

ARCHAEOLOGICAL REPORT

SCCAS REPORT No. 2009/237

Aviary Wall Recording, Abbey Gardens, Bury St Edmunds BSE 334

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1 Brief and Specification

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Summary

An archaeological study was undertaken of the 'Aviary Wall', in the Abbey Gardens, Bury St Edmunds. The wall is the remains of a range of monastic service buildings, constructed against the inside of the precinct wall within the medieval Abbey. The work included a drawn and photographic survey of each elevation of the wall and the hand-excavation of two test holes.

The surveyed section covers three distinct buildings at the east end of the range, although this is difficult to appreciate as all the internal walls have been removed, that included the bake and brewhouses. The buildings are well served by a variety of windows and openings distinguishing these industrial buildings from the stables and cowsheds which make up the rest of the range. A service range was first constructed along with the precinct wall in the first half of the 12th century but the brew and bakehouses date to the first half of the 13th century. The excavation demonstrates that part of the range, at least, had an undercroft or deeply sunken floor. This was filled in with a combination of demolition rubble from the destruction of the building during the Dissolution and the dumping of imported soil during the 18th and 20th centuries.

1. Introduction

An archaeological study was undertaken of the 'Aviary Wall' within the precinct of the medieval Abbey of St Edmund (Fig. 1); one of the pre-eminent and largest Benedictine houses in the country. The wall is part of the designated Scheduled Ancient Monument (Suffolk Monument 2). The wall currently forms the rear wall of the aviaries within the Abbey Gardens and the investigation in order to inform a programme of repair was prompted by localised failures of the wall surface. The study included a drawn and photographic survey of each elevation of the wall and the excavation of two, hand-dug tests holes. The archaeological work was completed in accordance with a Brief and Specification (Appendix 1), produced by Bob Carr (Suffolk County Council Archaeological Service Conservation Team) and with Scheduled Monument Consent. The fieldwork work was carried out during August 2009 and was funded by English Heritage.

2. Site location

The subject of the survey is the remains of the front wall of an extensive range of service buildings constructed as a lean-to against the inside of the Precinct north wall. The range of buildings ran from the Abbey Gate to the Abbot's Palace flanking the north side of the Abbey's Great Court and is described as the brew house and stables of the Abbot on Thomas Warren's map published in 1747 (Fig. 2). The survey recorded 60m metres of the wall from the refreshments kiosk to the junction with the rear of Alwyne Cottage in the gardener's compound. This is approximately 0.4 of the total length of c.140m of the complete run of the building range.

Architectural characteristics suggest a date of late 12th-early 13th century for the surveyed section, broadly contemporary with the construction of the precinct wall at this point.

The test holes were excavated against the rear of the of the aviary wall opposing the two areas of collapse.

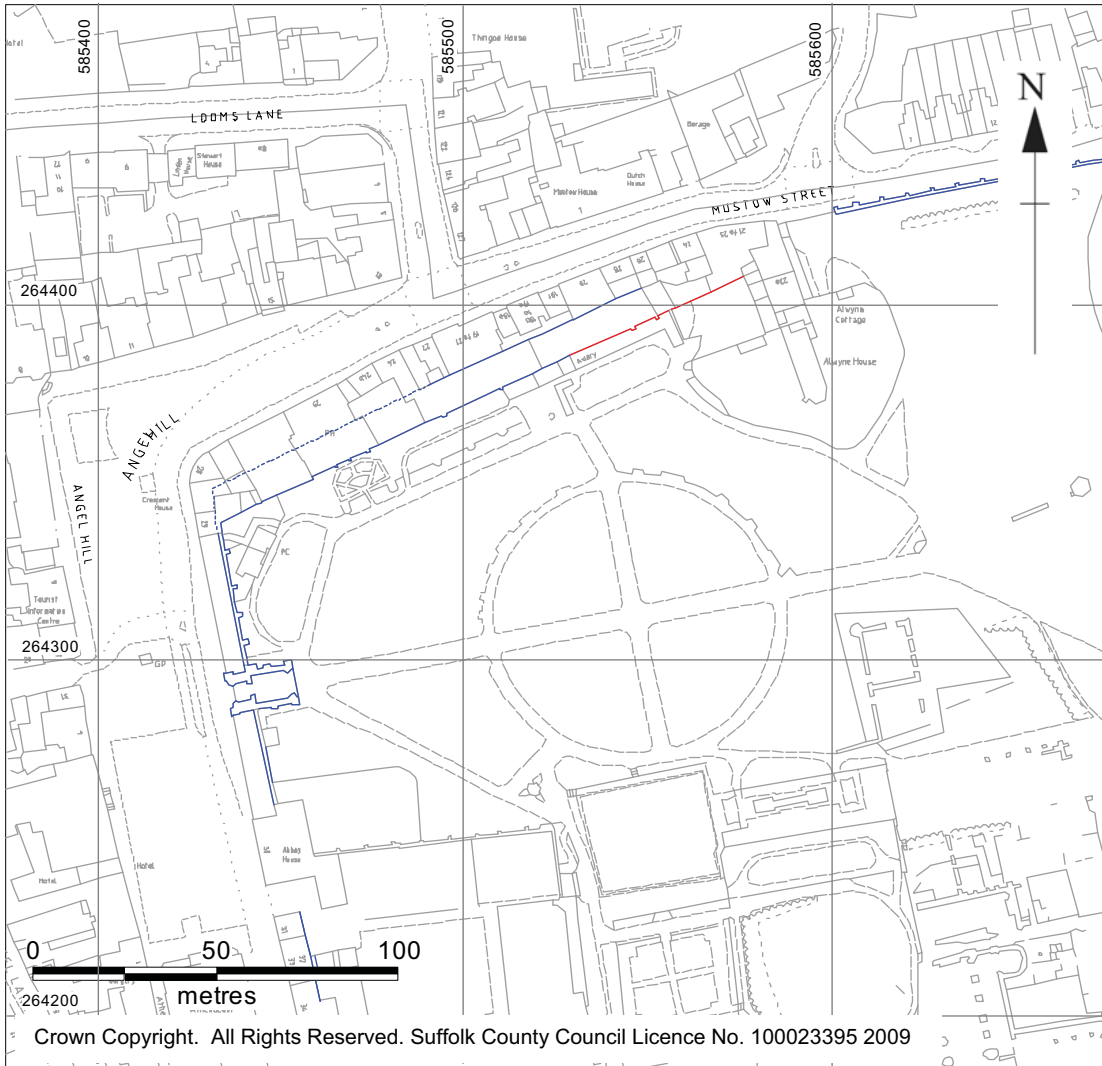
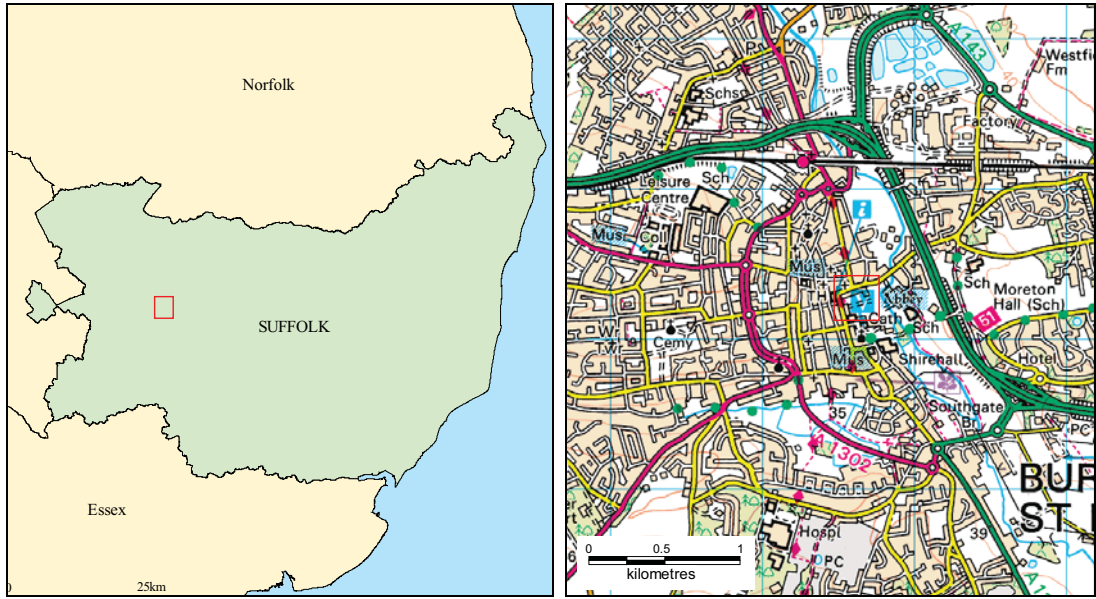


Figure 1.
Site location with the Precinct wall and service range shown in blue and the surveyed section in red

3. Archaeological and historical background

Abbot Baldwin (1065-97) began the planning and construction of the Abbey and town as we perceive them today. He seems to have been the originator of a strategic plan which re-designed the Abbey church, orientating the claustral ranges and urban gridded street pattern upon a common east-west axis.

A major change took place under Abbot Anselm when the area of the Abbey was extended and enclosed within a precinct wall, with access to the precinct controlled through gates. The north and south wall of the precinct was constructed under the supervision of Radulf Harvey sometime between 1120 and 1148.

In his chronicles of the Abbey written between 1190-1202, Jocelyn records that Abbot Samson ordered that the existing stables and out-buildings around the courtyard, which previously had been thatched, were to be tiled, thus ensuring that there would be no further fear of fire.

