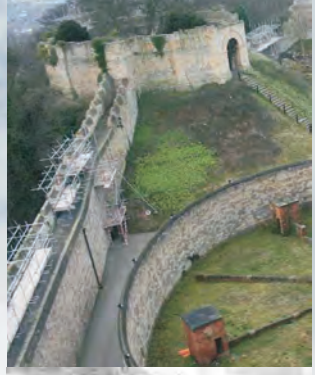

FAS HERITAGE

Walls, gates and towers

Lincoln Castle

Lincolnshire

Archaeological Investigation

Report

November 2015

FAS HERITAGE

ARCHAEOLOGICAL INVESTIGATION

CASTLE WALLS AND TOWERS

LINCOLN CASTLE

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November 2015

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A	Scheduled Monument Consents

Summary

This document reports the results of an archaeological investigation on the walls and towers of Lincoln Castle carried out by FAS Heritage for Lincolnshire County Council between October 2011 and May 2015. The archaeological recording was undertaken to satisfy conditions of Scheduled Monument and Listed Building Consents and consisted of measured survey, survey enhancement and photographic recording of surviving medieval fabric during the restoration programme. A watching brief was maintained on any interventions into the fabric during the course of repair works.

The archaeological investigation provided insight into the original form and history of development, alteration and repair to the castle walls and towers. The results of the investigation, supported by documentary sources and earlier interventions, have allowed the development of the medieval castle up to the early post-medieval period to be summarised in nine main phases. Phase 1, relating to the establishment of castle *c.*1068, has left no identifiable masonry fabric although earthwork features and the reuse of Roman masonry structures can be related to this period. Phase 2 is dated *c.*1080 to *c.*1105 when the largely timber defences were replaced sequentially with masonry structures, including the East and West Gates with evidence for additional stone buildings identified to the south of both gates. This phase saw ramparts formed along the west Roman *colonia* wall and the curtain wall constructed using the Roman wall as its foundation. The northern rampart was heightened to incorporate a timber foundation and a wall constructed upon it; the same technique was employed for the north section of the east curtain wall. Phase 3, dated *c.*1105 to *c.*1115, saw a new south curtain wall established, which included a gate. Phase 4, dated *c.*1129 to *c.*1138, includes the construction of the stone Lucy Tower, when the pre-existing masonry wing walls on the motte were also incorporated into a pair of chamber blocks to either side of the Tower. In Phase 5, dated *c.*1138 to *c.*1154, a substantial remodelling of the southeastern corner of the bailey appears to have taken place consisting of the construction of the Observatory Tower mound, within a substantial masonry revetment wall, and a rectangular keep tower on its summit. Phase 6, dated *c.*1154 to *c.*1199, the gaol was developed within the range of buildings against the east curtain wall and the Observatory Tower. The construction of the southern section of the east curtain wall, enveloping the Phase 2 east range buildings can also be assigned to this phase. Likewise, some of the south curtain wall between the Lucy Tower and Observatory Tower and the parallel walls of the barbican at the West Gate. Phase 7, dated *c.*1199 to *c.*1223, saw repairs to the Observatory Tower and the remaining buildings of the Phase 2 east range buildings. Various works between 1216-20 probably included the West Gate barbican tower and several sections of the curtain wall. Phase 8, dated *c.*1224 to *c.*1272 marks the last major period of medieval construction with re-fronting of the East Gate in 1224-9 and construction of the associated barbican. In 1233 the '*Cusdam Turris'* was under construction which can be equated with Cobb Hall. At around the same time, in 1233-4, the remodelling of the interior of the West Gate was being undertaken. Finally, in 1269-70, repairs to the castle chapel were undertaken which might have been located at first floor level within the East Gate. In Phase 9, dated *c.*1272 to *c.*1642 most repairs or alterations relate to either the administrative buildings such as the hall, or gaol.

Acknowledgements

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1.0 INTRODUCTION

This document reports the results of archaeological investigation on the walls and towers of Lincoln Castle carried out by FAS Heritage for Lincolnshire County Council between October 2011 and May 2015. The archaeological recording was undertaken to satisfy conditions of Scheduled Monument and Listed Building Consents and consisted of measured survey, survey enhancement and photographic recording of surviving medieval fabric during the restoration programme.

1.1 LOCATION AND LAND USE

Lincoln Castle lies in the Upper City of Lincoln, which occupies an elevated position on the western scarp of the Lincoln Edge, where the River Witham flows through a glacial gap in the Jurassic limestone ridge. The castle site overlooks the valleys of the rivers Trent and Witham, to the west and south respectively.

