid down in the Triassic period some 225 million years ago (Geological Survey 1967).

The site lies outside the walled medieval city roughly 75m east of Walmgate Bar, and is bordered to the north by Lawrence Street, while the remaining sides are surrounded by a mixture of commercial and domestic buildings of 19th century and later date.

The property investigated consists of an almost rectangular plot of land measuring 36m east-west and 100m north-south. A number of small shops fronted directly onto Lawrence Street, with a large former flax mill (now used for storage) to the rear of the property. Trenches 1 and 3 were located in a yard to the east of the former flax mill. Trench 2 was in a small yard bordered to the north, south and east by the former flax mill and to the west by a substantial property boundary wall. Trench 4 was located inside one of the shops fronting onto Lawrence Street (Figure 2). The ground surface was at c.13.41m Above Ordnance Datum (AOD) at the northern end of the site and at c.14.40m AOD at the southern end.

4. ARCHAEOLOGICAL, CARTOGRAPHIC AND HISTORICAL BACKGROUND

4.1 Archaeological investigations within the vicinity (Figure 3)

The site lies adjacent to the line of a Roman road running east from York, and is located between the medieval parish church of St Lawrence and Walmgate Bar on the medieval city walls. A number of archaeological investigations have taken place close to site most notably at Lawrence Street/Foss Islands Road (accession code 1989.8), 17-19 Barbican Road (accession code 1996.172), and the Rose and Crown public house (accession code 1977.1009). In addition a large number of watching briefs carried out by York Archaeological Trust have taken place in the vicinity (accession numbers 1979.1021, 1983.29, 1985.1004, 1985.1015, 1985.1018, 1985.1044, 1986.1019, 1987.1008, 1986.1024, 1989.27, 1989.1027, 1989.1030, 1994.0174, 1995.0285 and 1995.0263). Evidence from these investigations is discussed below on a period by period basis.

4.1.1 Prehistoric period (to 1st century AD)

No finds or activity dating to the prehistoric period have been discovered in the immediate vicinity of the development site.

4.1.2 Roman period (1st to 5th centuries AD)

The site is located c.900m to the south-east of the Roman legionary fortress, and lies between a number of major Roman roads (RCHM 1962, Fig. 2 and Ordnance Survey 1988). The major Roman road leading eastwards towards Brough was immediately adjacent to the northern edge of the site (RCHM 1962, 1, Road 2). This road was observed in 1954 c.1.8m below the modern road, approximately 90m east of Walmgate Bar, where it consisted of cobbles set in. This road divided into two, with one branch continuing to the gate on the south-eastern side of the fortress, and the second branch of the road skirting around the southern and western sides of the fortress.

The junction between these two branches is presumed to be located very close to the north-western side of the evaluation site.

Roman burials were usually located alongside major Roman roads, and evidence for burials has been located in the area. A Roman carved tombstone drawn by Francis Drake was built into the wall of St Lawrence's churchyard in the 18th century and probably came from a nearby burial. In 1906 a tile tomb covering a skeleton accompanied by a Samian vessel was discovered on premises belonging to Shafto's Brickworks in James Street (RCHM 1962, 70).

Much of the area seems to have been used primarily for agriculture but a number of other features have been found. Undated cobble surfaces interpreted as Roman were observed at 40 Belle Vue Street (YAT 1994.0174). Lawrence Street/Foss Islands Road (YAT 1989.8) produced Roman remains of two phases, the earliest of which consisted of two large clay extraction pits together with pottery wasters suggesting that kilns were located nearby. The second phase consisted of a cobble surface, ditch and dumped deposit. At the site of the old Cattle Market, Paragon Street (YAT 1973.12) two Romano-British field boundary ditches were located, while at the Old Bus Depot site (YAT 1996.172) the land seems to have been largely unused except for possible occasional pit digging.

4.1.3 Anglo-Saxon and Anglo-Scandinavian periods (5th-11th centuries)

A number of features of this date have come to light in the immediate area. A 7-8th century cemetery exists to the south of the site at Lamel Hill. This was first uncovered in 1847 when 20 to 30 skeletons and a number of metal finds interpreted as coffin fittings were located. A further 38 inhumation burials, associated with an example of a distinctive type of Anglian knife and a single sherd of Anglian pottery, were subsequently located (YAT 1983.31). A stray box of human bone fragments found at The Rise, Belle Vue Terrace (YAT 1983.29) may also represent Anglian burials disturbed when The Rise was constructed in 1838.

The excavations at Lawrence Street/Foss Islands Road (YAT 1989.8) uncovered a feature interpreted as a palisade trench of 10-11th century date associated with several rubbish pits, and two 11-12th century post-built structures separated by a fence. Unfortunately later ploughing had destroyed the occupation levels associated with these buildings. At the site of the old Cattle Market on Paragon Street (YAT 1973.12) there was a well, which had been backfilled with burnt daub, presumably from nearby structures, and domestic rubbish including 8th century coins and an enamelled cross-brooch. Nothing of Anglo-Saxon and Anglo-Scandinavian date was found at the Old Bus Depot site (YAT 1996.172) despite extensive stripping of the area.

4.1.4 Medieval period (11th-16th centuries)

The site is located just outside the medieval city walls on the south-eastern side of the city. The pattern of land use suggested by the medieval finds in the area suggests that there were buildings fronting onto Lawrence Street with open ground to the rear. A medieval building, pit and hearth were investigated at the Lawrence Street/Foss Islands Road site (YAT 1989.8), and medieval pottery

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was recovered from a site at the junction of Lawrence Street and James Street (YAT 1979.1021). The site of the Old Bus Depot (YAT 1996.172) produced evidence for a cobbled yard, plough soils and occasional deep pits which may have been for sand or clay extraction. Medieval plough-soils were noted at a site off James Street (YAT 1995.0285) and at the Cattle Market site (YAT 1973.12) which also yielded two large pits or wells. An investigation at the Rose and Crown pub (YAT 1995.0361) discovered two inhumations 1.40m below the present ground level, possibly of this period, believed to be associated with the lost church of St Edward.

4.1.5 Post-medieval period (16th-19th centuries)

A burial interpreted as a victim of the siege of York during the English Civil War was found at the Rose and Crown public house (YAT 1977.1009), and lead musket balls were found on the Old Bus Depot site (YAT 1996.172) which probably relate to this period. Other post-medieval remains in the area consisted of the cattle market with associated fencing (YAT 1973.12), post-medieval road surfaces at Heslington Road (YAT 1985.1044) and agricultural soils at both the Old Bus Depot site (1996.172) and Lawrence Street/Foss Islands Road (YAT 1989.8). Post-medieval deposits were observed 20 Barbican Road (YAT 1985.1004). A post-medieval token was found in a watching brief at 41-43 Heslington Road (YAT 1985.13).

4.1.6 Modern (19th-21st centuries)

Rapid development of the area occurred from the mid 19th century onwards, with a mixture of terraced housing and industrial premises being constructed. Many of these buildings still stand, and the buried remains of this period have been found on a number of sites in the vicinity.

Victorian remains were observed in watching briefs at 25 Wolsley Street (1986.1019) and 26a Heslington Road (1985.1018). A modern wall and drain were recorded at St Lawrence's Church Hall (YAT 1989.1027). Modern build-ups were found at the following sites: 68 Lawrence Street (YAT 1985.1015), the junction of Lawrence Street and Barbican Road (YAT 1991.1018), Kent Street Car Park (site code 1989.1030), 27 Heslington Road (site code 1995.0263), the Barbican Leisure Centre Bowling Green (site code 1989.27), 15 Farrar Street (site code 1987.1008) and 27 Wellington Street (1986.1024)

4.2 Cartographic Evidence.

The earliest map of York was published by John Speed in 1610 (Figure 4). This shows a small suburb outside Walmgate Bar, consisting of a continuous row of buildings lining either side of Lawrence Street, extending slightly beyond St Lawrence's church. There are then occasional buildings either side of Lawrence Street as far eastwards as St Nicholas's church. The area to the north and south of Lawrence Street is shown as open ground. Apart from Lawrence Street the only road in the area lies adjacent to the city walls between Walmgate and Fishergate Bars.

Subsequent maps of the area post-date the English Civil war. It is known from historical records (see below page 15/16) that the buildings of the Walmgate suburb suffered badly during the siege of York in 1644. The map produced by Benedict Horsley in 1694 (Figure 5) reflects this damage, and shows a pattern of large fields either side of Lawrence Street, the only buildings being St Lawrence's and St Nicholas's churches. Two other late 17th century maps (James Archer's map of 1682 (Figure 6) and Jacob Richard's map of 1685) show a different pattern of

land use to Benedict Horsley, having a series of properties with buildings fronting onto the street and linear gardens behind. The accuracy of these maps is questionable as they do not show St Lawrence's or St Nicholas' churches.

Later maps show that the pattern of land use depicted by Horsley continued throughout the 18th century. John Cossins' map of 1727 shows only St Lawrence's church in the area (this map does not extend as far east as St Nicholas's church). Drake's 1736 map of York suggests that at least part of the church of St Nicholas had been demolished, leaving only the tower standing (Figure 7). Ann Ward's map of 1785 shows an identical pattern of land to Drake.

Early 19th century maps show a number of buildings immediately outside Walmgate Bar. Unfortunately these maps do not extend as far as St Lawrence's church, so it is unclear how far eastwards the new buildings extended. Baine's map of 1822 shows a number of properties with rear yards/gardens to either side of Lawrence Street and extending along the Barbican Road (formerly Lawrence Row) frontage. The area of Paragon Street as far as Fishergate Bar is still depicted as open ground. By the time of R.H. Skaife's map of 1864 a building named the 'Ace House' had been built adjacent to Lawrence Row and the cattle market has been built on Paragon Street.

The Ordnance Survey 1:6500 map of 1849 depicts the Lawrence Street frontage developed for both housing and industry, with a timber yard to the north of Lawrence Street, and a Flax Mill, with reservoir on the south side of the street (on the site of the present archaeological evaluation). This pattern is shown in more detail on the OS map of 1852 (Figure 8). The 1907 Ordnance Survey map shows there had been a massive development in the area south of Lawrence Street. Wellington Street, Gordon Street, Willis Street and Wolsley Street had all been laid out with associated terraced housing. The Ace House had been replaced by a public house, and the plots of land to the south and south-east of the Ace House had been subdivided. A variety of buildings had been constructed in these sub-divisions including an auction mart. These plots were subsequently re-united when a bus depot was constructed. The pattern of land use remained largely unchanged, except that the flax mill became a warehouse, a school was constructed to the south of St Lawrence's church, and industrial works were constructed to the north of Lawrence Street (1963 OS 1:2500 map). The school and bus depot are now gone, and have been replaced by open ground and housing respectively.

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4.9 Historical Evidence.

The present Lawrence Street did not have had a specific name during the medieval period, and any buildings fronting the street were simply referred to as Walmgate or “Walmgate without the bar” (RCHM 1975, xxxviii). The area to the south of the city walls between Fishergate Bar and Walmgate Bar was referred to in the medieval period as the Bean Hills (Raine 1955, 298).

Four churches, those of St Lawrence, St Michael, St Edward, and St Nicholas, were located in the area in medieval times. The church of St Edward was on the north side of Lawrence Street, and was first mentioned in the 14th century, it had become redundant and was demolished in the reign of Edward VI, possibly by 1586 when it was united with St Nicholas (RCHM 1975, xxxviii). It is thought that the site of this church lies close to the junction of Lawrence Street and Lansdowne Terrace. Relatively little is known of St Michael’s church. It was in existence by 1279, but was clearly a poor parish, which was united with St Peter-le-willows in 1279, and then with St Lawrence’s parish in 1365 (VCH 1961, 385 and 397). Although St Michael’s does not survive Skaife’s map of 1864 suggests the church was located between Walmgate Bar and St Lawrence’s church.