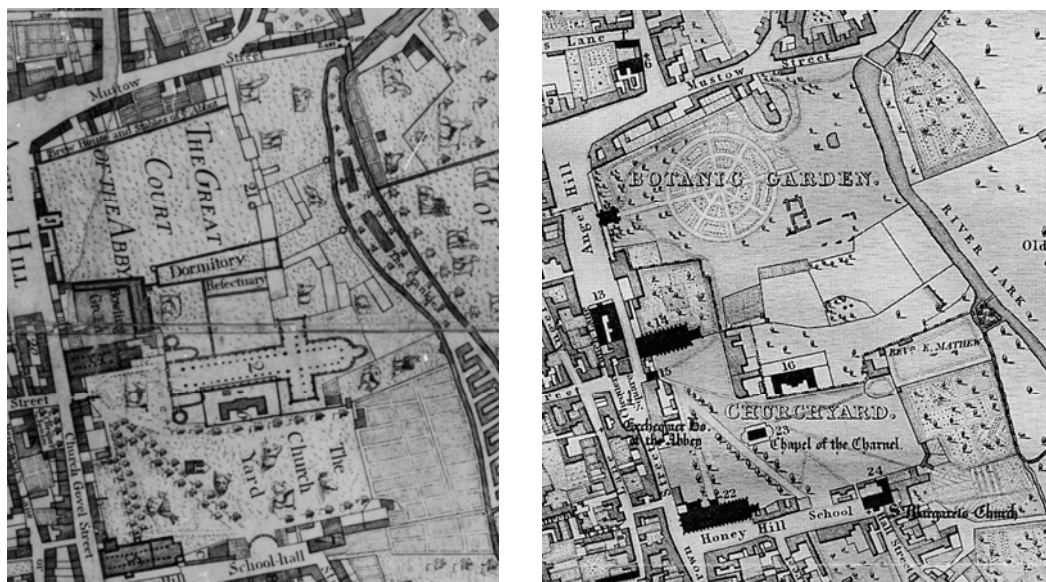


Figure 2.

Extracts from Warren's map of Bury 1742 (left) and Payne's map of 1823 showing the service range along the north edge of the Great Court

The Abbey was sacked during town riots and the Memorials of the Abbey record the damage to the buildings on Monday October 19th, 1327. The account lists the buildings in sequence from the abbey gate ...And they burnt

during that day and night and subsequent ones the great gates of the Abbey, doorkeepers and stables hands rooms, the common stables, cellarer's room and the Reeve's steward's and his clerk's kennel, oxstead, piggery, brewery, millbake house, hay store and abbots bake house... (Arnold 1892) and continues to list other buildings damaged on the south side of the court.

The Abbey as a whole was dissolved by Henry VIII in 1539. The ruins were acquired in the mid 18th century and became a garden area for Abbey House (on Angel Hill). By 1806 the entire complex had passed into the hands of the Bristol Estate (Statham 1988). In 1831 the botanical garden was laid out by Mr Hodson in the Great Court of the Abbey, although public access was not gained until the end of the century.

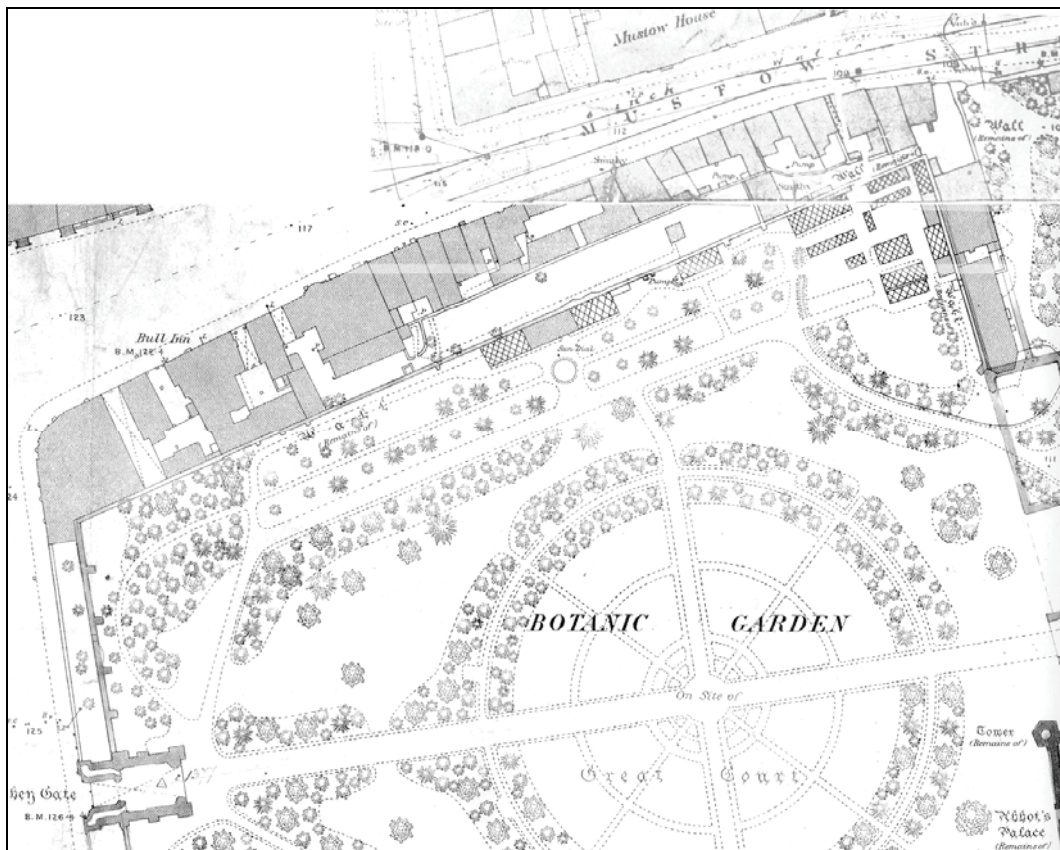


Figure 3. Extract from the 1:500 series 1st Edition Ordnance Survey 1855

4. Summary of results

Wall Survey

Methodology

The wall was surveyed using a Leica TCR 705 theodolite to produce measured drawings of each elevation and photographed using digital and medium format film camera. Surveying targets together with architectural features within the wall were used to reference the photographic and drawn surveys together. The survey drawings are shown in Figures 4, 5 and 6; architectural features were assigned a sequence of numbers for reference to the text and the wall is described below. The wall was recorded with the aviary furniture in place which obscured some of the surface.

Plan (Fig. 4)

The aviary wall was surveyed at the junction with the current ground level to produce the plan shown in Figure 4. The aviary wall parallels the precinct wall at an interval of c.7.9m. On the north side of the wall no part of the medieval wall face survives, apart from within the recesses of the windows, and it is difficult to be sure of how much of the wall's thickness has been lost. The wall, as planned, has a general breadth of around 0.95m, compared to c.1.05m for the precinct wall (measured across the south wall of the precinct) and, despite the absence of facing stone, the plane of the north side of the wall, can be surmised. There are places where the fabric projects forward of this general line and it is possible that these are the springing points of former internal partition walls. Two of these putative internal walls coincide with buttress positions (0031 and 0033) on the opposing south face. The suggested internal wall (based on buttresses and projecting masonry) are shown on the plan and the coincidence of these with the Mustow Street plot boundaries is notable.

Spot heights referenced to the OS were taken across the site and shown on the plan. These record a difference of c.0.9 - 1m between the ground levels either side of the wall in the area of the aviary and a 2m drop into the gardens at the rear of Nos. 24-26 Mustow Street, with the street level a further 0.4m below that.

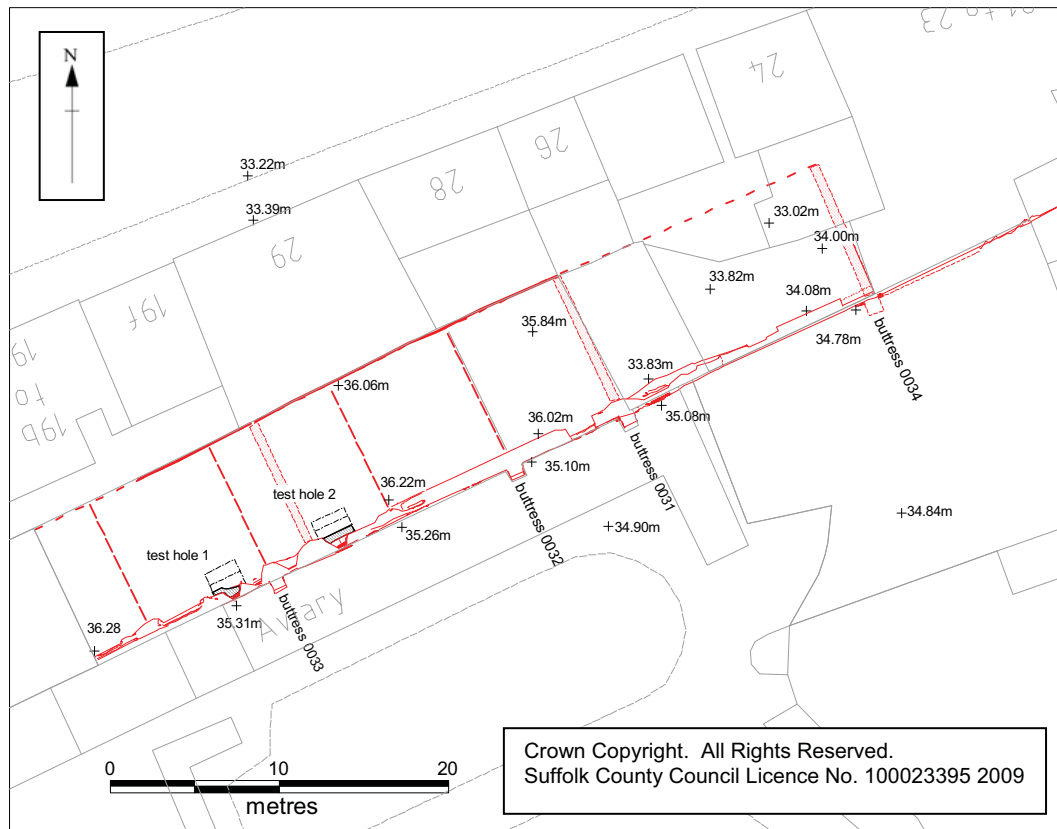


Figure 4. Surveyed plan of the wall.