The castle occupies the southwest quadrant of the Upper City and is defined by a rectilinear wall circuit arranged along the cardinal compass points. The south curtain wall and Lucy Tower together form the southern boundary of the castle, stretching from the Observatory Tower to the east and the west curtain wall to the west (Figure 1; Plate 1). The land on the south side of the curtain wall and Lucy Tower, including the south side of Lucy Tower motte, now forms part of domestic properties which front onto Drury Lane and overlooks the steep escarpment down to the Lower City. The eastern defences of the castle include the Observatory Tower and mound at the southeast corner, the East Gate and associated structures and, at the northeast end, Cobb Hall. Between these principal elements are sections of curtain wall, sited upon substantial earth ramparts. From Cobb Hall to the northwest corner of the castle there is a substantial continuous section of curtain wall, again sited upon a substantial earth rampart. The western defences follow the Roman predecessor closely and consist of a further earth rampart surmounted with a masonry curtain wall, interrupted, towards the northern end, with the West Gate and associated structures.

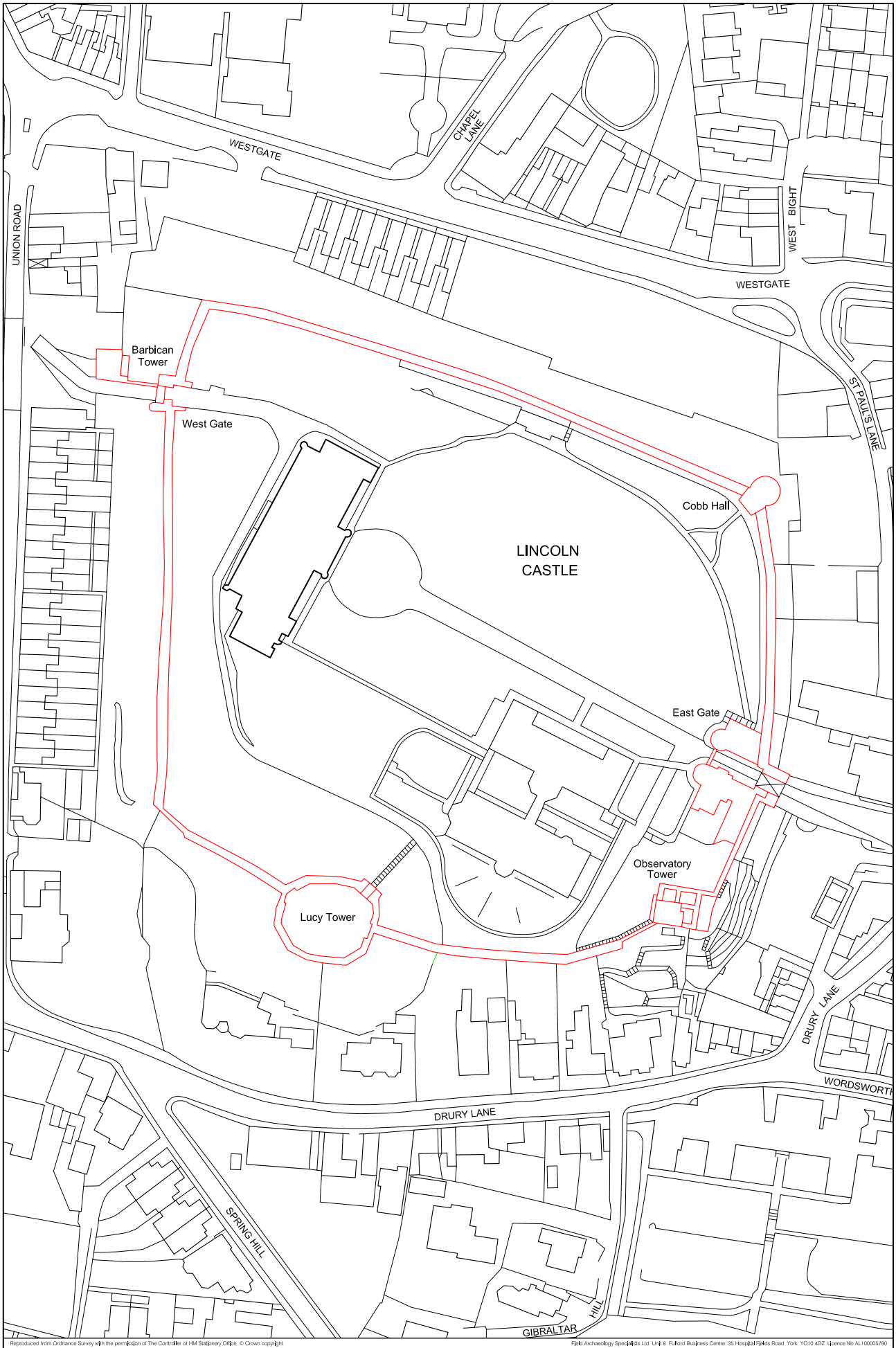
Plate 1 The south curtain wall and Lucy Tower from the Observatory Tower

1.1.1 Statutory designations

Lincoln Castle is a Scheduled Monument and Grade I Listed Building.