The earliest reference to St Lawrence’s church was in 1185 (VCH 1961, 385 and 397). The church was subsequently badly damaged, as was much of the surrounding area, during the siege of York in 1644, but was repaired in 1669. A new church was built in 1881-3. The original medieval church was dismantled at this time except for the tower, and the 12th century door which was re-set into the base of the tower (RCHM 1975, 24-25). A number of views of the church before demolition still exist (Mee and Wilson, 1998) which show a 12th century nave with chancel of later date and 14th century windows.

The church of St Nicholas was probably founded c.1142 and served as both a parish church and chapel for an associated leper hospital. The earliest surviving fabric from the church is a door of 1180s or 1190s, (now located at St. Margaret’s church, Walmgate). The hospital of St. Nicholas, was the largest and richest of York’s four medieval leper hospitals. The hospital buildings were standing and in use as late as 1537/8, and although there is no further reference to the hospital, the church was retained for use by the parishioners. The church remained in use until the Civil War, when snipers used the tower. The tower was largely ruined during the siege of York (Daniell 1991, 16). Records state that the church “was disroffed by those enemies to churches and church government in 1644 at the time of the seige and has not been repaired since so that now you have nothing but the walls or outward shape of a curious pyle’ (Wenham 1994, 108). Masonry from the site is said to have been used to repair Walmgate Bar in 1648 and the church at Dunnington in 1717. Remains of the church were still standing in 1730 when it is recorded that stone from the site was used to make a pavement along Lawrence Street. A watercolour of 1718 attributed to Francis Place shows a nave, chancel, and substantial 13th century tower (RCHM 1975, xxxviii). The church did not survive beyond the mid 18th century.

Nothing is known of any secular buildings, which may have existed in the Walmgate suburb in the medieval or early post-medieval periods. It is, however, known that the area suffered extensive damage during the siege of York in 1644. The parliamentarians captured the Walmgate suburb together with a church and 80 prisoners. It is unclear if the church concerned was St Lawrence or St Nicholas, but whichever of the two, the church was probably being held by the royalists to add further protection to the city walls. Following the capture of the suburb a battery was set up in the grounds of St Lawrence’s church and the parliamentarian forces started to mine

under Walmgate Bar (Wenham 1994, 38). Both the Bar and St Lawrence's church were subsequently repaired.

All of the secular buildings recorded in RCHM 4 for Lawrence Street are of 18th or 19th century date. The most interesting of these, reflected in its Grade II listed status, is the former flax mill, located on the site of the present archaeological evaluation. This mill was built in several stages in the first half of the 19th century. The earliest part was referred to in 1817 as a 'newly erected fire-proof flax mill' with engine boiler house and a reservoir. The main interest in the building is in the extensive evidence of fire proofing techniques (RCHM 1975, 81).

5. THE EXCAVATIONS

5.1 Trench 1

The earliest deposit in Trench 1 was a waterlogged black silty-clay with frequent brick fragments and rubble (context 1005), which was located at between c.12.90m and c.13.40m AOD. The water-table was encountered at c.13.30m AOD. There was clearly a spring located in the north-eastern corner of the trench, as air bubbles could be seen rising through the standing water in this area. Sealing context 1005 was a dark brown silty-clay with frequent brick fragments and rubble (context 1004), the upper surface of which was at c.13.70m AOD. Context 1004 was below a deposit of crushed brick rubble up to 0.40m thick (context 1003) which was beneath reinforced concrete up to 0.23m thick (context 1002). Above context 1002 was the tarmac of the present yard surface (1001) which was at 14.40m AOD.

5.2 Trench 2 (Figure 9)

The earliest deposit in Trench 2 was a mid grey brown silty-clay with occasional grit, flecks of charcoal and mortar (context 2014). Context 2014 was beneath a very thick build up of clean dark brown-black moist silty-clay which was removed as two spits (contexts 2004 and 2013). Context 2013 contained 13-16th century tile and 17-18th century pottery. The upper surface of this build up was at 14.10m AOD.

Cutting into 2004 was a linear north-south aligned cut (context 2012), which contained a brick lined drain (context 2011). The drain was constructed from two differing sizes of bricks, which measured 20.5x16x10cm and 23x11x9cm in size, the larger bricks being used for the roof of the structure. The bricks were bonded with a hard cream coloured fine-grained mortar. Context 2011 was circular in cross-section at the extreme northern and southern ends of the trench, with an external diameter of 0.64m and an internal diameter of 0.54m. The central portion of the drain had a roof consisting of three sandstone slabs (context 2009) which measured 85x52x7cm, 90x55x7cm and 90x47x7cm in size respectively. It is unclear if these represented the original roof of the drain, or were a repair to a portion of the drain, which had collapsed. Drain 2011 had clearly gone out of use, as it was totally infilled internally with wet grey-black gritty silt with occasional limestone fragments, brick fragments and flecks of mortar (context 2010). Sealing 2009 and infilling 2012 was a yellow



Plate 1. West facing section of Trench 1



Plate 2. Trench 2 facing north on completion of excavation

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moderately compacted silty-clay with occasional flecks of mortar (context 2008). The upper surface of this feature was at 14.10m AOD.

Drain 2008-2012 was in turn cut on the western side by a second drainage cut (context 2007), which was again aligned north-south, but had two arms branching from the eastern side of the cut at the northern and southern ends of the trench. The cut contained a ceramic pipe bedded onto concrete (context 2006), and was backfilled with mid-dark brown silty-clay with frequent flecks of mortar, moderate flecks of tile, occasional fragments of tile and 19/20th century pottery (context 2005). The upper surface of this feature was at 14.11m AOD.

Sealing context 2005 was a surface of irregular sandstone blocks, which were on average 30x24x20cm in size (context 2004). There were large voids between the stones, and the uneven upper surface of the deposit was at between 14.21m AOD and 14.42m AOD. Modern pottery was found in the voids between the blocks, but this could have fallen from the deposit above.

Context 2004 was in turn beneath a dumped deposit of crushed brick up to 0.08m thick (context 2002), which was below coarse quarry stone coated with a tar binding up to 0.10m thick (context 2001). Both contexts 2002 and 2001 were clearly levelling deposits for the present concrete yard surface (context 2000) the upper surface of which was at 14.62m AOD.

5.3 Trench 3

The sequence of deposits in Trench 3 was almost identical to that seen in Trench 1. The earliest deposit was waterlogged black silty-clay with frequent brick fragments and rubble (context 3002), which was located at between c.13.24m and c.13.75m AOD. The water-table was encountered at c.13.30m AOD rendering further excavation impracticable. Sealing context 3002 was reinforced concrete up to 0.14m thick (context 3001). Above context 3001 was the tarmac of the present yard surface (context 3000) which was a 14.40m AOD.

5.4 Trench 4 (Figures 10,11 and 12)

The earliest deposit encountered in Trench 4 was natural sand with some iron panning (context 4033) the upper surface of which was at 12.41m AOD, just 0.70m below the present ground surface. Context 4033 was beneath a deposit of soft mid orange-brown mottled sand with very occasional flecks of mortar, tile and charcoal (context 4032), which contained 10th century pottery. This was in turn below a deposit of soft mid yellow-brown mottled sand with very occasional flecks of mortar, tile and charcoal (context 4029). The upper surface of 4029 was at 12.88m AOD.

Two dumped deposits sealed context 4029 in the eastern portion of the trench. The earliest of these (context 4026) consisted of dumped limestone blocks ranging from 0.16 x 0.12 x 0.08m to 0.38 x 0.20 x 0.12m in size, set in a matrix of soft mid yellow-brown sand with occasional cobbles, charcoal flecks, and mortar flecks. The deposit contained a single sherd of 15th century pottery, which could be residual. One of the limestone blocks (Architectural Fragment 1) had clearly originated from the jamb of a door or window of a 13-14th century church. The block had roughly dressed upper and lower faces (which would originally have been within the thickness of the wall) and five surviving dressed faces, which formed a vertical chamfer. Fine tooling lines,

up to 0.05mm apart and 0.05mm deep, were visible on these faces. The tool lines were in parallel draughts, which ran diagonally to the face of the block. This fragment is most likely to have originated from either St Michael's church or St Lawrence's church. Sealing context 4026 was a second dumped deposit (context 4008) which consisted of soft slightly grey-brown silty-sand with lenses of yellow brown sand and occasional flecks of charcoal, stones, brick and tile.

An isolated stake hole 0.10m in diameter and 0.20m deep (context 4041), cut into the upper surface of context 4029), was backfilled with mid brown slightly clayey silt (context 4040) Context 4040 was beneath dark brown moderately compacted slightly clayey silt with occasional cobbles and 13-16th century tile (context 4042). This deposit was only seen in section; it was removed by machine as part of context 4005.

Cutting into the upper surfaces of context 4042 and/or 4029 in the western portion of the trench were a number of post-holes (Contexts 4007, 4016, 4012, 4028, 4018, 4024, 4031, 4014, 4020, and 4010). There were very few direct stratigraphic links between these cuts, in addition to which no associated occupation surfaces survived, making interpretation difficult. It is possible that three of the post-holes (contexts 4014, 4012 and 4016) formed an alignment at right angles to the Lawrence Street frontage, which may have been one side of a timber-framed building. Post-holes 4007, 4024 and 4020 may form a second alignment, also at right angles to the Lawrence Street frontage, but this is less convincing given the very different scale of these three cuts.

Several of these cuts were undated (contexts 4041, 4007 and 4016), cut 4024 contained 13-16th century tile, context 4012 contained 10th century pottery, while the remaining cuts were all of 17th/18th century date. It is notable that all the cuts were in the western half of the trench, and they respected dumps 4026 and 4008, implying that the dumps and post-holes were broadly contemporary. This implies that everything in the trench was 17th century or later in date. The arrangement of the post-holes and dumps implies that any buildings on site were confined to the western portion of the trench, while the eastern portion was either open ground, or a rear yard behind a building fronting onto Lawrence Street.

Cut 4031 lay partly outside the area of excavation, so its precise size and shape are unknown, but it was at least 0.80m north-south, 0.56m east-west and 0.73m deep. It is unclear if this represented a large post-hole or small pit. Cut 4031 was filled with dark grey-black silty sand with lenses of clay and occasional flecks of mortar, charcoal, tile, limestone and bone (context 4030). Context 4030 was truncated by two further post-holes (contexts 4020 and 4014). Cut 4020 was partly outside the area of excavation, but measured 0.48m east-west and 0.20m north-south and was 0.11m deep, while cut 4014 was an oval shaped cut 0.50m x 0.18m in size and 0.17m deep. Post-hole 4020 was filled with dark grey-black silty sand with occasional fragments of pottery and tile (context 4019), and context 4014 was filled with dark brown-grey sandy silt with occasional cobbles, pottery, and brick and tile fragments (context 4013). Context 4013 was truncated by a circular post-hole (context 4010) which measured 0.39m in diameter and was 0.20m deep, and was backfilled with dark grey-black sandy silt with occasional fragments of mortar, charcoal and tile (context 4009).

Context 4028 was a post-hole 0.55m x 0.40m in size and 0.26m deep, filled with mid to dark brown silty sand with occasional fragments of charcoal, mortar and occasional cobbles (context 4027). Cutting context 4027 was a circular post-hole 0.50m in diameter and 0.15m deep (context

4018) which was backfilled with grey brown sand with very occasional mortar flecks (context 4017).