Shaded bands show the suggested position of the walls between buildings and dotted lines possible internal partitions. The extent of the wall below ground is shown as the hatched area within test holes

South Elevation (Fig. 5)

The wall is 3.8-4.20m high from the current ground level and truncated at the level of window heads. The wall is constructed of bonded flint rubble core, faced with large, unworked flint nodules with occasional limestone fragments. The facing flints have been sorted with the largest cobbles being laid at the base of the wall. The limestone is in the form of unworked pieces of rubble and occurs generally above mid-wall height (but not exclusively so) and is most frequently seen in the wall fabric adjacent to the window surrounds. It is notable that the use of flint is more uniform across the lower half of the wall and generally the upper half is 'rubble' built.

Roof tiles occur repeatedly throughout the wall face and have been used extensively as pinnings to correct levels in the coursing; particularly at the start/end of lifts and the sills of the windows. They also seem to be used to cap lifts and this is most evident between window 0021 and buttress 0031 where the relationship between the putlocks and the tiles can be clearly seen

and show a lift height of 0.9m. There is some evidence of coursing to the flints in the lower part of the face which breaks down as the building rises. This is not the distinct coursing that characterises 12th century Norman work and which is evident on the precinct west wall.

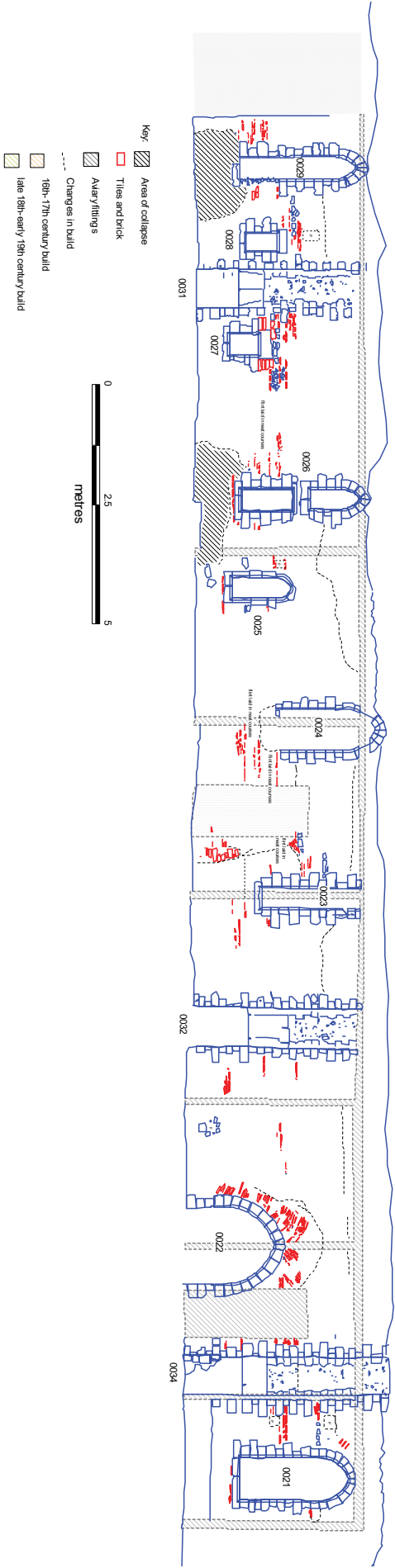
The pointing is in a coarse sandy lime mortar with <5mm grit size; it has the characteristics of, and is a good match for, medieval mortar and it is uncertain how much of this, if any, is original work. Where the pointing has blown, it can be seen to contrast to core material. The depth of the pointing (as it exists) is flush with the flint face and the face of the limestone surrounding the windows which would suggest that the building was not rendered although the inharmonious mix of fabric in the walls construction would indicate that the wall face as it is perceived today was not meant to be seen.

Buttresses

The recorded wall length is supported by five, full height, buttresses; these are constructed and completely faced with Barnack stone around a rubble core and keyed into the wall fabric with long-short work (Fig. 7a). They follow the same sloping stepped design suggesting that these are part of a single building or a single campaign of construction. In the wall to the west of the refreshments kiosk there is a variety of buttress styles including earlier short pilaster types.

The aviary wall buttresses are substantial and appear squat but this is due to them being part buried by a rise in the ground level. Comparison with similar styled buttresses elsewhere in the Abbey, where the change in the buttress face occurs at c.1.8m above the ground, suggests that the ground level south of the aviary wall has risen by about 0.5m. The buttresses are constructed within a sequence of paired buttresses spaced c.6.5m apart with an interval of c.14.5-15 m between the pairs; although the intervals are never exact. The spacing of the buttresses was determined by the internal layout of the buildings and, by extension, the position of the windows and doors. Where the remains are identifiable on the north face, the buttresses oppose the internal partition walls. The doors or gateways lie, eccentrically, between the paired buttresses.