1.2 AIMS AND OBJECTIVES

The archaeological investigation was undertaken to satisfy conditions attached to Scheduled



Location map | Scale 1:1500 | Figure 1

Monument and Listed Building Consents. The primary aim was to create a pre-intervention record of the medieval masonry fabric prior to restoration. This work was undertaken with a view to gaining a clearer understanding of the development of the castle defences through archaeological analysis.

1.3 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Lincoln Castle overlies the site of the Roman fortress and later *colonia*, in an area that is known to have been occupied to varying degrees of intensity from the 1st century onwards.

1.3.1 Roman fortress and *colonia*

Two main phases of Roman activity have been identified within the city of Lincoln, and at the castle, defined as the 'military era' and the 'colonia era'.

Military era

By the late 1st century AD a legionary fortress had been established on the hilltop, and tombstones found in the city confirm the presence of the Ninth Legion (*legio IX Hispana*)(Whitwell 1970, 17). Some time around AD 71, the Ninth Legion departed, to be replaced by the Second Legion (*legio II Adiutrix*), a supplementary legion from the region of the Rhine, who in turn departed in AD 77-8 and moved to Chester. The fortress is then likely to have been maintained by a caretaker garrison (Webster 1988, 21; Donel and Jones 2004, 41).

The limits of the legionary fortress have been defined during a number of excavations. The site of Lincoln Castle occupies the southwestern corner of the fortress and the western defences of the castle lie over the Roman fortifications (Webster 1949; Thompson 1956; Petch 1960; Jones 1980). The early fortress defences have been contacted archaeologically at several sites close to the castle (Jones 2003a, 43, 52). An evaluation by FAS Heritage in the grounds of Castle Moat House provided a rare opportunity to record part of the city's legionary defences and to chart their dismantling and remodelling for the *colonia* into the 4th century (FAS 2011b).

Colonia era

In the late 1st century, following the departure of the military forces, Lincoln was granted the status of *colonia*, forming a settlement for retired veterans (Webster 1988, 21; Jones 2003b, 56). The *colonia* was established within the confines of the legionary fortress, partly reusing the existing street plan, and building on the same defences (Jones 2003b, 58). The four gates of the fortress were redeveloped during the 3rd century, as part of their continuing role in the defences of the *colonia*; the walls were thickened to a width of three to four metres, and reached a height of seven to eight metres (Jones 1993, 17; 2003b, 63). Most relevant for the castle, the removal of part of the castle ramparts in 1836 unexpectedly revealed the west gate of the *colonia*, immediately west of the castle's west gate (Thompson and Whitwell 1973)(Plate 2).

1.3.2 Early medieval activity

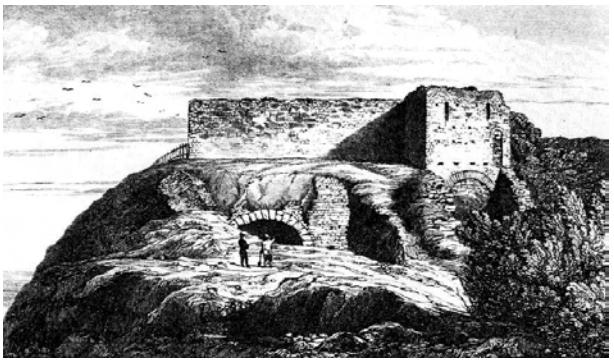


Plate 2 West gate of the Roman *colonia* 1836

At the end of the 4th century Lincoln had an extant infrastructure, public buildings, and possibly a church (Vince 2003a, 141). Beyond the early 5th century, however, there is little evidence for continuity, and in common with many cities across Europe, deposits of dark earth frequently seal the latest occupation deposits, representing a major dislocation in the settlement trajectory (Jones 1993, 24; Steane and Vince 1993, 76-7). The Upper City did not see a major resurgence in settlement until the mid-9th century, and there is no clear evidence for permanent settlement in the preceding centuries. Early Anglo-Saxon pottery has been identified in the Upper City, but in small quantities, and the distribution of ceramic of Middle Saxon date hints that occupation may have been focussed outside the walled city (Vince 2003a, 145-7). It has been suggested that the city itself may have reverted to a semi-rural economy, which perhaps formed the centre of a small political territory before being subsumed into the Anglo-Saxon province of Lindsey, part of the kingdom of Mercia (Vince 2001; Donel and Jones 2004, 41).