There were no direct stratigraphic links between the remaining post-holes excavated (contexts 4007, 4016, 4012 and 4024). Context 4007 was a circular cut 0.20m in diameter and 0.07m deep, which was backfilled with clean mid-dark brown sandy-silt with occasional fine grit (context 4006). Context 4012 was a sub-circular cut 0.40m x 0.35m in size and 0.25m deep filled with clean grey-brown sand with occasional mortar and stones (context 4011). Context 4016 was a circular cut 0.33m in diameter and 0.23m deep, backfilled with clean mid brown silty-sand with occasional tile flecks and charcoal flecks (context 4015). Context 4024 was a circular cut 0.60m in diameter and 0.32m deep filled with dark brown silty sand with occasional flecks of mortar, charcoal, pebbles, bone and 13 -16th century tile (context 4023).

All of the contexts described above were sealed by very compacted black gritty sandy silt with frequent mortar and brick fragments (context 4005). The sheer compaction of this deposit implied that it was deliberate levelling prior to the construction of a building, most probably the early 19th century linen manufactory.

Context 4005 was truncated on the northern side by a linear cut (context 4022) for a concrete beam of the present 1930's building (context 4025). The beam slot was filled with sandy silt deposits (contexts 4003, 4012, 4037, 4038, 4034 and 4035). Two separate fragments of a herringbone styled brick floor bedded on white mortar were found (contexts 4039 and 4004), one of which was clearly above the beam slot. The bricks within these floors were of mid to late 19th century date and were 0.23 x 0.15 x 0.05m in size. Context 4004 had what resembled a wheel rut on its upper surface (see Plate 4). These floors represent an earlier floor of the present 1930's building made from re-used bricks. The brick floor was sealed by a deposit of dark grey-black clayey silt and crushed brick (context 4002), which was in turn below poured concrete (context 4001). Contexts 4002 and 4001 were the levelling deposits beneath the present wooden parquet floor (context 4000).



Plate 3. North facing section of Trench 3



Plate 4. Trench 4 – context 4004 (facing west)

20-30 Lawrence Street, York

6. HISTORICAL BUILDING SURVEY by Colin Briden

6.1. Introduction

The Background to the study

This report describes and assesses the Lawrence Street Flax Mill, Lawrence Street, York. The purpose of the report is to guide refurbishment of the historic building: which appears at Grade II on the Statutory List of Buildings of Special Architectural or Historic Interest.

The former flax mill is situated on the south side of Lawrence Street about 200m SE of Walmgate bar at NGR SE 613 510 (Figure 1); the surviving buildings comprise a long range which is set out at right angles to the line of Lawrence Street and is separated from it by a more modern structure which was also investigated as part of this study. The mill is currently in use as a warehouse with built-in lightweight storage units occupying most of the available floor area at all levels. The street frontage building, which was erected in the 1930's as a showroom and sales area for W D Marks (hides and skins merchant), is disused (Site layout plan: Figure 13).

The buildings were investigated on the 25th and 26th June 2001. With the exception of the ground floor of the former boiler house, and in spite of the presence of the storage units, all areas of the mill were accessible – including lofts and roofspaces. It was not possible to get on top of the roofs but this would probably have added very little to an understanding of the building. The street frontage building was also fully inspected.

The investigation work was assisted by documentary research carried out in 1988 by the Royal Commission on Historical Monuments for England as part of the Yorkshire Textile Mills Survey. This work has been summarised in NMR File No 60732, which also includes a brief account of the fabric. However the greater access permitted during the current survey has led to the revision of some of the conclusions of the earlier work; these revisions will be noted in Section 3 below. The present report also includes an assessment of the architectural and industrial significance of the flax mill and an inventory of surviving historic detail.

The flax and linen branch of the Yorkshire textile industry

Since the processing of flax, a vegetable fibre, differs in some respects from that of wool – not least in terminology – it may be helpful to summarise here the various stages of manufacture of linen cloth. Not all of these processes took place at the Lawrence Street Mill.

Flax (*Linum usitatissimum*) is still a cash crop in the York area although now it is usually grown for linseed oil. It grows best in well-drained sandy loam. When densely planted for fibre production flax plants average 0.9m to 1.2m in height with branches concentrated at the top; cool moist seasons produce the best growth. The fibre is initially separated from the rest of the plant by *retting* or steeping the whole plant in water until the soft tissue rots to leave fibre strands; these measure about 300mm to 750mm long. The fibres are dried, *scutched* or beaten to remove chaff, and then *heckled* or drawn through iron combs. Flax, like worsted wool, must be combed to sort short fibres from long: short fibres (*tows*) were carded and used for poorer quality products while the long fibres (*line*) were sent for spinning. The yarn was usually bleached before being woven into cloth; finally the cloth itself was bleached and dyed.

Flax-spinning machines based on early spinning frames were patented by Kendrew and Porthouse in 1787 but it was not until 1808 that successful flax-heckling machines were introduced. Wet spinning, which allowed finer yarns to be spun, was introduced in 1825 – a date which has considerable significance for the Lawrence Street Mill – while the weavers were forced to wait until about 1835 for the application of water or steam power to their craft. Hence at Lawrence Street spinning was mechanised from the start, but heckling and weaving were not. Retting and dyeing, as will be seen, were carried on elsewhere.

In 1770 the major centre for flax production in Yorkshire was Nidderdale. With the subsequent application of steam power Leeds became pre-eminent but following a massive mid-century rise in mechanised cotton manufacture demand for the product fell away and the linen industry went into terminal decline. Many mills turned to rope manufacture based on the processing of hemp fibre or simply produced linen sewing yarns and a cheaper, poorer, cloth.

6.2 The history of the Lawrence Street mill

Textile production in Lawrence Street had its fair share of the fire and bankruptcy, which so enlivened 19th century industry; the changes in ownership, which inevitably followed such disasters, are still mirrored in the fabric of the mill buildings.

In 1804 Francis Stabler, Thomas Marshall, and George Marshall took a lease on a bleachworks and associated houses in Heslington. This is probably, though not certainly, the date at which they also built, as partners, the earliest surviving parts of the Lawrence Street Flax Mill. Stabler came from a long-established family of linen drapers with premises in Pavement; by 1809 the Stablers are listed in directories as manufacturers of linen as well as textile merchants. This presumably represents production of linen at the Lawrence Street premises with bleaching of both yarn and the finished cloth being carried out at the Heslington bleachworks. In 1814 the partnership was consolidated with the marriage of George Marshall to Ann, the eldest daughter of Francis Stabler; only two years later the partners were bankrupt. George and Ann's 'Valuable and Elegant household furniture' was put up for auction along with the mill and its associated buildings. The description of the latter in the 1816 advertisement is very specific:

All that Capital newly-erected fire-proof flax mill, with the engine and boiler-houses...the mill consists of three storeys of the length of ninety-nine feet, and of the breadth of thirty-two feet, and is built in a very substantial and complete manner. Immediately adjoining the mill is a spacious reservoir, affording an ample supply of water. Also a spacious linen manufactory, nearly adjoining the said mill, containing a great number of looms, heckling shops, flax, and other warehouses, tenements, chambers, counting houses and offices, all built on a most complete and useful scale, and forming together a spacious square.

From this it can be seen that although yarn was spun in the mill under steam power heckling and weaving were both carried on by hand in the buildings on the street frontage: which later appear in the 1850 OS Five feet to the Mile survey (Figure 15). Retting was evidently carried out elsewhere; as will be seen there is some reason to think that the retted fibres were delivered wet to the Lawrence Street mill for drying on site. The mill itself was evidently of fireproof construction. This is an important point since only one other fireproof mill – Benyons Mill at Holbeck, a flax mill of c.1802 – is certainly known to predate it in Yorkshire although fireproof construction is recorded at earlier dates from other areas of the country. The reservoir was

presumably spring-fed; in spite of the agents' enthusiastic description provision of water to thirsty boilers was always a problem in York and this was undoubtedly a major factor in the failure of the textile industry to establish itself in the City.

The mill and bleachworks were bought by John Swale, a flax-spinner. Under Swales' ownership cloth production appears to have been abandoned on the Lawrence Street site although the small warehouse was retained for storing yarn. The 'linen manufactory' was turned into thirteen small cottages, which are shown in detail in the 1850 survey. John Swale enlarged the mill adding, firstly, a warehouse to the north end of the Old Mill, as it became known, and, secondly, the New Mill, with internal end engine house and an attached boiler-house and stack, to the south end of the Old Mill (Figure 13). The stimulus for adding the New Mill may have been a fire, which is known to have broken out in 1825.

Contemporary accounts of the fire at the Old Mill make it clear that it started over the boiler house, which lay beyond the south gable of the building. From the newspaper description this boiler-house had drying-floors, probably made of perforated sheets of iron, over ground floor boilers and it is likely that by some accident the stored materials were ignited. The Old Mill itself escaped destruction thanks to the intervening south gable wall and the internal engine house at the south end of the mill, which together insulated the rest of the building from what must have been a fierce blaze. The fire was fought with water pumped from the reservoir. The burnt material was probably retted flax, brought here to dry before being spun, although interestingly the account also mentions yarn; suggesting that Swales may have been experimenting with wet spinning in the very year in which it was introduced.

Following the death of John Swales in 1851, and legal complications arising from the administration of his will, the Lawrence Street Flax Mill was put up for sale once more. The sale particulars of 1857 include an excellent plan (Figure 16) and it is possible from this to deduce the layout and function of all the major buildings, which existed on site at the time. These included the thirteen cottages converted from the linen manufactory of c.1804; the small warehouse of c.1804; the warehouse built by Swales in 1816-1825; the Old Mill of c.1804; the New Mill of 1825 with attached boiler-house and chimney; and a gas-holder. The latter is evidently part of the 'Gas Works' mentioned in the sale catalogue although the sites of the retort house and the purifier house which must have supplied it cannot now be identified. The first textile mill to be lit by gas was at Sowerby Bridge in 1805; the date of the plant at the Lawrence Street Mill is uncertain but it was probably installed by Swales as part of his expansion programme. The sale catalogue describes the boilers and the steam engine in some detail, as noted below, and also mentions two drying floors over the boiler house. Neither of these has survived. Subsidiary structures included a *Mechanics Shop* (probably the '*Smiths Shop*' of the plan), a *Weighing Machine* (shown on the 1850 OS sheet, and in maps and plans thereafter, as an open rectangle immediately to the east of the small warehouse of c.1804), a crane, a *good Counting House*, and a coach house and stable.

Nothing is known of the history of the mill and its buildings in the following decade or so but by 1872 it housed the firm of G Steward & Sons, comb makers. In 1901, after a brief period in the ownership of the Aberdeen Comb Works Company Limited, the mill was sold to W D, J, and T S Mark of Newcastle upon Tyne, hide and tallow brokers. The deeds were accompanied by a new plan (Figure 17).

The comb makers had little impact on the surviving buildings beyond the construction of an additional chimney over what had been a hoist shaft in the New Mill. Major alterations were however carried out to the Old Mill by W D Marks & Sons in c.1930. The company required extensive refrigeration facilities and to obtain them virtually the entire internal structure of the Old Mill was replaced in concrete and mild steel, which was then thickly insulated with cork. The full extent of this work cannot currently be ascertained but it seems highly unlikely that any of the fireproof structure noted in the 1816 advertisement has survived in this building. During this period the street frontage buildings – the thirteen cottages of the old linen manufactory of 1804 together with the small warehouse of the same date – were pulled down to be replaced by the present showroom; built to a design by F Dyer of 54 Coney Street York (Figure 18).

At some point after 1951 the reservoir was backfilled (Figure 19) while in c.1960 a new external stair was added to the north end of the Warehouse to a design by W Glover and Partners of Francis Street, London (Figure 20). Profiled asbestos sheeting has also replaced the original roof covering and the boiler-house chimney has been lowered to plinth level.