W



continued

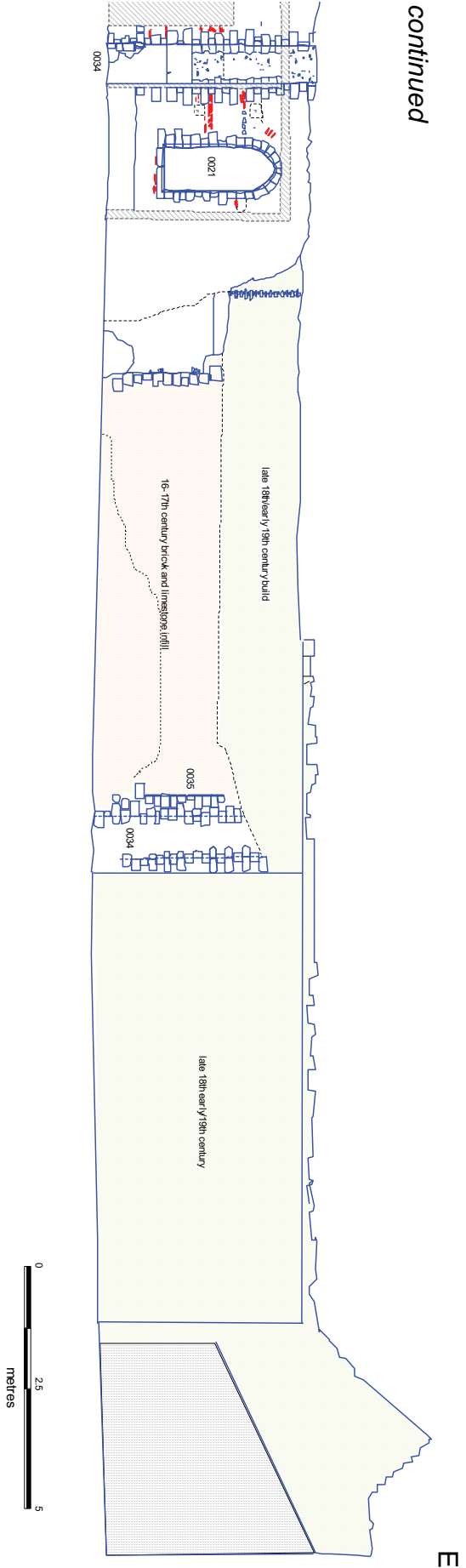


Figure 5. South elevation

E

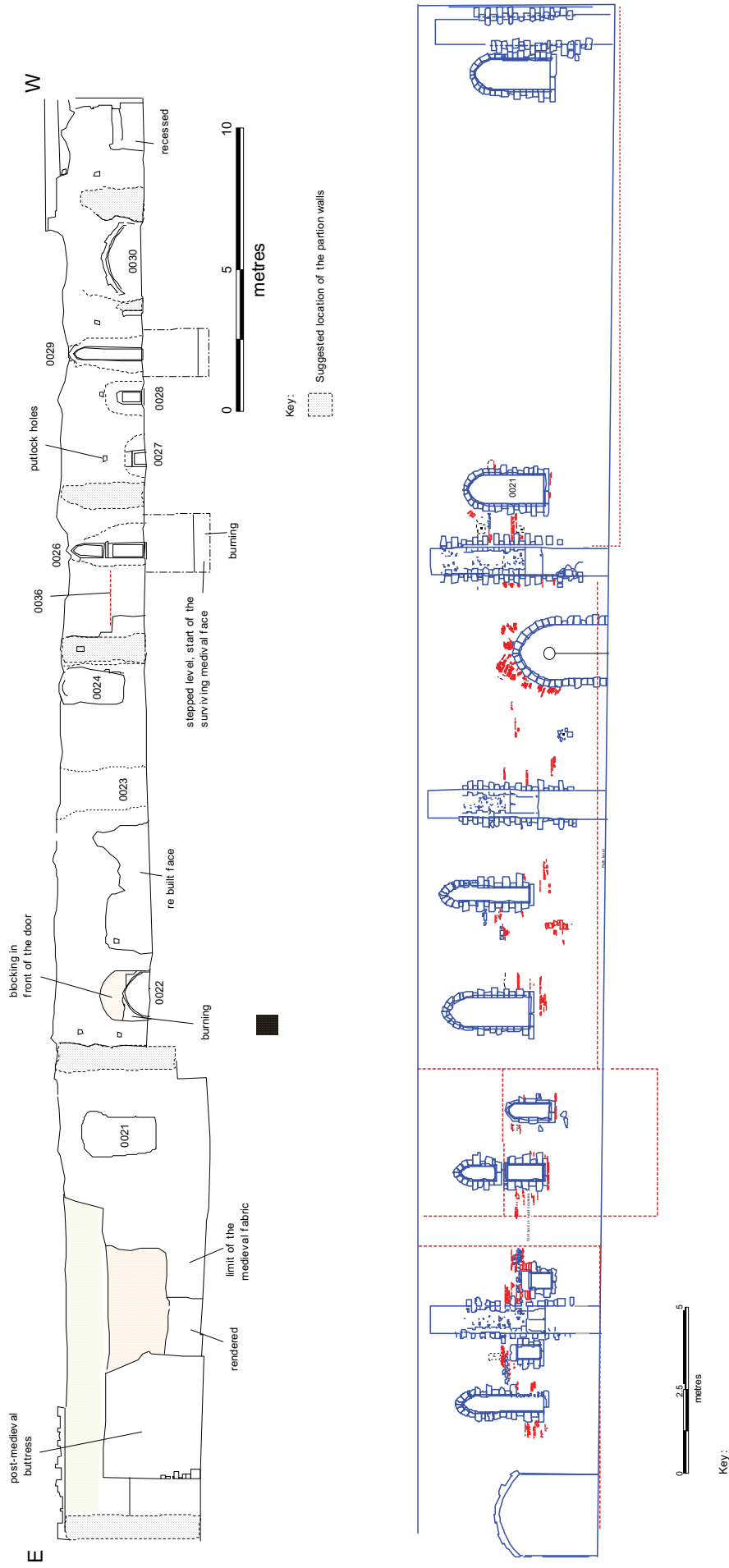


Figure 6. North (internal) face elevation (top) and reconstruction of the external face below

The exact style of the buttresses is not repeated anywhere else within the Abbey. The profile of the remaining buttress core on Abbot's Palace buildings (Alwyne House) is very similar, but the facing stones are missing and a single similar styled buttress exists on the vineyards extension to the precinct west wall, on the far side of The Lark. At the eastern end of the service range, an (?)earlier variation of the buttress style is used which also occurs on the exterior of the precinct north wall along Eastgate Street (the construction of which is dated AD 1225).

The surveyed section is characterised by the frequency and the variety of openings which occur in a great number in the central part of the wall. These are a mix of arched and square-headed forms. There is no evidence that any of the openings are later insertions and, despite the two styles, they are probably all contemporary and part of a single phase of build. In support of this, both opening types have the same simple chamfered moulding and all are formed from a Barnack limestone, the texture of which is very consistent across the entire group of windows; suggesting that all the stone was sourced from the same quarry. Whilst the arched-headed openings are clearly windows, it seems likely that the squared-headed ones had another function that necessitate this different shape and operated perhaps as some form of hatch.

Windows

The windows all conform to a pattern of Early English style two-centred arches which date to probably the first half of the 13th century (Fig. 7b). All are the same height (2.28m) but fall into wide (0.8m) and half width (0.4m) variants; the outline of window 0026 shares the outline of the narrow window type but is divided horizontally (Fig.7c). The openings have all been blocked very neatly. The blocking seems to have been undertaken in two campaigns of work as the openings in the west half of the wall have been infilled with slabs of limestone fixed with bronze pegs, whilst in the eastern half flint has been used. The blocking is well recessed into the windows and there is no indication of tracery. On the inside of the window there is a shallow rebate, possibly for shutters. The distribution of the windows along the wall is irregular

and reflects the internal divisions within the range. The windows respect two sill heights with adjacent windows 0023 and 0024 being 0.46m higher than the other windows. The remains of the stub of an internal wall indicate that windows 0023 and 0024 are part of a cell separate from the lower windows further to the west. Internally the windows are recessed into splays, the tops of which have been truncated. Comparison of the height of the masonry required over window 0021 to accommodate its reveal with similarly styled window 0024 suggests that at least 0.6m of the wall height has been lost. The suggested height is comparable to the surviving top of the wall at the west end of the range and to the wall to the surviving eaves height on the Abbot's Palace range (Alwyne House), both of which are slightly taller.

Windows 0025 and 0026 are anomalous to the pattern of the other windows, being half-height and set lower in the wall. Notably however, the top of the window is the same level as the horizontal division in the adjacent split lancet 0026, suggesting that the two are related and respect the same feature; an internal floor or gallery at this level. The plan (Fig.4) shows that windows 0025 and 0026 pierce a section of wall that is thinner than the general wall depth. Despite the decay of the north face of the wall, this reduced thickness is a genuine feature and is demonstrated by the partly surviving east edge of the embrasure of window 0026. The internal reveal of 0025 has however been obscured completely by a later repair (Fig. 6). Although the outline of window 0026 is the same as that of 0023 and 0029 it is fashioned from two completely separate openings with a course of flintwork between the stone lintel and sill, but internally the two parts are within a single splay. There is a projecting stone sill within the splay, which suggests that it is divided from the window below but there is no definitive indication of a floor and the sill appears incongruous. There is however a short ledge (Fig.6: 0036), just to the east of the windows formed by the changing thickness in the wall and this coincides with the sill height. Externally the lower half of window 0026 has a small rebate around the inner edge and the fixings for horizontal bars, evidenced by eight, evenly spaced, paired holes within the rebate on the verticals, but this does not extend to the lower one.



a b c
South elevation buttress (a), window 0021(b) and window 0026(c)



d e
South elevation Buttress 0034(a) and north elevation door 0021(e)



f g
North elevation windows 0028 (f) and 0029 and door 0030 (g)

Figure 7. Selected wall photographs

Square-headed openings

The square-headed openings 0027 and 0028 occur either side of a buttress, and 0028 is so close to the buttress that the stones of each abut. The wall behind the buttress is particularly thick, suggesting that the two openings were separated by an internal wall. The openings are different sizes with 0027 measuring 420mm x 600mm and 0028 360mm x 660mm, and each has a simple chamfered moulding similar to the windows. The wall surrounding the lintel of 0027 is made up of slightly irregular, hand-made, red bricks which measure $10\frac{3}{4}$ -11"x 5"x $2\frac{7}{8}$ -3". These do not conform to any standard post-medieval size and whilst being very thick for the period, appear to be an original setting. Similar of so-called 'great bricks' have been found at Coggleshall Abbey and used on a church dedicated in 1167. Coggleshall Abbey supplied bricks to the adjacent area and from their use in these neighbouring buildings, the bricks use can be dated to c.1150-1225 (Drury 1981). To the east of the opening the flint is well coursed and separated by bands of tiles, but this breaks down over the lintel; this is either the effect of the sloping top edge of the lintel stone or evidence of patching.

As with the windows the square-headed openings have splays but these are narrower than those to the windows. Unlike the windows the angled splays occur only on the sides of the opening with the top and the sill being square to the opening.

Entrances

Two entrances exist within the surveyed section; a two-centred arched door 0022, similar in style to the windows and a wider and taller flattened arched gate or cart way entrance, 0030. The entrances are situated between paired buttresses; the one other entrance way through the wall is at the west end of the range, beyond the survey area, and this is similarly positioned.

Door 0022 is 1.60m wide and currently 1.8m to the apex of the arch, but estimates of the medieval ground level would suggest an original height of c.2.50m. The doorway is framed with limestone blocks, and on the arch there is a simple chamfer which terminates in a moulded stop at the springing point. Over the arch the wall is made up of a mixed rubble of rough limestone, flint

and tiles; the tiles are laid at a raked angle in an effort to transfer the weight of the wall beyond the door head. On the north side, the doorway is set in the back of a recessed arch and the limit of the tiling on the south side reflects the limit of the outer arch. The rubble over the door gives the impression that the door is either a later insertion or the door head has been lowered but the door jambs are in their original setting and the architecture is consistent with the windows. On the north side the door has been exposed to a fire (Fig. 7e), the surfaces within the recess have been sooted and the stone surround and the mortar between the flints have been burnt pink. The outer edge of the recess shows no sign of burning and is the most visible evidence that the masonry at the front arch has been replaced. The back of the recess has, in the past been blocked from the north side in bonded flint obscuring the doorway. Part of this blocking material remains over the door; the blocking up of the door post-dates the fire.

Entrance 0030 (Fig. 7g) is a larger opening than 0022 and is interpreted as a cart entrance. The arch is a flattened two-centred form and the opening is 2.44m wide with an estimated height of about 3m. On the north elevation the entrance is recessed into the wall and a single moulded stone on the west side indicates the depth to the orders. The wall projects forward either side of the side of the entrance, suggesting that it opens into a passageway and there is a deep rebate cut into the stones of the north side of the arch for a set of heavy doors. Above the stone voussoirs is a second rough arch form made up of 1½ courses of mixed bricks laid on edge. Both red and white bricks are used and limestone rubble is included in the mix.

Eastern end of the wall - Gardener's compound (Fig. 5)

The section of wall extending across the gardener's compound is made up of a mix of different phase builds. The medieval range extends to the mid-point of the compound where there is the scar of a removed buttress, 0034 (Fig. 7d). On the reverse of the wall, in the garden of No 24 Mustow Street, there is a corresponding scar on the wall face suggesting a gable end or partition wall at this point. The line of this putative gable has been rebuilt and is part of the existing neighbouring building and forms the garden's east boundary. From the buttress to the corner of the compound and the east return to the junction

with the north-south Abbot's Palace range there is no *in situ* medieval fabric. This extent is made up of a mixed flint and brick rubble wall dating to no earlier than the end of the 18th century. The later wall abuts the medieval building with a straight vertical joint.