1.3.3 Lincoln from the 9th century

In the late 9th century, the kingdom of Mercia (including the earlier kingdom of Lindsey) succumbed in part to Anglo-Scandinavian control. The arrival of the Viking army in the last quarter of the 9th century saw Lincoln become part of the Scandinavian-influenced kingdom of the north, and from this date Lincoln developed as an urban centre (Vince 2001). Archaeological evidence suggests a resurgence in settlement from the end of the 9th century, primarily in the lower part of the city, evidenced at sites such as Flaxengate and Silver Street (Vince 2001). Continued expansion in the 10th century saw the growth of suburbs to the south and east of the city.

1.3.4 The Norman Conquest and the construction of Lincoln Castle

In 1068, following the Conquest, William was faced with rebellion in the north of England and marched an army to York to deal with the problem. He was able to defeat the rebel forces and also prevent a Scottish invasion. To better secure the country he ordered the construction of a castle at York and a further string of castles on his return journey to London. Among the new castles was the construction of a castle at Lincoln, documented by Orderic Vitalis (Chibnall, II, 218), and the *Anglo-Saxon Chronicle* (Garmondsway 1953, 202). By 1070, this had been undertaken; when an uprising at Ely, led by Hereward of Lincolnshire, was quelled, William imprisoned hostages for all of Lindsey in the castle at Lincoln (Symeon of Durham, *Historia Regum*, II 202).

Lincoln Castle was constructed in the southwestern corner of the upper city of the extant Roman *colonia* (Thompson 2004, 23-9). That this was a densely occupied area of the city at that time is

attested in Domesday book; the oft-quoted reference is that the area occupied by Lincoln Castle had previously been assessed as 166 messuages.

> '*De predictis wastis mansionibus. Propter castellum destructe fuerunt c.lx.vi*'
> 'Of the aforesaid waste messuages, 166 were destroyed on account of the castle...'
> (transcribed in Hill 1948, 373).

Investigations for Lincoln Castle Revealed have encountered evidence for 9th to 11th-century activity in the north lawn where the remains of Anglo-Scandinavian dwellings were encountered (FAS Heritage 2010), in the area of the Eastern Courtyard where ceramic of this period was encountered along with further evidence for occupation (FAS Heritage forthcoming) and a early 11th-century church or chapel including a number of burials. This evidence combines to indicate that by the later pre-Conquest period this area which became the castle was occupied by domestic and ecclesiastical buildings.

There is some debate regarding the extent of the earliest castle. David Stocker suggested that the figure of 166 is unlikely to represent actual houses but taxable units (Stocker 2004, 9). This information has been used to estimate the area that the castle might have encompassed at this time, against the known total extent of the occupied city. Alan Vince argued that the 166 units of the castle amounted to 17% of the inhabited city, while the current castle enclosure amounts to only 4%. In contrast, the area constituting the upper city of the *colonia*, within its Roman walls, amounted to 16% of the city in 1086, a figure sufficiently close to the projected 17% to suggest that it was the upper city that described the extent of the castle in 1086 (Stocker and Vince 1997, 223-33). Stocker has reinforced this argument with a discussion of the evidence for the re-fortification of the Roman gates and walls of the upper city in the 11th century (Stocker 2004, 9-22) and has argued for an early 12th-century date for the present castle enclosure.

The motte would have formed one of the earliest elements of the castle. A mid-11th-century date is almost certain for the motte and the Lucy Tower has been dated to the mid-12th century. Although the evidence for the Baile being the extent of the castle in the 11th century seems persuasive, this would not preclude the current bailey of the castle representing an inner bailey. Indeed later documents make reference to the 'baileys' of the castle. Development within the Baile took place very quickly after the establishment of the castle; in less than five years, the construction of the cathedral had commenced, which would have been another major change to the topography of this part of the city.