Subsequent alteration has for the most part been limited to enlargement of ground floor openings and insertion of lifts and other services. A modern lightweight shed has been constructed over most of the area of the former mill yard.

6.3. The development of the mill buildings

In the description, which follows the bays and roof trusses of each building are counted from the north.

6.3.1 Phase I The Old Mill c.1804

The Old Mill was built c.1804 as a steam-powered flax spinning mill. It is ten bays long and three storeys high, with a loft, and is constructed of a reddish-brown brick in an irregular Flemish bond with stone dressings (Figures 13 & 14). The quality of the workmanship is noticeably higher in the east elevation.

The roofing material is profiled asbestos sheeting. There is no decorative detail although the stonework of the window sills has a tooled finish of fine parallel bolster-work characteristic of the period. All the original openings have cambered brick heads; marking the bay intervals between the window openings at all levels, on both the east and west elevations, are single ashlar blocks which formerly took the thrust of the cast-iron beams of the fireproof internal structure. Three similar blocks are placed in the jambs of the only original doorway – in the ground floor of bay 1 of the east elevation – where they carry the pintles to the door. The doorway has a moulded timber architrave under a stone slab.

The original plan of the mill was very simple. In the north-east corner an internal fireproof stair rises through all floors to the second floor; thereafter a timber stair gave access to the loft space which was boarded out for storage. The south bays of the building – Bays 9 & 10 – formed an internal engine house which probably rose through the full height of the building while to the south of the mill was an attached boiler house; the position of the Phase I chimney is unknown. The internal structure presumably consisted of brick jack-arches springing off cast-iron beams supported on an axial line of cast-iron columns. Goods were brought into the mill through taking-in doors to each floor, which opened onto landings on the stair. Little or nothing now

remains of any of this detail; in particular the internal structure, as noted above, appears to have been completely stripped out in c.1930 during conversion to a cold store.

The fireproof stair retains some stone treads although many have been replaced, and the remainder repaired, in modern concrete. There are areas of original stone flagging to the ground and upper floors of the stairwell and a timber handrail to the stair. In the north wall of the stairwell are windows blocked when the adjoining Warehouse was constructed after 1822; these windows are set in deep segmental-headed embrasures with stone sills. A ground floor store cupboard under the stair – entered by a door with a glazed overlight – seems to be an original feature. Originally each flat of the mill was entered from the stair by a door at the east end of the south wall of the stairwell; the rest of the landing served as a loading bay to the taking-in doors in the east elevation. This arrangement has been obscured by modern alteration.

In Bays 9 & 10 there is evidence for an internal engine house. A shallow round-headed recess in the south wall of the ground floor marks the position of the flywheel; externally a change in sill height of the ground floor window to Bay 9 also implies a different function for this end of the building. Bay 10 has lost its window to an enlarged modern opening; nevertheless there seems little doubt that Bays 9 & 10 housed the beam engine which powered the first mill. A ragged joint at the south end of the east elevation – at the present junction between the Old Mill and the New Mill – marks the junction of the Old Mill with the boiler house which burned down in 1825 and which was subsequently demolished. The joint extends through the full height of the building confirming the contemporary description of a structure with two drying floors over the boilers themselves. Possible bearing boxes survive beneath the ground floor windows to Bays 7 & 8; their function, in this rather anomalous position, is unknown.

The second floor stairwell to the loft, the loft itself, and the roof structure underwent only very minor alteration in the 1930 reconstruction of the mill. The joinery of the stairwell to the loft is chiefly of the later period but the space retains a Phase I flagged floor and the jambs of a doorway from which the head has been removed; the floor of the loft also retains some wide boards of Phase I date. In the north gable a lunette window with splayed sill and keystone, blocked when the adjoining Warehouse was constructed, seems to have been the only source of light at this level; it resembles similar windows at Marshall's Mill, Holbeck, Leeds (c.1826-7). Above the window is a slight inward swelling in the brickwork indicating the position of a lost stack although no fireplace was seen on the floors below; the flue probably served a small overseer's office in the angle between the stairwell and the north gable wall.

The roof structure is typical of those in use over mill buildings throughout the 19th century. It consists of nine principal rafter trusses with tie-beams in cast-iron shoes, queen-posts, collars, and struts. The principal rafters are fixed to the heads of the queen-posts with bolted iron staples and the queen-posts are probably bolted to the tie-beams although this detail is not visible. Iron staples in the centre of each tie probably support intermediate floor joists although this could not be confirmed. There are triple tusked-and-tenoned side purlins and a ridge-piece; six additional modern purlins have been fixed to each pitch to carry the asbestos sheets of the present roof covering. A curiosity is a length of massive principal joist, probably from another building, which has been laid over the tie-beams to Trusses 1& 2 towards their west ends. This may be connected with an engine-mounting on the floor below, which presumably belongs to the 1930 reconstruction.

No sanitary arrangements were seen in the Old Mill but an area of external render to Bay 2 of the west – or rear – elevation may disguise the scars left by the removal of a privy tower. Other, later, alterations to the Old Mill not already noted include the blocking of large numbers of windows in red engineering brick to form the cold store in c.1930, the replacement of sills in concrete (particularly on the west elevation), and, in more recent times, the enlargement of several ground floor openings to form loading bays in the east elevation. The gutters are carried on modern concrete corbels.

Little is known of the reservoir although in the course of the present study part of the fill was excavated in archaeological evaluation trenches; these are described in section 5 above. It is likely to have been lined with brick and spring-fed in the south-east corner.

6.3.2 Phase II Warehouse 1816-1825

Although straight joints and blocked openings make it certain that the Warehouse was an addition to the north end of the Old Mill similarities in construction – particularly of the roof – and the archaic character of the cast-iron columns suggest that it was built by the same contractors as the Old Mill; indeed it is just possible that the building was added by Stabler and Marshall shortly before the bankruptcy of 1816 although it fails to appear on Baines' small-scale map of the City published in 1822. It was certainly in existence by 1825 since the technology of its construction is easily surpassed by that of the New Mill of that date.

The warehouse is five bays long and three storeys high with a loft space; the material is a reddish brown brick in Flemish bond with stone dressings. As in the Old Mill all the original openings are under cambered brick arches and the masonry carries fine parallel tooling. There is a doorway, with stone blocks to take pintle hinges, to Bay 3 (now blocked) and a wagon-entrance to a passage through the building to Bay 5. This passage has a segmental brick vault, which is crossed by wrought-iron tie-rods; one pintle, for a gate, survives at the west end. Simple cross-mullion windows, which may be original, or reflect the original design, fill some of the openings (Figures 13 & 14). On the north gable is the imprint of the south end, including the roofline, of the small warehouse of c.1804, which was demolished in 1930.

Comment [CB1]: are they?

Access to the upper floors is by way of the fireproof stair in the Old Mill. Internally the fireproof structure – which is confined to the ground and first floors – has survived complete at both levels. Cast-iron columns with small moulded caps and a marked entasis carry cast-iron beams from which spring brick jack-arches; these beams also support iron suspension brackets. The columns have D-shaped bolting heads – all to the east – although it is unlikely that power was ever transmitted to this building. The use of columns with such pronounced entasis is interesting since they would be hard to cast, especially if hollow; it may be that they were made locally by a York iron-founder. All are heavily corroded suggesting that the Warehouse may have been used to store retted, and still damp, flax. The iron tie-rods visible in the through-passage either do not pass through the building or – which is more likely – are embedded within the brick jack-arches. At second floor level all detail is obscured by modern offices.

The roof structure is identical to that of the Old Mill. Within the loft there are signs of internal partitions against the end walls but all these have now been removed, together with the floor boards, and a modern ceiling inserted to the floor below. As in the Old Mill there is a stack in the north gable; it presumably served a fireplace, now concealed, on the second floor.

Later alteration has been chiefly confined to the window openings where there is a good deal of plastic stone repair and several replacement sills. As in the Old Mill the modern gutters are supported by small concrete corbels.

6.3.3 Phase III The New Mill c.1825

This phase of work comprises the construction of a high mill, of an end engine house with an attached boiler house, and of a chimney. At some stage a gasworks was added although of this nothing now remains above ground.

The New Mill is four storeys high and thirteen bays long although at the south end the third floor oversails the internal engine house – which is only three storeys high – giving a total of fifteen bays at that level (Figures 13 & 14). The topmost floor was said in 1857 to contain a water cistern but the area was inaccessible at the time of this survey. The New Mill is a little wider than the Old Mill; this extra width was doubtless dictated by machinery requirements. In order to construct the mill it was first necessary to demolish the remains of the Phase I boiler-house at the south end of the Old Mill and the ragged joint between the two is still evident in the east elevation. The material is a brown brick in Flemish bond with stone dressings. As in the earlier buildings all the original openings have cambered brick arches and stone sills while the original roof covering has been replaced with profiled asbestos sheeting.

The fireproof structure of the three lower floors of the mill survives virtually complete. Parallel-sided cast-iron columns support transverse cast-iron beams from which spring brick jack-arches; longitudinal support is given by bay-length wrought-iron tension rods – six to each bay across the width of the mill – which pass through the transverse beams where they are secured with short tusks and iron tenons. The columns have simple moulded caps and bases and plain abaci and carry D-shaped bolting heads to the east; the south column on the ground and first floors also carries a bolting head to the north which implies that line shafting was carried out to the sides of the mill. At third floor level there is no fireproof construction: here slender, tapering, columns carry cast-iron shoes which are through-bolted to the tie-beam centres. Traces of light blue colourwash to the undersides of the brick jack arches may be the remnant of an early paint scheme.

The roof structure, which extends over the internal engine house, consists of principal rafter trusses with queen-posts, raking struts to the principal rafters, minor struts to the common rafters, and double trenched purlins. Some of the queen-posts are reused 18th century primary joists. Softwood is used throughout. There is no evidence that the roof space was ever utilised.

The plan of the mill closely resembles that of the Old Mill. There is a fireproof dog-leg stair with half-landings and an iron handrail in the north-east corner which was originally adjoined to the west by a hoist; hence there are no taking-in doors to the upper floors of the stairwell. Above the level of the Old Mill roof 16-pane sashes in the north wall lit a small lobby to the privy tower at the north end of the west elevation; one of these sashes survives although the other has been sealed by a chimney inserted into the building when it was converted into a factory for comb-making. Inside the privy tower at each level there are two small compartments which were inaccessible at the time of this survey. The compartments are lit by 4-pane tilting lights under timber lintels.

Joinery work within the mill is plain and workmanlike. Boarded doors hang in architraves enriched with a sunk quarter-round chamfer; a similar moulding is also applied to the lights of the windows, which additionally have a beaded edge-moulding to the architraves. Large numbers of windows survive intact and some, extraordinarily, retain panes of original obscured glass. All the windows were originally six-paned cross-mullioned timber lights with an opening casement to one side below the transom and a bottom-hung light to the diagonally opposite position above the transom. The opening lights were secured with iron turnbuckles some of which have also survived. A complete example in good condition, and which may also retain its original paint finish, can be seen at the head of the fireproof stair at third floor level. Very similar windows were used at Winker Green Mill, Armley (1833).

Evidence from blocked openings in the south wall adjoining the engine house shows that the mill had a centrally-placed upright shaft, working in bearing boxes in each floor, at the south end. This was presumably driven from the toothed flywheel by a first motion shaft driving bevel wheels. At ground floor level there is a heavy cast-iron framework which may have held these bevel gears and a blocked round-headed opening for the main bearing of the flywheel itself. There are wall boxes for the line shaft bearings while similar boxes in the north wall of the modern lift shaft, at the other end of the New Mill, probably show how power was transmitted to the Old Mill – and not without some difficulty, given the marked difference in floor-to-ceiling heights.