Immediately adjacent to and west of the buttress are the remains of a window 0035; this is framed by a vertical row of dressed stone with a chamfered moulding to the edge of the opening, similar to the windows in the rest of the range. The head and base of the opening have been truncated and rebuilt, along with the base of the adjacent buttress. The surviving extent of the edge suggests that the sill was at least 0.45m below the level of the windows over the rest of the range but it extends to too great a height to be considered a door. From its east edge, opening 0035, and the original wall to the west of it, has been demolished removing a c 9m length of the building. The outline of the subsequent rebuilding can be seen on both faces of the wall. On the south side this extends down to the existing ground level and from this side, gives the impression that there might once have been an entrance here. The ground level on the north side of the wall is however lower and rough flint core, part of the original wall which survived the demolition, spans this apparent gap below the south face ground level. The reconstruction of the demolished section was later rebuilt in two phases. The lower part is constructed of bricks and limestone blocks; the bricks suggesting that the repair probably dates to 16th or 17th century. The initial repair extended only to the height of 3.2m before being raised to its current full height when the length of wall east of the buttress was built.

On the north side of the wall the existing ground level is closer to the medieval level and the height of the blocked interior of window 0021 demonstrates how lofty these opening were. At the east end, the thickness of the wall is augmented with what appears to be a wide pilaster-type buttress. This projects forward 0.45m from the general wall line wall and is faced with a mix of dressed stone and early brick. The 'buttress' does not correspond with any medieval features on the south side and is wholly within and supports the repair section. The brick date within the buttress suggests that it and the repair of the wall are contemporary.

North Elevation (Fig. 6)

The pointing on the north side of the wall is more comprehensive and virtually all the medieval fabric is obscured. The above ground north face as it is perceived today is re-pointed core fabric, which has been done in an extremely hard cement-based mortar, and there are few indications of the plane of the internal face of the wall. Apart from within the recesses of the windows, it is difficult to be confident that any of the medieval wall face survives on the north side. A section of face work exists just to the west of the door; this has been extensively repaired and the opening of the arch-headed door has been rebuilt. The general wall thickness has eroded away, probably precipitated by the facing limestone being robbed from the opening to the embrasures and possibly fire damage. Lime plaster found in the post-dissolution rubble in the test hole excavations suggests that the interior of the building was once rendered.

The section (Fig. 6) shows, as shaded, those areas of the wall that project forward of the general wall line and are believed to be where the internal walls were attached.

Test hole excavation (Figs. 8 and 9)

The test holes were excavated inside the building against the north face of the wall, opposing the two areas of collapse. The locations of the excavations are shown in Figure 4 and the sections in Figures 8 and 9. The depths in the text are taken from current ground level, absolute levels are shown on the plans and section.

The current ground level has been raised by successive dumps of spoil imported onto the site and the ground level is c.0.9m higher than the existing external level within the aviaries and 2.75m above the current pavement level of Mustow Street outside the Precinct. The soil dumping occurred in several episodes in the relatively recent past, 0003 was deposited within the last 50-60 years and 0002 relates directly to previous re-facing and repair campaigns to the wall. Prior to this the ground levels either side of the wall were the same. It is from this depth that the wall has been repaired, and there appears