1.3.5 Development of Lincoln Castle in the medieval and later periods

The castle's masonry defences are not recorded in any of the primary sources in the 11th century, while references in the 12th century are sparse and generally unspecific. However, some early 12th-century observations are worth noting. The Winchester Annals state that castle of Lincoln was burnt in 1113 along with much of the city (Hill 1948, 173n), suggesting that at least parts of the castle were of timber at this date. A near contemporary licence, granted to Bishop Bloet by the king, allowed for

a gateway to be made through the wall (*muro*) of the king's castle 'provided the wall be thereby not weakened'; the license has been dated to the period 1101-1115 by Foster and Major (1931, 20-21). The license has been interpreted in two ways; either referring to a gate being constructed in the current circuit of the curtain wall, as suggested by Michael Thompson (2004, 25) or, as Vince and Stocker argued, into any part of the Baile walls (1997, 223-33). In either case the gate was intended to provide access to the Bishop's residence (*domum*), the location of which in this period has also been a source of debate (*ibid*.).

From ten to fifteen years later Henry of Huntingdon's *Historia Anglorum* provides a description of the foundation of the Minster by Bishop Remi:

> 'Having, therefore, bought lands in the upper city itself, next to the castle which was distinguished by its very strong towers, he constructed a strong church in that strong place, a beautiful church in that beautiful place, dedicated to the Virgin of virgins; it was to be both agreeable to the servants of God and also, as suited the times, invincible to enemies.' (Henry of Huntingdon, ed. T. Arnold 1879, 212)

Henry was probably writing this part of his history in *c*.1129-33 and considered a reliable source for the early history of the Minster (Gem 1986, 9). At the time of writing, the castle, or the main part of it, appears to have been viewed as a separate entity from the rest of the upper city, and it is clear that the castle had towers by this time.

While these documentary sources are very ambiguous as to the topography and layout of the castle, they do suggest that masonry structures were in existence by the early part of the 12th century. In recent years, archaeological interventions at the castle and within Castle Moat House have brought new information to light for the internal arrangement and occupation of the castle. The evaluation within the North Lawn encountered the remains of a substantial building of probable 11th- to 12th-century date interpreted as the remains of a large hall (FAS 2010), while evidence for the construction and demise of a substantial timber building was encountered in the excavation of the Eastern Courtyard (FAS forthcoming).

More specific documentary references relating to the structures and works to the castle can be tied, at least tentatively, to the various components of the castle defences and are summarised in the relevant sections of this report.

The 15th and 16th centuries

Other than its judicial function, the Crown's main interest in the castle during the 15th century appears to be the financial yield of the fee of keeping the castle. There are few references to repairs to the gaol in this period, which were presumably funded from the constable's fee. This continued role is emphasised by a major campaign of work on the gaol in 1540-41, the building accounts for which survive. The main emphasis of the work was on repair and improvements, although, as usual, the document is not specific as to the location of the gaol in the castle. The gaol at the time must have been a masonry structure considering the quantities of lime that was used in the works and the need to build a lime kiln (PRO E 199/24/31). Again, any relevant documentary references are outlined

below, in conjunction with the section of building to which they refer.

The castle and castle yard in the 17th century

Speed's plan of the city in 1610 depicts the castle from the west, showing the gates and towers of the eastern defences, and the west gate, and the keep to the south. An earlier draft by Speed dated 1607 shows the castle from the south with a range of three buildings positioned close to East Gate (Plate 3).

A subsequent Parliamentary Survey of the castle in 1652 describes

> 'all that messuage or tenement situate and standing within the Walls of the Castle of Lincoln neere to the Castle there which is now called the Shire house and adjoyning the Gaole consisting of a Sellar, a Hall and Parlour below Staires, a Kitchen, a buttry, a large dining Roome, with foure chambers, and four garretts over the same, with a Brewhouse and Buttry, two small Gardines to the same walled about with high stone walls and a small Hay house. All which wee value to be worth by the year six pounds' (PRO List and Indexes, xiv 38 (Duchy of Lancaster); LAO 7/FANE/3/5/2)

The survey demonstrates the presence of a Shire Hall (which was not included in the sale and therefore not described), the gaol (also not included in the survey or the valuation) and a house adjoining the gaol. Although Speed's depiction may be stylised, it is possible that the buildings he depicts relate to those described on the survey some 40 years later. In 1634, the keep of the castle is described as containing only a garden (Willson Collection 786/G, 93).