Alteration to the New Mill has not been extensive. Some of the windows have lost their secondary glazing bars and ground floor openings have been enlarged to take modern loading doors. A modern spiral stair, rising from the first to the third floors, has been inserted at the south end of the building. The roof structure has been reinforced with steel fitch plates.

The Engine House is contained within the south end of the New Mill; its irregular plan is dictated by earlier property boundaries to the south. As noted above it is three storeys high and is therefore oversailed by the topmost floor of the New Mill. It is built, not surprisingly, of the same brick as the New Mill. At the bottom of the south elevation the brickwork is laid in Flemish bond but then enters a long period of uncertainty before re-emerging in an irregular English Garden wall bond higher up.

In 1857, when the mill was sold, the engine was described in the sale catalogue in some detail:

Superior Condensing Steam Engine, 70-horse power, with 46-inch cylinder, 7 feet stroke, and made by Messrs. WHITHAM of Kirkstall...

In the north wall of the engine house at ground floor level there is a shallow round-headed embrasure about 8m in diameter for the flywheel; the back of the embrasure is heavily scored suggesting that at least one spectacular accident has taken place here. The first floor structure is an insertion, in concrete, of c.1930 while the second floor is the infilled beam floor. The structure of the beam floor includes a set of complex bolting faces and the entablature beam; the latter retains the pierced lugs for fixing the pair of cast-iron columns, now lost, which supported it. The upper surface of the beam floor is modern and obscures the fixings for the main bearing. The third floor is carried on cast-iron joists with ring-bolts for lifting gear. Minor details in the engine house include rows of small stone corbels with sunk-panelled faces at the west end (these may have carried an internal stair to the beam floor) and a wall-box for a bearing in the north

wall. There is a large external taking-in door to the south wall and a blocked window in the east wall.

In 1857 the *Boiler-house* contained three boilers, three hopper fire feeders and fire boxes, and steam piping to the steam engine. Above this there were two drying floors – probably of pierced iron plates. None of these details appears to have survived although the ground floor was inaccessible at the time of this survey. Externally only one of the three round-headed brick arches to the north elevation still exists, though blocked.

So far as can be judged the boiler-house was entirely typical of its period. It is constructed of brown brick in a 3+1 English Garden Wall bond while the roof is very similar to that over the New Mill but much more lightly built. Some of the joints are individually numbered according to a system that defies interpretation but the trusses themselves are not numbered. Downward deflection in the slender tie beams graphically indicates the purpose of the bolted queen-posts. Much of the interior seems to have been rebuilt in concrete and steel in c.1930.

The bricklayers seem to have had some fun with the *Chimney*; little more than the tall, square-sectioned base survives and of this the south face is in English bond, the west face in a very variable Flemish bond, and the east face in a rough English bond. There is a brick cornice and eight courses or so of the capped octagonal shaft. The boiler house walls make straight joints against it showing that the boiler house is of later date; but presumably not very much later.

In the strip of land to the west of the Old Mill and the New Mill an extension was made to each building. The extension to the Old Mill, reached by a cambered brick arch from the older structure, has been modernised and no historic features are now visible. The building to the east of the New Mill, which does not appear in its present form on a deed plan of 1928, is on an irregular plan and incorporates plain cast-iron columns, with webs to the caps but no bolting heads, supporting a curious roof with a bolted king-post truss at the north end and steadily expanding queen-post trusses to the south as the site widens. It may originally have had a rooflight.

6.3.4 The street frontage building

The linen manufactory and heckling sheds – converted, after 1816, to cottages – and the small warehouse abutted by the large Warehouse of 1816-1825 were all demolished in c.1930 to make way for the present structure. This was designed by F Dyer of 54 Coney Street as a showroom for the products of W D Mark and Sons (Figure 18).

The building is of red engineering brick and has iron-framed windows and a concrete and steel internal structure incorporating some cast-iron columns. The front range has a flat concrete roof but at the rear of the building a single double-pitched roof over a minor range houses the electrical machinery for a large, counterweighted, goods hoist made by Gimson and Co. of Leicester. This served the open-plan first floor where presumably the firm's products could be laid out. The first floor was also reached by a stone stair with iron stick balusters and an iron handrail. The detailing is limited and conventional; only the hoist has any interest.

In 1960 the same firm added a new external stair tower to the north wall of the Warehouse. This has even less to recommend it.

6.4 Assessment

There are a number of cogent reasons for regarding the surviving historic fabric and detailing of the Lawrence Street Flax Mill as being of more than local importance.

The Old Mill was one of the earliest fireproof mills in Yorkshire: only Benyon's Mill, Holbeck, of 1802-3, certainly predates it.

In the first decade of its working life the Lawrence Street Flax Mill was the centre of fully integrated textile production which included the use of a remote bleachworks in the same ownership.

The fireproof Warehouse of 1816-25 survives with very little alteration and incorporates in its structure cast-iron columns of unusual and archaic design.

The New Mill, also very little altered, retains a virtually intact fireproof structure and considerable evidence for power arrangements.

The Engine House retains all the principal structural components of a beam engine installation including the entablature beam, beam floor, and flywheel embrasure. Taken together with the evidence from the New Mill it is possible to reconstruct almost in its entirety the power arrangements of an early 19th century textile mill.

Roof structures, joinery work, and other minor details survive in all areas of the mill. In particular the New Mill retains a large number of intact or only slightly altered windows of c.1825 many of which still contain contemporary obscured glass.

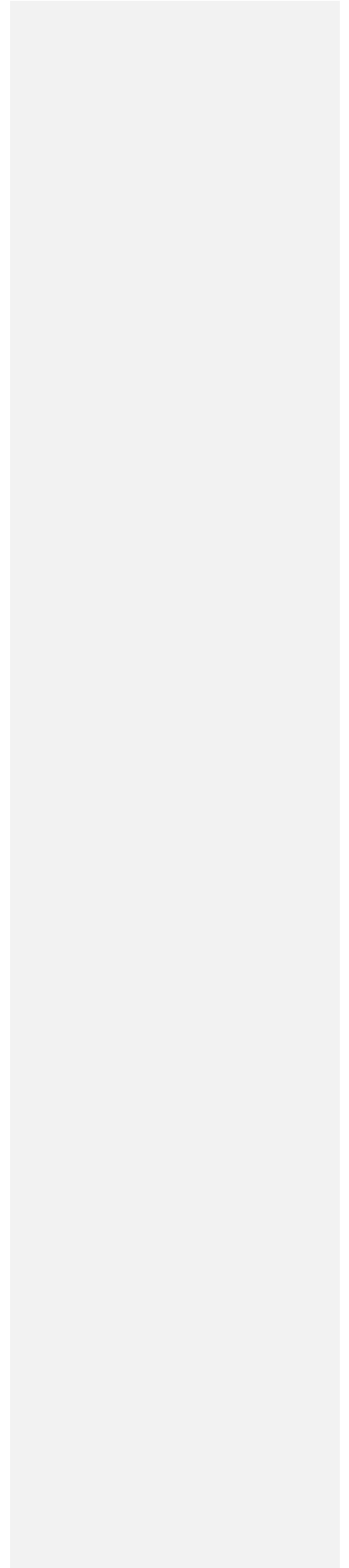
Inventory of historic features

<i>The Old Mill</i>		External elevations; brick and stone doorways to fireproof stair; lunette window; roof structure
<i>The Warehouse</i>		External elevations; fireproof structure including unusual cast-iron columns; roof structure
<i>The New Mill</i>		External elevations; fireproof structure; evidence for power arrangements including wall and floor boxes for bearings; joinery to doors and windows; original obscured glass to many windows; privy tower and 16-pane sash to lobby; roof structure
<i>Engine House</i>		External elevations; flywheel embrasure; entablature beam; beam floor; third floor joists with ring-bolts for lifting gear
<i>Boiler-house</i>		Surviving round-headed arch to east end of north elevation; roof structure
<i>Chimney</i>		Base; brick cornice; remains of shaft

In general it should also be borne in mind that a considerable amount of evidence for the technological history of the mill lies below ground level: where flues, water supply pipes, steam pipes, and gas-making apparatus may still survive.