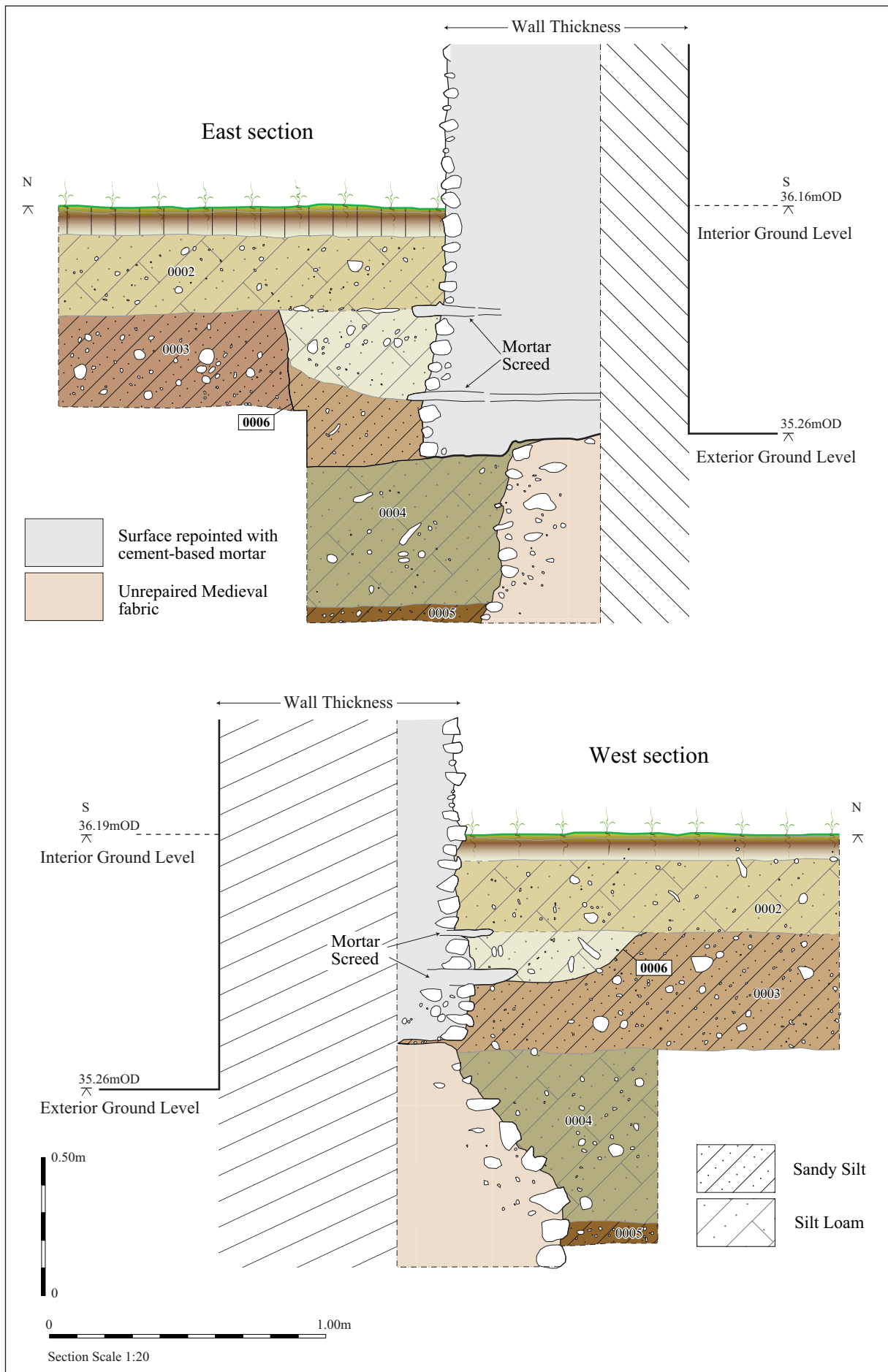


Figure 8. Sections, Test hole 1

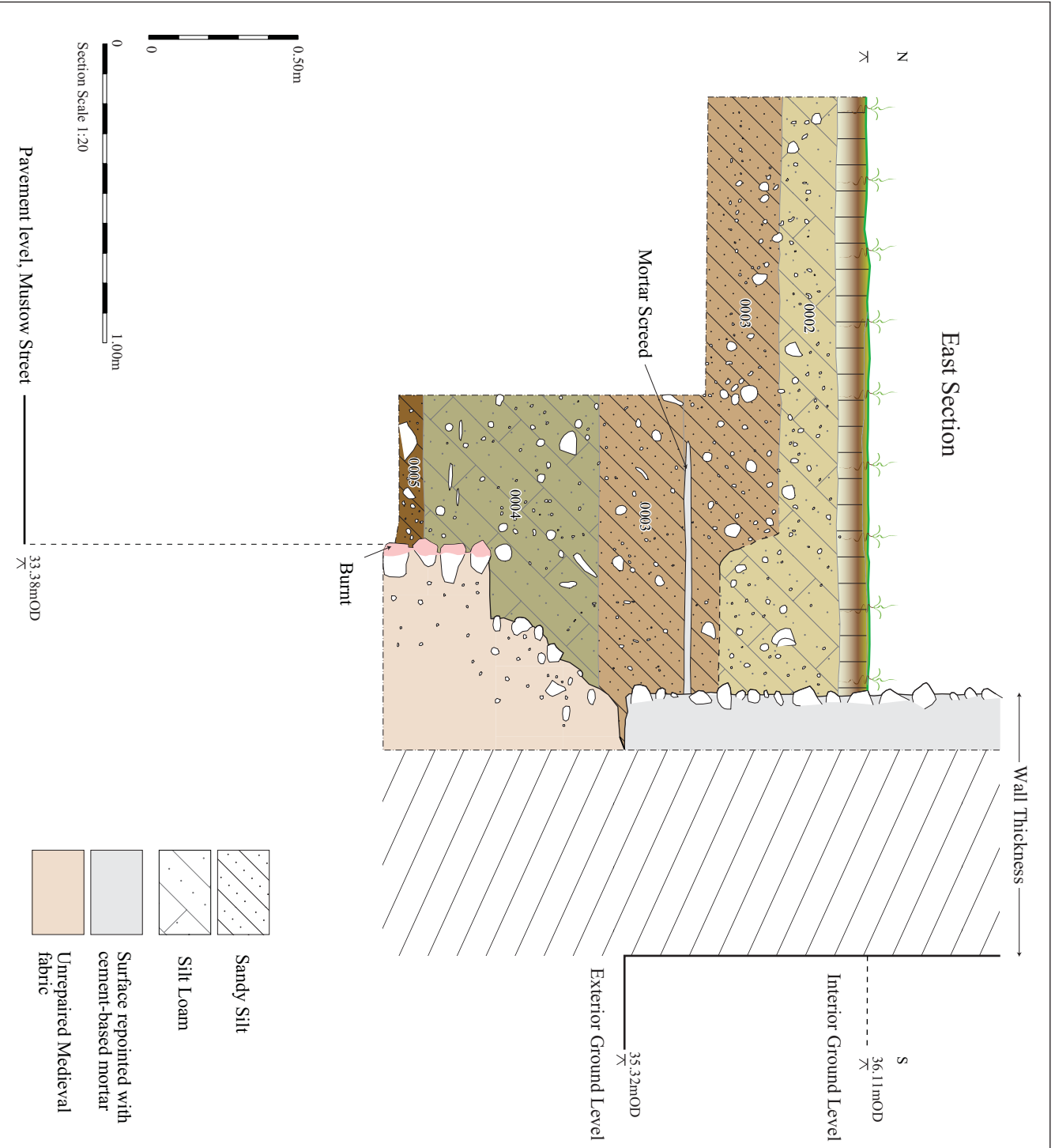


Figure 9. Section, Test hole 2

to have been two further re-pointing campaigns since the original repair and these subsequent works have been done from a trench labelled 0006. The phases of re-pointing are evidenced by two thin screeds of lime-crete blinding across the trench sealing the soil below; and these lie at the interfaces of the soil horizons.

The soil immediately below the level of the repair (0004) was a worked garden-type loam, which contained occasional early post-medieval tile, brick and mortar. This too was an imported soil and probably deposited around the 18th century. At the base of the section was a dense rubble and dark silt deposit, 0005, containing material similar to the fabric of the wall and thought to be related to the destruction of the building possibly at the time of the dissolution.

Within Test Hole 1 the east side of the window reveal has been re-created as part of the repair. The front of the reconstructed masonry was lifted off what was the ground level, without foundations and sits on unconsolidated soil; in section this appears as an unsupported overhang. As the repair has not been lifted off original fabric it seems likely that the repairers dropped the line from, and underpinned, a surviving outcrop of medieval masonry higher up the wall, or simply made it up.

Medieval Wall

Unrepaired, medieval fabric was encountered at a depth of 0.8m, at the junction with the repair. The top of the medieval fabric was truncated, but an intact wall face was recorded at the base of both excavated sections at 1.3m. The line of the intact wall face was common to both test holes and projects forward 400-500mm of the repaired face above (Figs. 4, 9 and 10). It is possible that this difference reflects how much the wall above ground has deteriorated but it seems more likely that the wall face was once stepped. The test holes were excavated to 1.6m but no medieval floor level, or indication of it was achieved.

In Test Hole 2 the medieval wall face has been subjected to a fire intense enough to have burnt the mortar pointing pink to a depth of several



h



i

Test hole 1 showing unsupported masonry (h) and unrepaired medieval wall and limecrete blindings (i)



Test hole 2 showing projection wall below current ground level

Figure 10. Test hole photographs

centimetres and has caused the limestones to laminate. This exposure to a fire confirms that this part of the wall was uncovered and not a below ground footing. Similar levels of burning were seen within the recess to door 0022, which was then subsequently sealed, and this is the only place where the original surface survives on the visible part of this side of the wall. This suggests that the fire may have been more extensive; indeed exposure to fire may have hastened the mortar's deterioration and explain why the north face has been almost completely lost. Contrary to this, the stones within the window reveals show no sign of burning at all.

5. Discussion

The surveyed section of wall represents part of a range of connected service buildings that once flanked the north side of the Great Court. The buildings were listed in an inventory of damage caused during the town riots in 1327. The lists begins with a doorkeeper's rooms, near the gate, and runs through various kennels, stables and cowsheds and ends with the millbake house, hay store and abbot's bake house. Other accounts describe the buildings as including a granary and brewhouse.

The analysis of the building is frustrated by the nominal surviving evidence above ground and the limited scope of works. The lack of information about fireplaces within what is almost certainly an 'industrial type' building hamper any conclusive results but the limited excavation has demonstrated that the archaeological layers are well buried and potentially well preserved. Further excavation offers a real possibility for evidence to provide better understanding of this structure.

The range of buildings was substantial measuring 8m across where surveyed, which is towards the upper limit of medieval building widths, and the total length of the range is c.150m. The surviving wall thickness is <0.9m and was probably once the same as that of the precinct wall (1.05m). The building range probably stopped short of the line of, and was separate from the Abbot's Palace buildings – which probably included his bake house - that formed the south edge of the court. The drawn length is over 45m long and

existing internal ground level (behind 24 Mustow Street) is much lower at the east end of the building, and this is probably close to the original floor height. This level is within 5cms of the height of the door threshold on the west side of the Abbot's Palace (Alwynne House) which is the nearest point to the survey where the medieval level is known.

The excavation found a stepped change to the internal wall face and this was interpreted as a floor height and probably close to the original external ground level at this point too. This level is 0.7m higher than the level at the east end of the building but the relationship between the relative floor and window heights is the same in the two parts of the building.

Evidence that the building continued below the external ground level invites the possibility that the building had a sunken floor or undercroft. The floor of this may relate the ground level outside the precinct which is currently 1.4m below the supposed medieval ground level within the precinct.

The function of the buildings

The buildings are well served by large windows and despite only being fenestrated on one of the walls they would have been well lit. This would imply that they provided an environment for activity and it seems likely that this is the brew and the bakehouses listed in the accounts rather than the animal shelters; if the buildings are listed sequentially in the accounts, this interpretation is also supported by the building's location at the end of the range. The apparent eccentric composition of the window levels and heights suggests that the building's design was driven by functionality and would be directly related to the internal arrangement of the building. The assortment of windows and openings in the centre of the wall do not respect a single floor level but, if a brewery, could indicate a series of galleries and platforms with which to service the vats and furnaces as illustrated in Figure 12. It also shows this activity being undertaken in double height space to accommodate the tall flues which may also account for the sunken floor levels that occur in this part of the building.

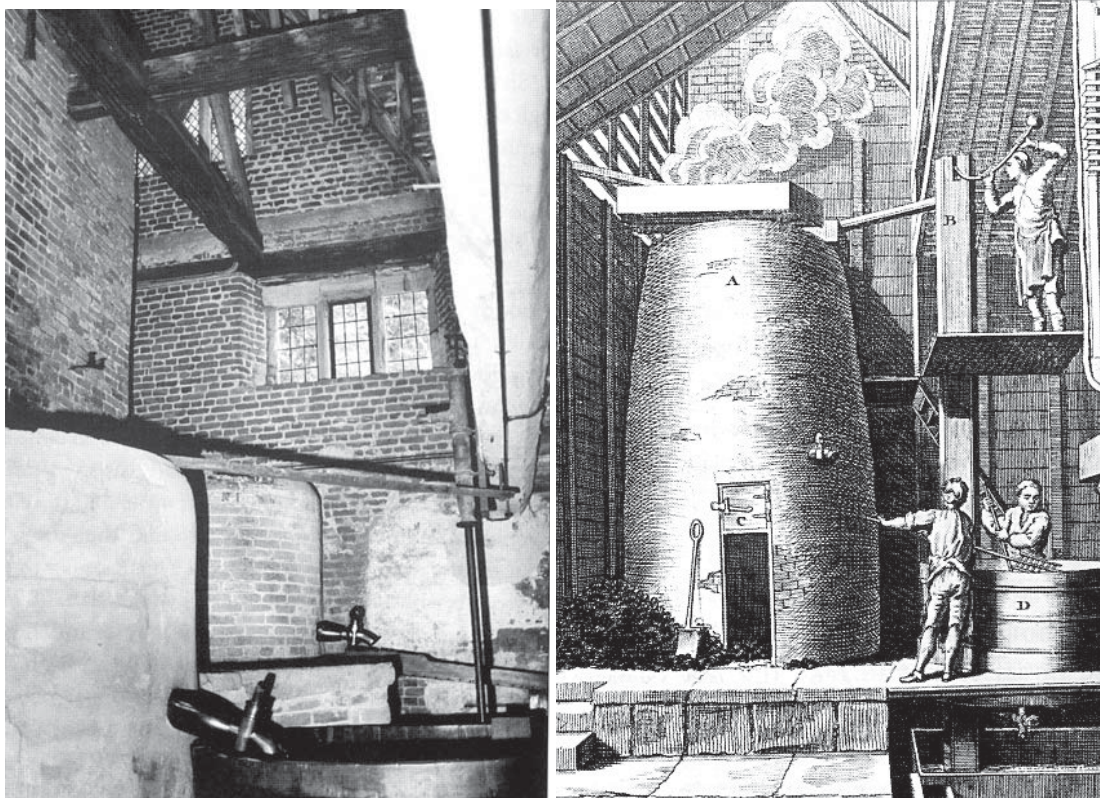


Figure 12.

The interior of the 16th century brewhouse at Charlecote Park, Warwickshire (left) and a small brewhouse as published in the Universal Magazine of 1747/8 (Sambrook 1996).

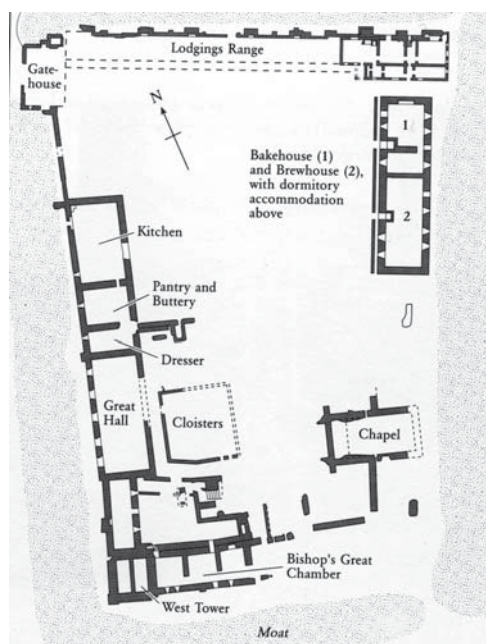


Figure 13.