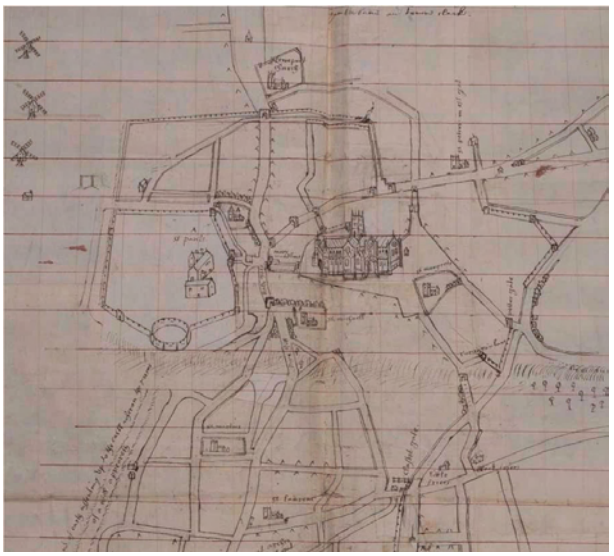


Plate 3 John Speed's draft plan of Lincoln, 1607

Civil war

Although references suggest a decline in the fortifications, in the 17th century, the castle was still seen as a stronghold, and during the period of civil unrest, changed hands many times. A Declaration of 1642 includes reference to 'the speedy fortifying' of the castle. In 1643, the castle had fallen into the hands of the Royalists, but a show of strength by Lord Willoughby saw their surrender (Hill 1956, 163). In 1644, Lincoln Castle was again in Royalist hands, and was quickly stormed by Lord Manchester and Cromwell. A contemporary account of the event survives and describes Lord Manchester's forces taking the lower city on the 3rd May, while the Royalists retreated to the upper works and the Castle, which 'they conceived to be impregnable'. Initially, the storming of the castle was hindered by rain;

> 'it being so slippery that it was not possible for our Foot to crawl up the hill to come to their workes, the Mounnt whereon the Castle stood, being neare as steep as the eaves of a house,

> and there was the chiefest place where we were to storm them'

but after some delay, the castle was taken;

> 'Our Foot never left running till they came to the top of the Hill, which would have been enough to tier a Horse, being under their workes, we set up the Scaling ladders, which they seeing left their fiering, and threw mighty stones upon us from over their workes, by which wee received more hurt than by all their shot; but all would not daunt our men, but up to the top of the ladders they got, which proved too short most of them, to reach the top of their Wals and Works, they being most of them as high as London Wal, but yet they shifted to get up, which the enemy perceiving, they had no spirit left in them, but betooke themselves to their heels'

Although a speedy victory, it seems that this was sufficient to warrant its slighting by Parliamentary forces. The extent of the damage is unrecorded, but given the continued use of the castle, this is likely to have only been sufficient to destroy its remaining defensive potential while maintaining its function as a gaol. In 1648, an attack by Royalists led to the withdrawal of Parliamentarian troops to the Bishop's Palace, possibly indicating that the castle was not sufficiently fortified at this time. However, despite damage to the upper city, the central role of the castle and cathedral as administrative and religious centres continued (Steane and Vince 2006, 3).

The 18th- to 19th-century prison

During the 18th century, activity within the castle was dominated by its use as the County Gaol, which resulted in repairs to the medieval fabric as a means of making the site secure, and also in the first reliable plans of the site. Concurrently, this period also saw an emergence of antiquarian interest in the castle remains, and the first published accounts of the castle remains.

The 19th- to 20th-century castle yard

The 19th century saw major developments to the main buildings within the castle, most notably the construction of a new County Hall from 1822, additions to the prison in 1847, and the subsequent closure of the gaol in 1878. Throughout the 19th century, particularly after 1835, a comprehensive programme of repair and restoration was carried out, much of which has been documented by Willson in both the report and in various handwritten notes preserved in the Willson collection. From 1835 until the early 1840s, a comprehensive programme of repair and restoration to the fabric was carried out under the supervision of Willson. Fortunately, Willson documented these interventions, and any archaeological observations, both by report and in various handwritten notes and drawings preserved in the Willson collection in the Society of Antiquaries Library. Where appropriate Willson's observations are discussed in the current report.

1.3.6 Archaeological recording of the castle walls

Until the current investigation little modern archaeological recording of the fabric had been undertaken. An exception being the pre-intervention work undertaken on the West Gate in the 1980s (Donel and Jones 2004, 44-45), when much of the fabric of the gate was recorded on a stone-by-stone basis. Further, in the same period, it is evident that the survey team from English Heritage

undertook some pre-intervention rectified photography of the interior of the curtain wall from the West Gate to the western end of the north curtain wall. However, the photographs were never used to plot line drawings. Both data sets have been utilised in the current survey providing important information that has now been lost or covered by subsequent modern repairs.