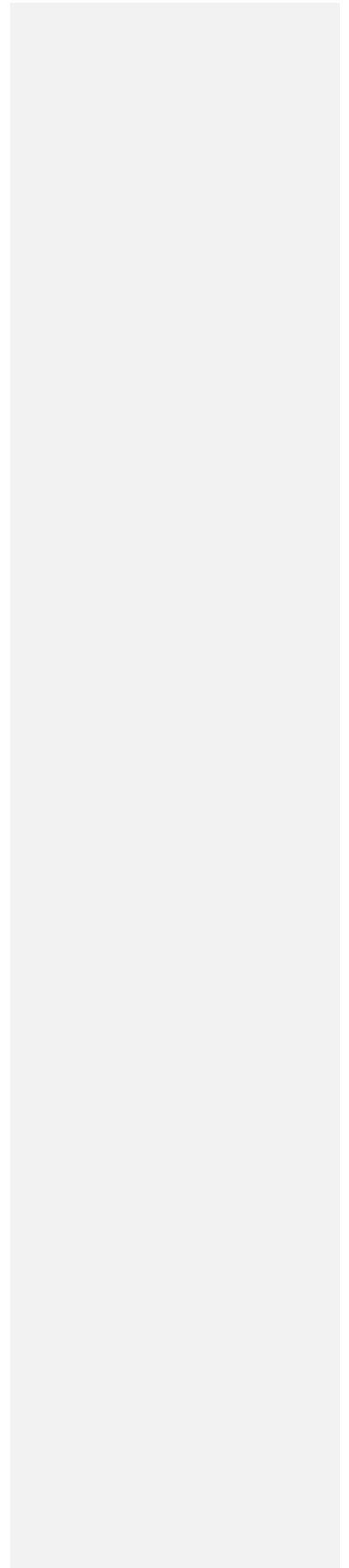
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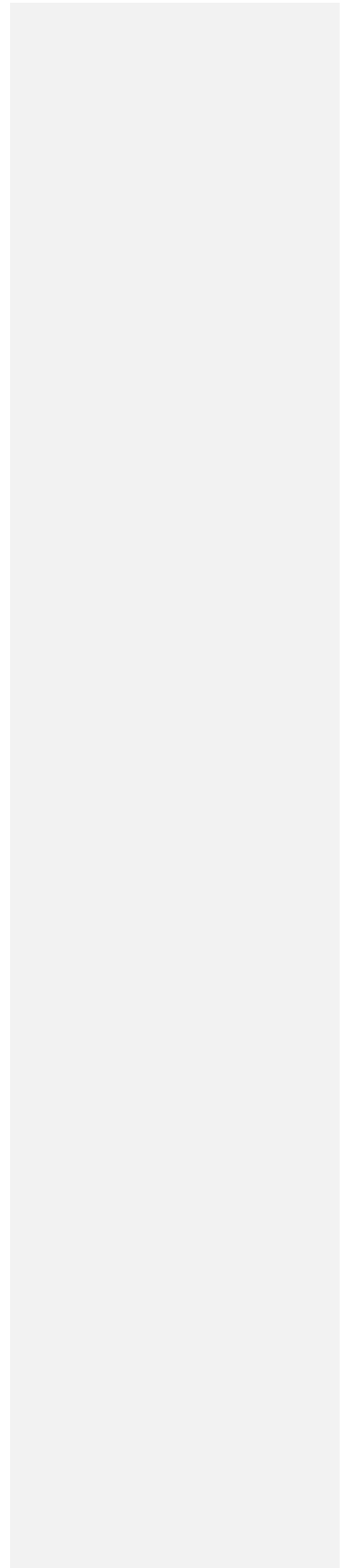
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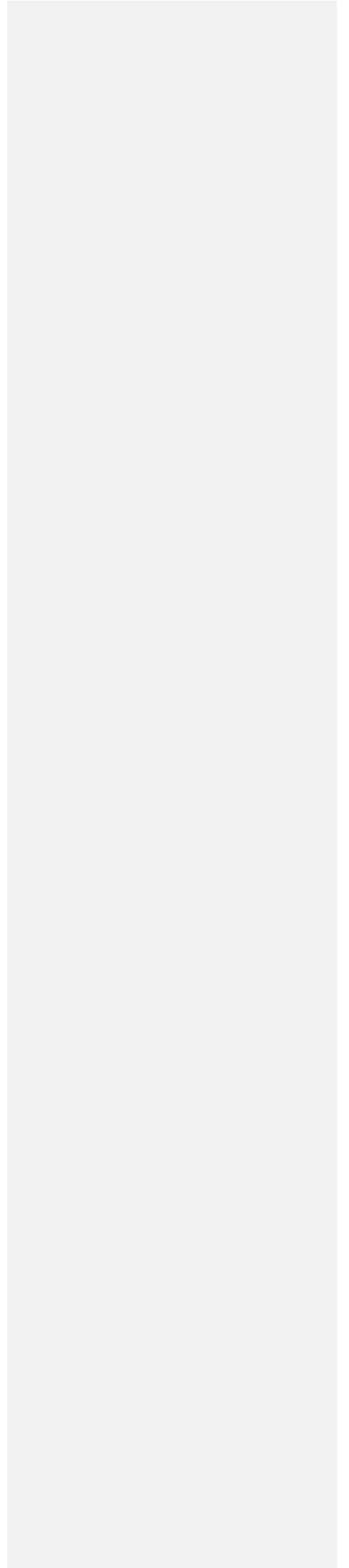
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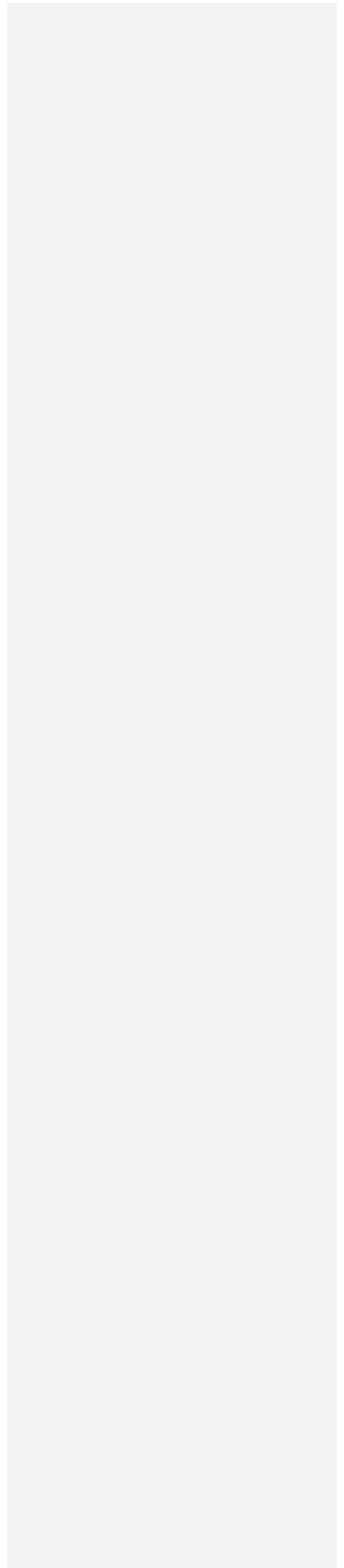
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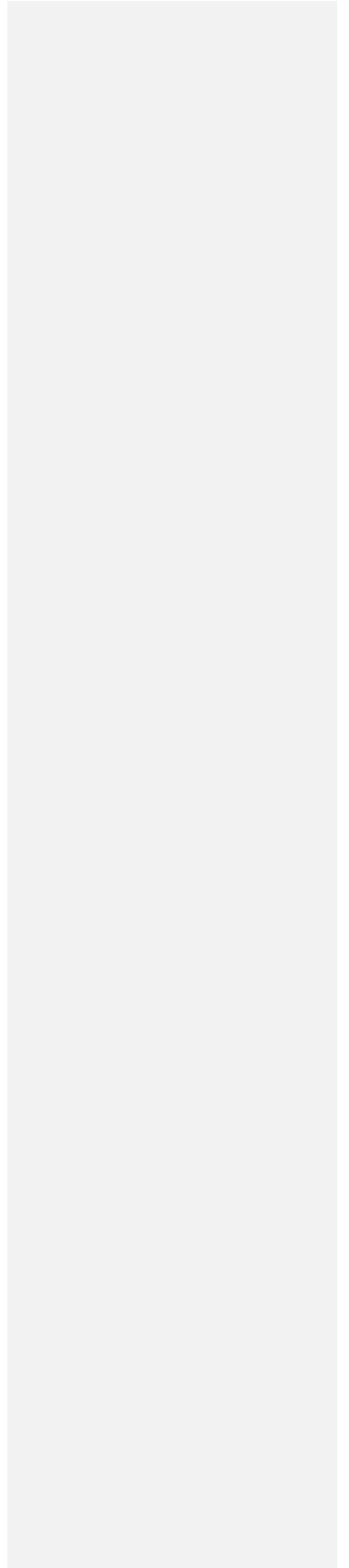
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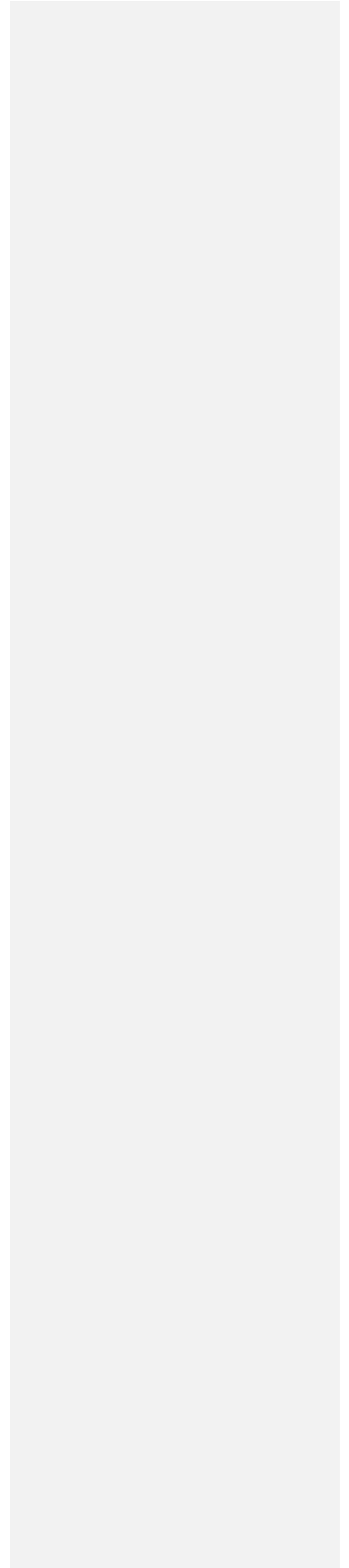
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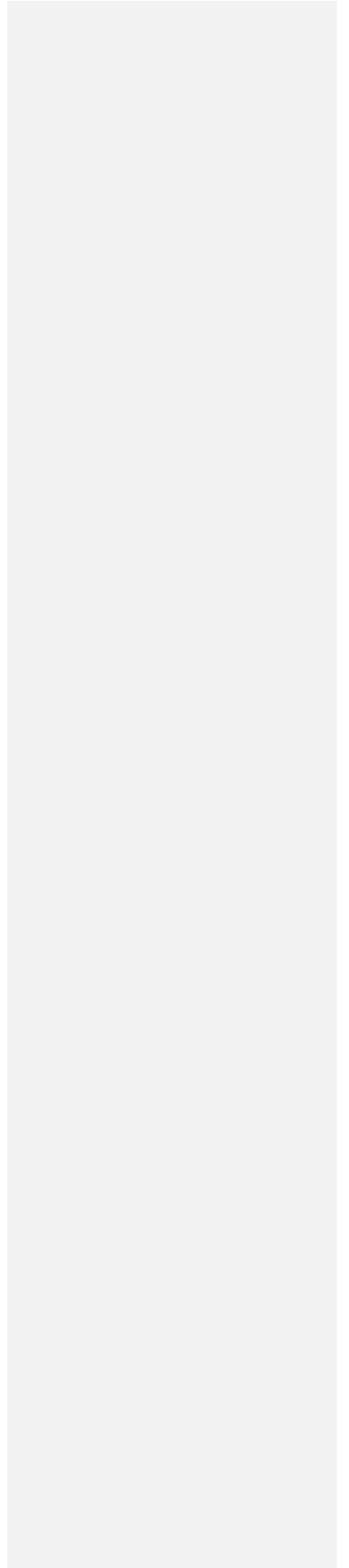