Plan of Bishops Waltham, Hampshire, showing the substantial detached bakehouse and brewhouse, some 33 m long in length, to the north-east of the cloister (English Heritage guidebook)

Documentary references to medieval bakehouses and brewhouses are common and typically the two functions are listed together and in most domestic households the same space would have served both purposes.

Within the Abbey the activity is likely to have occurred in individual, although adjacent, parts of the building range. Figure 13 shows a co-joined bakehouse and brewhouse amongst the buildings of the Bishop of Winchester at Bishops Waltham in Hampshire. Brewing was as vital an activity as baking for the large, communal households of earlier centuries, when the standard daily allowance of ale varied between one and two gallons per day.

The position of the building on the slope and adjacent to a large ditch known to run against the outside precinct north wall could also be significant, situated to harvest water off the roofs of the upslope range and discharge water via the ditch into the river below. The smells and fire-risk associated with both processes necessitate that these buildings were set away, downwind and downstream from lodgings and claustral buildings. (Bury's extensive medieval tanning industry exploited the river beyond the adjacent Eastgate).

Dating of the building

The precinct wall was largely constructed during the Abbotship of Anselm between 1120 and 1148. The wall was utilised as a support and incorporated buildings within its construction in many places from its inception and it is likely that a range of buildings stood here from the middle of the 12th century. At the east end of the range (near the sensory garden) a small round-headed single slit window and short pilaster buttress dating to this period demonstrate that part of this original range survives and it is likely that this is part of the buildings that Abbot Samson had re-roofed in tile sometime between 1190 and 1203. The surveyed section is a later addition or replacement of an earlier range; the architectural style of windows of the surveyed section dates to the end of the 12th to the end of the 13th century and the building is thought to be towards the first half of this date range. The prodigious use of tile within the fabric of the wall suggests that it may have been a replacement for part of the range that Samson had re-roofed, possibly re-using some of the materials released by the partial demolition of the earlier buildings. The buttresses have

some similarity with those on the precinct wall near Eastgate Bridge, which dates to c.1225, and the wall surrounding the vinefields, land which was acquired in the time of Samson 1182-1212. The wall surrounding the vinefields (alongside St James's school) also has a flattened arched entrance similar to the cart entrance in the survey wall. The building was in existence by the time of the riots of 1327 and may have been damaged by this event.

The buildings range remained in use until the Reformation (1539). There is evidence of at least one later four-centred arched entrance inserted at the west end of the range, but this does not lie within the surveyed section, and there are large areas, west of the tea shop, where the wall has undergone repair and information has been lost. During the late 15th/early 16th century timber-framed buildings constructed against the outer face of the precinct wall, erected over the infilled precinct wall ditch and it is notable how closely these late medieval property boundaries relate to the partitions within the service range buildings. The building range was probably demolished at the time of the dissolution and the rubble at the base of the test hole may date from this episode. Further destruction of the Abbey's buildings including the Abbot's Palace range in the 18th century and the date of the rebuilding of the east end of the wall concurs with this period.

Failure of the wall and recommendation for further work

The surface of the south side of the wall has bulged and the face has started to collapse in two places and the causes of the failure were apparent within the test hole excavations. On the north side of the wall, the east side of the reveal of window 0029 has been reconstructed as part of a creative restoration; this is a substantial block of flintwork and is not built off any supporting medieval masonry. The soil immediately below the rebuilt reveal was probably deposited around the 18th century and is not well consolidated and as the result this part of the wall is dropping and has opened up a horizontal crack. The problems are compounded by root action.

The wall is in need of repair and underpinning of the collapsing section. It is recommended that there is archaeological input into this work to record any additional evidence that may be exposed. Much of the soil build-up to the

north of the wall is a modern overburden and there is a safe buffer of 1.2m from current ground levels before impacting on archaeological deposits.

6. Archive deposition

Paper and photographic archive are stored at SCCAS Bury St Edmunds. The digital data within folders T:arc\All site\BSE\BSE334 Aviary wall survey

7. List of contributors and acknowledgements

The excavation was carried out by Andrew Tester, David Gill and Jonathon Van Jennians, all from Suffolk County Council Archaeological Service, Field Team.

The excavation was monitored by Bob Carr (SCCAS Conservation Team) and David Brown (English Heritage).

The report was checked by Richenda Goffin.

8. Bibliography and other sources

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Drury, P., 1981, 'The production of brick and tile in medieval England', in Crossley, D.W. (ed.) Medieval Industry, pp.126-42. Counc. Brit. Archaeol. Res. Rep. 40, London.

Sambrook, P., 1996, 'Country House Brewing in England 1500-1900' The Hambeldon Press

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Disclaimer

Any opinions expressed in this report about the need for further archaeological work are those of the Field Projects Team alone. Ultimately the need for further work will be determined by the Local Planning Authority and its Archaeological Advisors when a planning application is registered. Suffolk County Council's archaeological contracting services cannot accept responsibility for inconvenience caused to the clients should the Planning Authority take a different view to that expressed in the report.

Aviary Wall (N. Precinct inner wall) Bury St Edmunds Abbey

SAM : Suffolk 2
Suffolk HER : BSE 010
NGR : TL 85638 64319

1. Background

- 1.1 There are proposals for repair works to conserve the above ground remains of this building. An archaeological assessment (appendix 1)has advised that, in order to provide an objective record of the structure before conservation works begin, an archaeological survey of the building structure should be prepared. Soil investigation to understand the nature of the fabric failure forms part of the overall conservation process; such investigation is to be undertaken employing archaeological methods.
- 1.2 The exact detail of the conservation engineering design to stabilise the walls will depend on the results of this field evaluation. There may be a requirement for further archaeological work.
- 1.3 The process of assessing a structure, assessing the potential for damage that may be caused to a structure by conservation, and using conditions to ensure programmes of work take place to mitigate damage are all integral to Planning Policy Guidance 15, “Planning and the Historic Environment”, which itself informs practice when Scheduled Ancient Monuments area affected. This brief follows the substance of the advice of PPG 15 and “Informed Conservation: Understanding Historic Buildings and their Landscapes for Conservation”, English Heritage 2001. This latter proposes that a programme of Conservation-Based Research and Analysis (CoBRA) is needed in this case in order to:
 - i) Inform a programme of proposed works or repair.
 - ii) Record significant fabric to be removed or hidden during building work (normally as a condition of consent or grant).
- 1.4 Although it is accepted that the intent is to minimise disruption and where possible to preserve *in situ*, it is important that a full analysis and record of the historic fabric is made before any development begins, this will both inform detailed development proposals and provide a context for recording and or archaeological excavation required by development within the body of the building; provide a detailed record to inform future assessments of the rate of deterioration of the external fabric and its long term conservation requirement.
- 1.5 All arrangements for the recording, the timing of the work, access to the site, are to be defined and negotiated with the commissioning body.
- 1.6 The responsibility for identifying any restraints on field-work (e.g. Scheduled Monument status, SSSIs, wildlife sites &c.) rests with the commissioning body and its archaeological contractor. The existence and content of the archaeological brief does not over-ride such restraints or imply that the target area is freely available.

2. **Brief for Archaeological Recording of the Historic Structure**

- 2.1 In the areas agreed on site (the area covered by the assessment report) Undertake systematic drawn and photographed record of the building fabric.
- 2.3 Provide a description and analysis of the building fabric.
- 2.4 Provide an archive of results and a written report.
- 2.5 This project will be carried through in a manner broadly consistent with English Heritage's *Management of Archaeological Projects*, 1991 (*MAP2*), all stages will follow a process of assessment and justification before proceeding to the next phase of the project. Each stage will be the subject of a further brief and updated project design, this document covers only the recording stage.

3 **Minimum Standards of Recording**

- 3.1 A measured ground plan of the building to be prepared to a minimum scale of 1:20.
- 3.2 Full face measured elevation of all wall faces to a minimum scale of 1:20. This need not be a stone by stone record (see below) but must include the limits of the wall, the external outline of windows, any cracks, any identified fabric joint lines or phasing lines, if lift lines showing fabric construction are present these are to be included. This may be achieved by, e.g. direct measurement, rectified photography or photogrammetry.
- 3.3 To accompany and complement the elevation drawing a photographic record using black and white negative stock and negative size of 6cm x 6cm or greater is to be made. Photographs are to be taken square on to the wall fabric; a wall length no greater than 5m is to be included in each frame; overlaps between frames of at least 2m are to be allowed. The wall face is to have a grid of a minimum of 2m square or fixed points at this approximate interval surveyed in to the outline elevation drawing, marked (e.g. by masking tape) on the wall face and related to a horizontal datum shown on the elevation drawing. A conventional 2m photographic scale should also be visible. The photographs to be suitable for orthogrammetry should this be required at a later stage.
- 3.4 Digital photography may be used to supplement the archive quality black and white images, they may be particularly appropriate to enable cost-effective rectification to overlay with the measured elevation outlines.
- 3.5 Alternatively, a full stone by stone elevation showing all features in detail to be prepared.
- 3.6 A descriptive text and linked analysis of results must be provided. The results should be set in the context of the building as a whole.