2.0 FIELDWORK PROCEDURE

2.1 MEASURED SURVEY

2.1.1 Plans

The measured survey consists of plans of the walls, towers and gates with spot heights produced from a set of control stations established within and around the site. Stations formed part of a series of closed traverses within and around the site. Overall dimensional accuracy is within 20mm and all drawings were created at a scale of 1:20 in order to achieve a high dimensional accuracy when reproduced at 1:50. A Reflectorless Total Station Theodolite was used for all survey work.

2.1.2 Elevations

A set of external and internal elevation drawings were produced using instrument survey, combined with rectified photography, depending upon the constraints of the site. All fabric which was medieval was the subject of stone-by-stone drawing; later fabric was drawn in outline. Overall dimensional accuracy was within 20mm and all drawings created at a scale of 1:20 in order to achieve a high dimensional accuracy when reproduced at 1:50.

2.1.3 Sectional elevations

A series of sectional elevations were prepared where appropriate. Overall dimensional accuracy was within 20mm and all drawings were created at a scale of 1:20 in order to achieve a high dimensional accuracy when reproduced at 1:50.

2.1.4 Survey sequence

Measured survey was undertaken on the south curtain wall and Lucy Tower by FAS Heritage in 2008, which included stone-by-stone drawing of areas of all fabric which were thought to be medieval. This survey was extended to the east, west and north walls, towers and gates in 2010. During restoration the walls, gates and towers were scaffolded in phases, cleared of vegetation and joints raked-out. The scaffold allowed high-level and otherwise inaccessible areas of fabric to be studied in detail and following removal areas previously obscured were incorporated into the measured survey.

2.2 DRAWING ENHANCEMENT

The measured survey resulted in a comprehensive set of digital drawings of the site. The drawings were printed at a scale of 1:20 and taken to site for hand enhancement which included the addition of detail on stratigraphy, construction, phasing, masons' marks etc. The amendments to the drawings, from the enhancement process, were subsequently updated on the digital drawings.

2.2.1 Pre-existing fabric recording

Stone-by-stone survey was undertaken of the West Gate as part of the 1982-3 and 1986-92 works to unblock the gate, by David Stocker. These drawings were digitised by FAS Heritage and incorporated into the measured survey drawings.

2.3 WATCHING BRIEF

In addition to the drawing enhancement and additional measured survey a watching brief was maintained on the removal of the modern surfaces from the tops of the curtain walls, which provided an opportunity to examine the medieval fabric. The work was required in order to establish the scope for lowering the level of the wall-walk without affecting the medieval work, and to establish whether dressed stonework survived concealed by modern coverings.

The watching brief was conducted in two stages; an initial examination of test pits, followed by the general removal of large areas of modern paving and modern bedding material revealing the medieval core-work. Further, a general watching brief was maintained on all fabric interventions across the castle the results of which have been incorporated into this report.

3.0 FIELDWORK RESULTS

The results of the archaeological investigation are presented here broadly anti-clockwise around the enceinte starting at the south curtain wall. The results follow in this order: the south curtain wall (east then west), the Lucy Tower, the Observatory Tower, the east curtain wall (south), East Gate, the east curtain wall (north), Cobb Hall, the north curtain wall, the west curtain wall (north), West Gate and the west curtain wall (south). The measured survey is not presented here exhaustively. Where there are expanses of uniform medieval stonework with no features of note, or in areas of heavy restoration with sparse surviving medieval stonework, the measured survey is not reproduced here, but form part of the project archive.

3.1 SOUTH CURTAIN WALL EAST

3.1.1 Documentary summary

Medieval

Medieval references to works to the curtain walls are very sparse and any expenses incurred in either their construction or repair are concealed within general costs for repairs to the castle, or predate the period when the works would have been recorded in the surviving Exchequer accounts. However, there are two possible references which might be concerned with the south curtain wall from the 12th century. The of license 1101-1115, granted to Bishop Bloet by the king, allowed for a gateway to be made through the wall (*muro*) of the king's castle 'provided the wall be thereby not weakened' (Foster and Longley 1931, 20-21). It is possible that the license resulted in the insertion of the early postern gate that is visible in the south curtain wall at the bottom of the Observatory Tower mound.

From the end of the 12th century the Pipe Roll has an entry for the bailey of the castle being strengthened at a cost of £82 in 1192-93, the work undertaken by Gilbert Hurell and Miles the mason (PR 5 Richard 1, 37). Although not explicit, this might refer to the construction and re-construction of sections of curtain wall.