Plate 5 **Old Mill - doorway to fireproof stair**



Plate 6 Old Mill - cork-lined steel and concrete structure to first floor



Plate 7 Old Mill - treads to fireproof stair

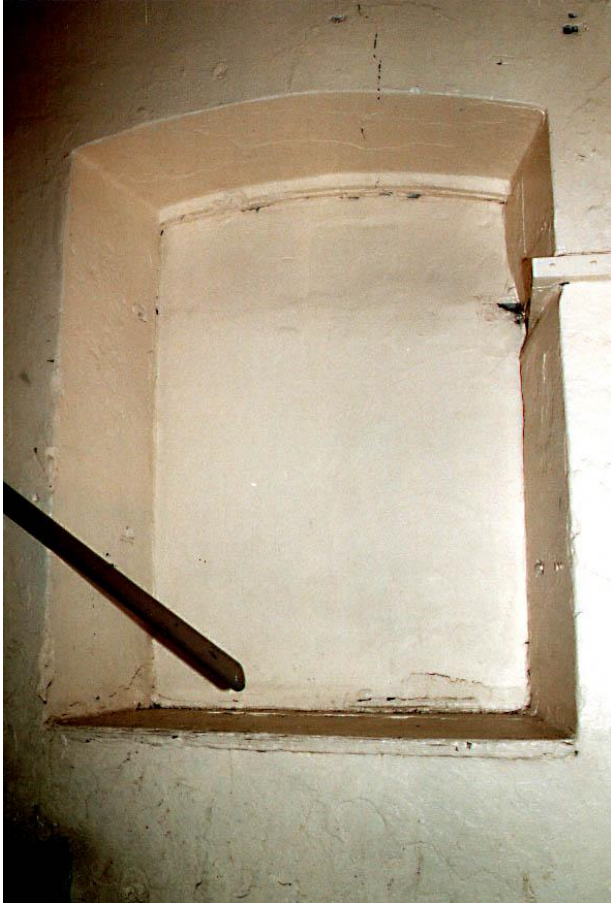


Plate 8 **Old Mill - blocked window to fireproof stair**



Plate 9 Old Mill - lunette window to north gable



Plate 10 Old Mill - Roof Truss



Plate 11 **Old Mill - Window**



Plate 12 Warehouse - View from NE



Plate 13 Warehouse - cast-iron column and bolting head



Plate 14 Warehouse - brick jack-arches



Plate 15 **New Mill - detail of fixing of tension rods**



Plate 16 **New Mill - cast-iron column**

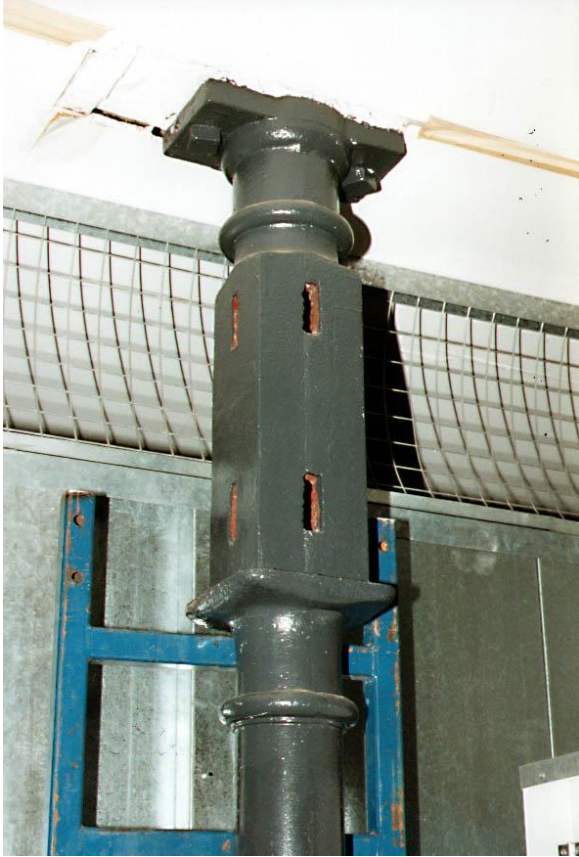


Plate 17 **New Mill - cast-iron column with double bolting head**

20-30 Lawrence Street, York



Plate 18 **New Mill - window with obscured glass**



Plate 19 New Mill - detail of fireproof structure



Plate 20 Engine House - Wall Box



Plate 21 Engine House - embrasure for flywheel on ground floor



Plate 22 Engine House - entablature beam and lugs



Plate 23 Engine House - cast iron joints and ring bolts for lifting gear



Plate 24 Engine House - corbels for internal stair



Plate 25 Engine House - detail of scoring of flywheel embrasure



Plate 26 Boiler House - roof



Plate 27 Boiler House - detail of truss to boiler house



Plate 28 Chimney from south-west



Plate 29 **New Mill - roof to extension to west of mill**

7. FINDS ASSESSMENT

7.1 The Pottery

context	no of sherds	Date	description
2004	3	Modern	
2005	3	19 th /20 th	tin glazed earthen wares, Black wares
2013	2	14 th ; 17/18 th	Brandsby, post medieval redware
4005	9	16 th -19 th	Cistercian ware, tin-glazed earthenware, Bellarmine, Brown glazed ware, scraps
4006	1	?	daub
4009	3	10 th ; 18/19 th	Torksey-type ware, Brown glazed ware
4011	2	10 th	Torksey-type ware and daub
4013	2	10 th ; 15 th	'd' ware, Walmgate ware
4019	3	10 th	Torksey-type ware, Stamford ware, crucible
4023	2	R	grey coarsewares
4026	1	15 th	Walmgate ware
4027	2	17 th ; modern	slipware, modern
4030	9	10 th ; 17/18 th	Stamford, Torksey-type, post med redware
4032	1	10 th	Torksey-type ware

Summary:

This is a small assemblage of pottery but contains interesting elements. There is little Roman pottery beyond a couple of coarseware sherds, which are difficult to date. There is material, which dates to the Anglo-Scandinavian period; the 'd'ware, the Torksey-type wares and the Stamford wares are typical of the 10th century and the crucible conforms with material of this date. These wares were found both together with later material but also in small numbers in contexts with no later pottery. Most sites in York produce at least one sherd of the Norman gritty wares but this is an exception. Following the Anglo-Scandinavian material there is no pottery earlier than post-medieval (with the exception of a single sherd of 14th century Brandsby-type ware and some Walmgate ware).

There was clearly Anglo-Scandinavian activity in the area, which is of interest as it extends the area known to have been occupied during the 10th century beyond the focus of the city centre, and into the suburbs.

7.2 Ceramic Building Materials.

7.2.1 Introduction

One large bag was submitted for examination. The material ranged in date from the medieval to the post-medieval period.

7.2.2 Medieval material

Medieval material is represented by plain roof tile. There is a fragment of plain tile from 4042, which has an indented border and a coarse fabric. Both these features point safely to a medieval date.

7.2.3 Post-medieval material

Post-medieval material comprises brick and roof tile. Pan tile came into use during the 17th century, and continues in use to the present day. There is also an example of plain roofing tile, which shows signs of refined manufacture, which is likely to be post-medieval, probably 18th century or later.

The brick in this sample shows several different traits. The brick from context 4004 is probably of local manufacture, as similar bricks have been found with stamps of known local brickmakers. Unfortunately, the shallow, sanded, frog does not show any stamp, but it is entirely possible that this brick came from one of the nearby brickyards close to Lawrence Street. It probably dates from the mid 19th century, up until the end of that century. The brick from 4000 clearly comes from outside York as it has a 'Howden' frog stamp. The fabric (white and gritty) may indicate a specialised use, such as for an oven of some kind. The measurements and manufacturing traits point to a late 19th to early 20th century date. The brick from 4003 is different again, having no frog, being sloop moulded and having a turning or bow mark. Its fabric is probably local, and judging by its measurements, the date is probably around 18th-19th centuries.

7.2.4 Conclusion

The sample is mostly post medieval in date, and has some interesting components. The brick in particular is worthy of further study, and would help contribute to the study of ceramic building materials usage and manufacture in York. Therefore, it is recommended that the sample be retained until such time as it can be studied in depth.

7.2.5 Context Listing Table

Key

Cxt = Context *L* = Complete length *B* = Complete breadth *T* = Complete Thickness

FH = Complete Flange Height *Date range* = date range of form *Date* = estimated date of context

* = only minimum measurement available

NB: This list indicates only forms present and any variations (such as slag attached, or paw prints). It does not list every fragment of CBM

Cxt	Form	L	B	T	Comments	Date range	Date
2013	Plain			13		13-16 th	13-16 th
4000	Brick	210	118	65	White, coarse gritty, stamped 'Howden'	L19 th +	L19 th +
4003	Brick	235	114	61	Worn, sloop moulded, bow/turning mark	18-19 th	18-19 th
4004	Brick	254	132	47	Shallow frog, no stamp discernible, sanded on frogged side, pressed?	mid-late 19 th	mid-late 19 th
4009	Brick				Fine sanding	16 th +	16 th +
4013	Brick				Sloop moulded, worn	16 th +	17 th +
4013	Pan					17 th	
4013	Plain			17		16 th +	
4023	Plain					13-16 th	13-16 th
4030	Pan					17 th +	17 th +
4042	Plain				Indented border	13-16 th	13-16 th

7.3 The Small Finds

A total of eight small finds were assessed; all the ironwork had been X-rayed.

7.3.1 Iron

This comprised two nails – sf1, c.4030 and sf6, c.4005

7.3.2 Glass

Vessel glass (sf4, c.4023), window glass (sf7, c.2004) and melted glass lumps (sf5, c.2005) were found; all appeared modern.

7.3.3 Fired clay

Sf3 c.4013 is a post-medieval tobacco pipe fragment

7.3.4 Flint

Sf2, c.4030 is an unworked fragment

7.3.5 Slag

Sf8, c.4013 comprises three fragments of slag.

7.3.6 Summary

This is a small and undistinguished assemblage with nothing that can be characterised as earlier than post-medieval.

7.4 CONSERVATION LABORATORY ASSESSMENT REPORT

7.4.1 Objectives

This report aims to meet the requirements of MAP2, Phase 3, Assessment of Potential for Analysis, (English Heritage, 1991). The work carried out has involved an X-radiographic investigation of selected finds, assessment of their condition, stability and suitability of their packaging for safe long-term storage. This report includes an evaluation of the potential of each group of material for further investigative conservation. There are recommendations for long term stabilisation, packaging and analytical or specialist support required.

7.4.2 Procedures

All the ironwork and slag was X-rayed using standard Y.A.T. procedures and equipment. The X-ray number was written on each bag and linked to the CIFR record. Each image on the X-ray was labelled with its small find number. The plates were packaged in acid-free archival envelopes and catalogued in the Online Photo Archive.

All categories of material were examined under a binocular microscope at X20 magnification as well as viewing the X-rays were they existed. The material identifications were checked and observations made about their condition and stability. Any technological information deduced from the X-rays and/or microscope examination was recorded on CIFR in the Conservation Work Record area and printed below.

7.4.3 Quantification

A total of 8 finds were assessed and 1 X-ray produced. The number of objects in each material category is listed below:

Tobacco pipe	1
--------------	---

Flint	1
Glass	3
Iron	2
Slag	1

7.4.4 Condition

Iron

The two iron objects were typical of iron from well-aerated burial conditions; displaying bulky corrosion crusts with no indication of waterlogged which would favour the preservation of organic materials. The iron was not desiccated when sent to the lab so a small sealed 'Stewart' box with a silica gel was used for re-packing. There is some evidence of active corrosion having occurred but both objects should remain stable if kept desiccated. The slag is of low iron content and should not deteriorate, especially if kept desiccated.

Glass

The glass was dry on arrival in the lab and appeared to have been lightly washed. These were loose in a large box so were re-packed with jiffy foam to stop them rattling around. All three fragments appear stable and suitable for long term storage.

7.4.5 Assessment

N. Rogers and E. Paterson viewed the finds and their X-rays in order to determine the potential for further research and investigative conservation in the light of the microscope examination and X-radiographic results. No recommendations were made for further investigative conservation.

X-RAY No.	FIND No.	Assessment Notes
5496	SF00001	Assessment notes: Iron nail. X-ray suggests patchy survival of the metal core with some disruption of surface detail. Covered in a bulky corrosion crust made up of soil and sand grains combined with hard, orange, brown and yellow iron corrosion products. Some white powdery spots of ?mortar are also present. One crack at the head end suggests some active corrosion has occurred. Keep dry <15% RH to prevent further activity. Suitable for long term storage in dry conditions. No further investigative conservation required.
--	SF00002	Assessment notes: Small flint fragment. Has been washed and is dry and stable. Suitable for long term storage. No further investigative conservation required.
--	SF00003	Assessment notes: Fragment of tobacco pipe stem. Has been washed and is dry and stable. Suitable for long term storage. No further investigative conservation required.
--	SF00004	Assessment notes: Fragment of bottle glass with an opaque brown surface corrosion. Washed, dry and stable. Suitable for long term storage. No further investigative conservation required.
--	SF00005	Assessment notes: 2 fragments of blue glass, the larger of the to appears to have been molten and is filled with air bubbles. Both have a thin iridescent corrosion layer on surface. Have been washed and are dry and stable. Suitable for long term storage. No further investigative conservation required.
5496	SF00006	Assessment notes: Iron nail. X-ray suggests limited survival of the metal core with some disruption of surface detail. Covered in a bulky corrosion crust made up of soil and sand grains combined with hard, orange and brown iron corrosion products and some pale powdery yellow iron ?sulphates. One crack at the head end suggests some active corrosion has occurred. Keep dry <15% RH to prevent further activity. Suitable for long term storage in dry conditions. No further investigative conservation required.
--	SF00007	Assessment notes: Fragment of clear window glass, ?modern. Covered

		in a very thin iridescent surface layer. Washed, dry and stable. Suitable for long term storage. No further investigative conservation required.
5496	SF00008	Assessment notes: 3 fragments of slag of relatively low density. Dry and stable. Suitable for long term storage under desiccated conditions. No further investigative conservation required.