3.7 Standards of recording and archive keeping should be in general accord with “Understanding Historic Buildings a guide to good recording practice” English Heritage 2006. Technical standards, applicable to detailed survey, are covered by the “Metric Survey Specification for English Heritage” (May 2000, English Heritage, National Monuments Record Centre, Swindon).

4. **Brief for Trial excavation**

4.1 Open up the wooden shuttered boarding within the stone arch of the doorway at the east end of the aviary and excavate sufficient soil to allow access into the garden area at the rear. This work should be carried out using archaeological methodology.

4.2 Allow for two trial excavations against the wall face on the N side of the wall. Each to be 2 X 2 m. and placed following discussion with the client and the archaeological advisor. Depth is not certain but allowance should be made to carry at least part of the excavated area down to the medieval floor surface or its demolition layer.

5. **General Management**

5.1 A timetable for all stages of the project must be agreed before the first stage of work commences, including monitoring by the Conservation Team of SCC Archaeological Service.

5.2 The composition of the project staff must be detailed and agreed (this is to include any subcontractors).

5.3 A general Health and Safety Policy must be provided, with detailed risk assessment and management strategy for this particular site.

5.4 No initial survey to detect public utility or other services has taken place. The responsibility for this rests with the archaeological contractor.

5.5 The Institute of Field Archaeologists’ *Standards and Guidance* should be used for additional guidance in the execution of the project and in drawing up the report.

6. **Report Requirements**

6.1 An archive of all records and finds must be prepared consistent with the principles of English Heritage’s *Management of Archaeological Projects*, 1991.

6.2 The data recording methods and conventions used must be consistent with, and approved by, the County Sites and Monuments Record.

6.3 The objective account of the archaeological evidence must be clearly distinguished from its archaeological interpretation.

6.4 Reports on specific areas of specialist study must include sufficient detail to permit assessment of potential for analysis, including tabulation of data by context, and must include non-technical summaries.

6.5 The Report must include a discussion and an assessment of the archaeological evidence. Its conclusions must include a clear statement of the archaeological potential of the site, and the significance of that potential in the context of the Regional Research Framework (*East Anglian Archaeology*, Occasional Papers 3 & 8, 1997 and 2000).

6.6 The site archive is to be deposited with the County SMR within three months of the completion of fieldwork. It will then become publicly accessible.

6.7 Where positive conclusions are drawn from a project a summary report, in the established format, suitable for inclusion in the annual ‘Archaeology in Suffolk’ section of the *Proceedings of the Suffolk Institute for Archaeology*, must be prepared. It should be included

in the project report, or submitted to the Conservation Team, by the end of the calendar year in which the evaluation work takes place, whichever is the sooner.

6.8 County SMR sheets must be completed, as per the county SMR manual.

Specification by: R D Carr

Date: July 2009

Reference: /BSE Abbey aviary wall.doc

This brief and specification remains valid for 12 months from the above date.

Report for English Heritage

ARCHAEOLOGICAL ASSESSMENT

BURY ST EDMUNDS ABBEY

North Precinct; internal buildings south wall; area of the aviary.

Visit to inspect and assess the immediate area of wall fabric failure in order to identify areas of archaeological sensitivity; advise on archaeological priorities for repair works; advise on mitigation to accompany conservation works; undertake preliminary archaeological analysis.

1 Context (overall building description, fabric dating & phasing) :

Caveat : , this description is based upon examination of the wall from outside the bird cages – no approach closer than c.4m. was possible, the rear of the wall was not seen.

1.1 The areas of failure are within the south facing internal wall of a series of buildings which formed as a 'lean-too' range utilising the Abbey north precinct wall on its north side. This phase of the precinct wall is believed to have originated in the 12th century during the period of Abbot Anselm; surviving early fabric seen on the west and north walls of the precinct is characterised by strongly coursed flint and mortar fabric utilising large (double fist sized) flint cobbles set in horizontal courses in a dark cream to pale orange lime mortar. Only very small areas of the north precinct wall survive (being largely incorporated into the property boundaries of buildings facing onto Mustow Street). The buildings raised against the precinct inner face are recorded as including a brew-house and stables (Whittingham, Archaeological Journal vol *). They faced onto the Great Court, the largest open space in the Abbey, accessed by the Great Gate off Angel Hill and bounded by the Abbot's palace on the east and the Dormitory on the south. Although within the precinct this area can reasonably be regarded as the most public and lay area of the Abbey, very distinct from the claustral ranges to the south.

1.2 The line of the internal face of the lean-too buildings is essentially complete from the NW corner of the precinct to the N-S wall of Alwyn House. However, the visible fabric is of several fabric styles and materials which suggest significant alterations and repair in both the medieval period and post-Dissolution. The area covered by the aviary buildings appears to be of the Early English style, characterised by two-centre arches with straight chamfers (though square headed openings are present), and roughly coursed flint-work of small flints. It is probable that this is late 13th century in date and is a secondary addition against the 12th century main precinct wall (*caveat* : the precinct wall is known to be poorly preserved in this area, and has not been examined, it is possible, but unlikely, that it is of later origin than other areas of the precinct boundary).

1.3 Although the wall line is complete no roof, floors or lesser internal partitions survive. Ground levels within the buildings (i.e. to the N) are approx 1.5m. above the current ground level of the aviary, and this is clearly at least 0.5m. above the level of the medieval Great Court (based upon the proportions of the buttresses, absence of base plinths, level of window sills, absence of doorway thresholds and visible raised ground levels in the area of the aviary above the general level of the current gardens in the Great Court).

1.4 The materials used in the fabric in the area of the aviary are predominantly flint set in lime mortar, but some small areas of roof tile and brick are present; dressings to openings are in ashlar; buttresses are formed with ashlar and were probably of two stages.

1.5 Distinct building sequences are apparent from the fabric styles. A preliminary assessment suggests :

Phase 1 - typified by flint and mortar fabric utilising small flint set in rough courses with occasional courses of thin roof-tiles and associated with the narrow lancet windows and the buttresses. The doorway at the E end of the range is heavily obscured but materials and style suggest it to be of this phase. Medieval date (probably of the 13th century).

Phase 2 – flint and mortar with larger flints laid more randomly; associated with the wider lancets, subdivision of the narrow lancets and square-head windows. Medieval date (probably of the 14th century).

Phase 3 – localised repairs and re-pointings using hard mortars and brick. post-Dissolution to modern

2 : The areas of wall failure.

2.1 The significant bulging at the two locations at the lower levels of the wall are attributed by others to raised ground levels to the N and high levels of water content. In both cases the fabric affected appears to be phase 1 early medieval mass fabric.

2.2 An area of wall top in the gardeners compound near the east end of the lean-too range. It lies above an area of brick fabric which itself butts to [and is secondary to] flint and mortar fabric of phase 1 type; the brick work is post-Dissolution in style. The wall top is of flint and mortar with occasional brick set in mortar, it is clearly secondary to the brick below and is of phase 3 date; probably of the late 18th or 19th century. This area of fabric probably represents repairs and adaptations to the boundary wall of the gardens whilst they were in private ownership. The construction style and materials are similar to those seen in garden divisions near what is now the Rose Garden to the north of the West Front.

3 : Archaeological Assessment of the aviary wall (i.e. 2.1 above)

3.1 *In broad terms this is the only area of the Abbey where fabric from buildings raised against the Precinct wall survive.*

3.2 *The wall face behind the aviary is by far the best preserved example of early medieval fabric from such buildings; the architectural detailing of both windows and probable doorways survive and date the mass fabric.*

3.3 *Apart from the two gates into the precinct, the precinct wall itself and minor survivals in the area of the Hall of Pleas this is the only area of the Abbey which has not been significantly robbed of facing and architectural detail.*

3.4 ***This is the best survival of Early English style surviving in the Abbey.***

3.5 *Overall this area of fabric is assessed as being of the highest importance. Any threat to the stability and viability of the fabric demands conservation work to ensure long-term preservation. Conservation works should recognise the preservation, visibility of the architectural details, early mass fabric and general context as having the highest priority.*

4 : Archaeological Assessment of the upper wall (i.e. 2.2 above)

4.1 *This area of fabric is representative of post-Dissolution adaptations and repairs seen fairly frequently within the area known as the Abbey Gardens. As such it is part of the historic sequence of uses of the monument and is assessed as having moderate significance. Its preservation is desirable but not an absolute imperative.*

5 Recommendations on the broad principles of repair and consolidation

5.1 The aviary wall is of high importance, conservation works should aim to preserve fabric *in situ* and leave it exposed to view.

5.2 The area of wall top is of moderate importance; there should be a preference for preservation *in situ* as this is fairly large area of fabric and any conservation is likely to affect the total area. However, if this is not achievable (and on site examination and discussion suggest that this is the case)

it would be acceptable to re build the fabric using the same materials where possible and emulating the general building style – but not undertaking a stone-by-stone recreation. Bonding mortar should be visually similar to that used in the original fabric but readily distinguishable under close examination.

6 Recommendations for mitigation

- 6.1 A pre-conservation record of the affected areas of wall and their context should be prepared. As a minimum this should take the form of description and analysis of the fabric accompanied by an archival quality photographic record. It is expected that this will include a dimensionally accurate survey outline elevations of the wall face showing major fabric divisions together with a plan and sample sections; this should be supplemented by digital photographs which will allow partial rectification of the photographic survey should this ever prove necessary in the future (given the scale of the areas affected and the many physical obstructions it is not believed that full photogrammetry is justified).
- 6.2 Any soil disturbance for trail holes to examine soil conditions and provide access on the N face of the wall should be dug and recorded archaeologically.
- 6.3 A report and archive to be provided of all records.
- 6.4 Archaeological advice to be sought when defining and designing the exact form of conservation works following the results of trail work.
- 6.5 Further mitigation to be specified and provided when the impact of conservation work is agreed and defined.

R D Carr
July 2009