7.4.6 Statement of Potential

The fragment of molten glass may indicate high temperature activity in the vicinity.

7.4.7 Recommendations

None of the assessed finds were identified for further investigative conservation.

7.4.8 Storage

Packaging

The finds have been packaged appropriately for long term storage. All materials used are archive stable and acid-free. Plastic bags have been pierced to allow airflow within microclimates, reducing the risk of condensation and mould growth. 'Jiffy', (polythene) foam inserts have been added to the bags to provide additional support and protect against mechanical damage during transit. Any replacement of packaging materials should be carried out in consultation with a conservator.

Maintaining the Micro-climates

The iron and slag are packaged in a polythene 'Stewart' box with a 100g bag of silica gel. The gel provides a dry microenvironment of less than 15% Relative Humidity which will halt any further corrosion, (Knight, 1992). Indicator strips at the front of each box and can be viewed through the plastic. **If any part of the strip turns pink the gel will need to be regenerated.** To prevent depletion of dry microclimates, the lid seals should be checked from time to time and care taken not to leave the box open for longer than necessary. Provided the silica gel system is maintained correctly, it will ensure long term protection of objects against active corrosion. The glass and other non-metal finds should be stored at 50-55% Relative humidity.

8. EVALUATION OF VERTEBRATE REMAINS

8.1 Summary

This report evaluates the potential of a small assemblage of hand-collected vertebrate remains recovered from deposits revealed by excavations at 20-30 Lawrence Street, York. The deposits that produced the bones were believed to be post-medieval in date. The small, and mainly well-preserved, vertebrate assemblage included the remains of cattle, caprovids and pigs, but there were insufficient fragments to be of any interpretative value. Further analysis of the vertebrate remains recovered from the current excavations is not warranted. In view of the good preservation of the bones, additional excavations may produce a moderate-sized and useful assemblage.

8.2 Introduction

An archaeological evaluation excavation was carried out by York Archaeological Trust at a site at 20-30 Lawrence Street, York (NGR SE 6113 5132), in July 2001. A third of a box of bone (approximately 7 litres) was recovered from the deposits. Dating information provided by the excavator suggested a post-medieval date for most of the deposits containing bone, with residual 10th century pottery noted from Contexts 4013, 4019 and 4030. Roman pottery recovered from Context 4023 was also thought to be residual. All of the material was submitted to the EAU for an evaluation of its bioarchaeological potential.

8.3 Methods

Data for the vertebrate remains were recorded electronically directly into a series of tables using a purpose-built input system and Paradox software. For each context subjective records were made of the state of preservation, colour of the fragments, and the appearance of broken surfaces ('angularity'). Additionally, where more than ten fragments were present, semi-quantitative information was recorded concerning fragment size, dog gnawing, burning, butchery and fresh breakage.

Where possible, fragments were identified to species or species group, using the reference collection at the EAU. Fragments not identifiable to species were grouped into categories: large mammal (assumed to be cattle, horse or large cervid), medium-sized mammal (assumed to be caprovid, pig or small cervid) and completely unidentifiable.

8.4 Results

Hand-collected vertebrate remains

Most of the small vertebrate assemblage from this site was recovered from six posthole fills in Trench 4 (Contexts 4005, 4013, 4019, 4023, 4027 and 4030), with only a single fragment from Trench 2 (Context 2013).

Preservation of the bones was generally fairly good, although a few poorly preserved fragments were noted from Context 4030. Material from this deposit tended to be rather fragmented and

also included several scorched bones. Colour of the fragments was fawn or brown with little variation within contexts. However, black mottling was observed on a few bones from Contexts 4005 and 4030.

The assemblage amounted to 67 fragments, of which 22 were identified to species. Context 4030 produced over 80% (55 fragments) of the bones. Remains of the usual domesticates (cattle, caprovid and pig) were identified and much of the unidentified fraction represented large and medium-sized mammal, probably mainly cattle and caprovid bones.

Material from Contexts 4023 and 4030 included a number of sheep crania that had been chopped longitudinally, presumably for removal of the brain. These skulls had also had their horncores deliberately removed. Few fragments of use for providing biometrical and age-at-death data were recovered.

8.5 Discussion and statement of potential

The small assemblage of vertebrate remains included primary butchery waste represented by caprovid crania and cattle mandible fragments. Preservation was reasonably good, but most of the deposits were rather broadly dated -the pottery spot dates spanning several hundred years. The presence of residual 10th century and Roman pottery sherds within several deposits also prevents the confident determination of the provenance and date of the bones. Additionally, both the size of the vertebrate assemblage and the small number of fragments providing biometrical and age-at-death information were insufficient for further analysis to be worthwhile.

8.6 Recommendations

No further work is recommended on the current material. However, vertebrate remains recovered from the deposits were mostly well preserved and, on the whole, did not appear to include redeposited material. It is likely that any larger-scale excavations in this area would produce a moderate-sized, and more interpretatively valuable, assemblage of bone.

8.7 Retention and disposal

All of the current material should be retained for the present.

8.8 Archive

All material is currently stored in the Environmental Archaeology Unit, University of York, along with paper and electronic records pertaining to the work described here.

9 CONCLUSIONS (including period by period analysis)

All of the deposits within Trenches 1, 2 and 3 were of post-medieval date, and therefore of relatively limited use in understanding the early history of the site. This meant that any attempts at interpreting this were confined to deposits seen in Trench 4. No prehistoric finds were recovered, but these would not have been expected. Two sherds of residual Roman pottery and abundant sherds of residual 10th century pottery clearly show that the area was in use during both these periods, but the exact nature of this land use is unclear. No dateable medieval deposits were found, implying that the street frontage had been levelled in the post-medieval period, effectively removing all traces of medieval activity. The evidence for post-medieval activity consisted of a build up of horticultural deposits in Trench 2, while along the street frontage there was evidence for both timber buildings and dumping. The modern period was well represented with evidence being recovered in all four trenches. In Trench 2 deposits relating to the construction of the flax mill were recovered. In Trench 4 deposits from the 1930's buildings were found, while in Trenches 1 and 3 deposits from the infilling of the flax mill's reservoir were recovered.

9.1 Period by period analysis

9.1.1 Prehistoric

There was no evidence for any activity of the prehistoric period from this site and none is known from this area of York. Should there be any remains of the period they are likely to be confined to casual losses of portable objects.

9.1.2 Roman (pre 1st - 5th centuries AD)

Only Trench 4 reached a depth at which Roman deposits were possible. Two sherds of residual Roman pottery were recovered perhaps reflecting some limited activity in the area.

9.1.3 Anglian and Anglo-Scandinavian (5th - 11th centuries AD)

Again only Trench 4 reached a depth at which Anglian or Anglo-Scandinavian deposits were possible. A quantity of 10th century pottery was recovered from the trench, but much of it was residual within later features. Some of the pottery was from disturbed natural (context 4032 and 4029), and it is possible the area was ploughed at this date. Apart from this none of the features within the trench could be firmly dated to the period, so the true nature of any activity in the area is unclear.

9.1.4 Medieval (11th - 16th centuries AD)

Only Trench 4 reached depths at which it was reasonable to expect archaeology of this period, however, no deposits of medieval date were found. The absence of medieval material implies that the site was deliberately levelled in the post-medieval period, and that this process removed all trace of medieval deposits on the Lawrence Street frontage.

9.1.5 Post-medieval (16th - 19th centuries AD)

Post-medieval deposits were present in both Trenches 2 and 4. In Trench 2 these consisted of a thick build up of horticultural type soils (contexts 2014, 2013 and 2004) implying that the area was largely open ground. In Trench 4 the eastern portion of the trench was used for dumping (contexts 4026 and 4008), while the western half of the trench contained a number of stake and post-holes (contexts 4006-4020, 4023-4024, 4027-4028, 4030-4031 and 4040-4042). The post-holes are probably all from 17/18th century buildings, which fronted onto Lawrence Street, with a yard or open space to the west. Unfortunately no deposits could be firmly dated to the period of the English Civil War, but remains of this period could exist elsewhere on the site.

9.1.6 Modern (19th - 21st centuries)

Modern activity was extensive on the site. In Trench 2 the deposits comprised sewers, drains and yard surfaces associated with the flax mill (contexts 2000-2012). In Trenches 1 and 3 the deposits consisted of the infilling of the flax mill reservoir during the 1950's (context 1005, 1004, 1003 and 3002), which was then capped with reinforced concrete (contexts 1002 and 3001). Sealing this were the present yard surfaces (contexts 1001 and 3000). It is clear from Trench 1 that the flax mill reservoir made use of a natural spring located in the area. In trench 4 the modern deposits consisted of a levelling dump (context 4005) sealed by a beam and floors associated with the present 1930's buildings (contexts 4000-4004, 4021-4022, 4025 and 4034-4039).

10. ARCHAEOLOGICAL IMPLICATIONS

Although there is documentary and archaeological evidence for considerable activity dating from the Roman period onwards in the general area, it appears that for the bulk of the proposed area of development there is little significant archaeology in the uppermost 1.50m of deposits (Trenches 1, 2, and 3). All of the deposits encountered in this area to a depth of c.1.50m consisted of featureless horticultural soils of post-medieval date or were contexts of modern date relating to the flax mill and to the present use of the site. Should the proposed development go no deeper than c.1.50m below the present ground surface in the area of Trenches 1, 2 and 3 then it is anticipated that little of archaeological significance will be disturbed.

The Lawrence Street frontage (Trench 4) was of more interest archaeologically. Natural deposits were recovered just 0.60m below ground level. Residual Roman and 10th century pottery recovered implies activity of these periods, but the precise nature of this activity is unclear. Any further work along the street frontage offers the potential to uncover more evidence of early land use in the area. The total absence of any medieval deposits within Trench 4 shows that considerable damage has been done to the area by post-medieval levelling. It is possible that medieval deposits may survive to the immediate south of the present 1930's buildings, given that the ground level is slightly higher in this area. Any large scale stripping of the interior of the 1930 street frontage buildings or of the areas immediately adjacent to them should at the very least be observed, as this could yield valuable evidence of the use of the land from the Roman to medieval periods.

It must be noted that only a very small part of the total area was sampled during the investigation and there is no guarantee that the results from the trenches give a complete picture of the archaeology of the site. A watching brief during any ground works should be undertaken during the development to enable the details of any archaeological remains disturbed to be recorded.

The flax mill and its associated buildings have been identified as being of more than local significance. The significant historical features are listed on pages 33 and 34 above.

11. LIST OF SOURCES

Daniell, C., 1994 *Documentary research* (Interim 19/1, 1994, 12-16)

English Heritage 1991, 'Management of Archaeological Projects'

Evans, D., 2001. *Former D C Cook Site, Lawrence Street, York, A Report on an Archaeological Evaluation*, York Archaeological Trust, 2001 Field Report 32

Geological Survey 1967, Geological Survey, England and Wales, Sheet 63, solid and drift

Knight, B. 1990, 'A Review of the Corrosion of Iron from Terrestrial Sites and the Problem of Post-Excavation Corrosion'. *The Conservator No. 14*, 37-43

Raine, A., 1955. *Medieval York*

RCHM, 1962, The City of York, Volume 1, Eburacum

RCHM, 1975, The City of York, Volume 4, North-East of the Ouse

VCH, 1961, A History of Yorkshire, The City of York. *Victoria County History*

Wenham, P., 1994, *The siege of York 1644*

Wilson, B. and Mee, F., 1998. The Medieval Parish Churches of York, The Pictorial Evidence *The Archaeology of York Volume 1*

YAT Gazetteer, 1997, *York Archaeological Trust*

12. LIST OF CONTRIBUTORS

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