In 1217-18 Nicholaa de la Haye received 40 marks for repairs to the castle and a further 60 marks for improvements (PR 2 Henry III, 94), while in the same year a further sum of 40 marks was to paid by the Mayor and Provosts of Lincoln for repairs to the castle. In total Nicholaa de la Haye received the total sum of £130 for repairs in the period 1218 to 1220 (Brown *et el*. 1963, 705). In 1224 the Earl of Salisbury was to receive £374 15s. 0d. from the Exchequer for the money he had paid out by royal precept for the work on the castle and it is apparent from the Close Roll that this sum of money was a back payment for work in the period from 1216 to 1218 (*Ibid*). In summary, substantial works were underway to the castle in the period 1216 to 1220 which might have included works to the south curtain wall.

The inquisition of 1327 briefly mentions that the castle's walls and gates were ruinous and would cost £1000 to repair (PRO E101/484/10). There are no further Exchequer records to suggest that repairs were subsequently undertaken to the walls and gates. However, a detailed examination of the Duchy of Lancaster Accounts, preserved in the Public Records Office, might yield some further references to these structures.

18th century

In Edward King's account of the castle, published in 1782, there is a description of the route along the curtain wall from the Observatory Tower to the Lucy Tower:

> 'But on the side, at (e), where a communication really was made with the rest of the buildings of the castle, the utmost caution manifestly was observed; for here we find, going from the tower at (b) (which tower also is upon another artificial mount), the remains of a passage, or covered way, at (d), along the upper part of the wall, and leading to a flight of steps on the side of the

> keep. To our astonishment however, when we come to examine them, there is no *immediate* passage into the keep, nor could there ever have been such; but they must clearly have ascended, with many windings, towards the top of this great tower, and must then have descended again, though a strong projecting and adjoining building, which appears at (h), before any entrance could be gained to it' (King 1782, 263).

While King's account is not necessarily entirely accurate, his observation that there appeared to be a passage on the east side of the Lucy Tower, also shown on his plan on the eastern part of the south curtain wall approaching the side of the tower, can be tentatively supported by archaeological evidence.

19th century

The Lucy Tower and south curtain wall were amongst the earliest parts of the castle to receive the attention of E. J. Willson. Repairs to the 'two wings of the keep' were undertaken in 1835 and in 1837 and Willson records that he

> Repaired western portion of the south wall, completed the battlements in that part and on the eastern portion of the south wall. SW angle rebuilt, and the fractured part of the south wall, where it joins the modern piece rebuilt, scaffold holes stopped. (Willson 786/G 80)

3.1.2 Exterior

The south curtain wall consists of two stretches of walling to the east and west of the Lucy Tower, terminating at the east end with the Observatory Tower and at the west curtain wall at the west end (Figure 2). The eastern stretch of the wall shifts alignment twice from the Lucy Tower; first at the bottom of the Lucy Tower motte and second at the base of the Observatory Tower mound. The wall thickness at its base varies between *c.*2.6m and *c.*3.0m, until the final *c.*8.5m of walling which connects with the Observatory Tower which measures less than *c.*1.0m thick.

Observatory Tower end

The exterior of the east end of the curtain wall descends the Observatory Tower mound to where the ground has been levelled (Figure 3). The first *c.*1.3m of walling attached to the corner of the Observatory Tower was refaced in the 1830s and retains no features of note. However, the adjacent *c.*5.7m of wall facing is largely medieval with later work to the bottom and top of it. Bonded with a brown lime mortar the main features of the medieval work are two putlog holes set at the same level and two courses of pitched masonry forming a herringbone pattern (*opus spicatum*)(Plate 4). The herringbone courses correspond in terms of position with a similar feature on the interior of the

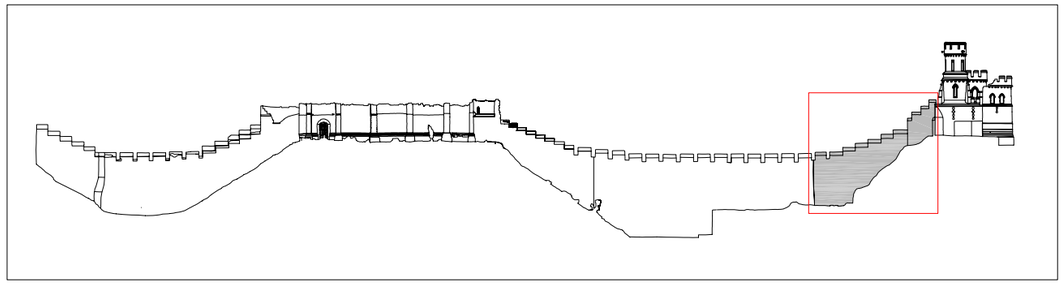
Plate 4 Herringbone masonry in the south curtain wall to the west of the Observatory Tower

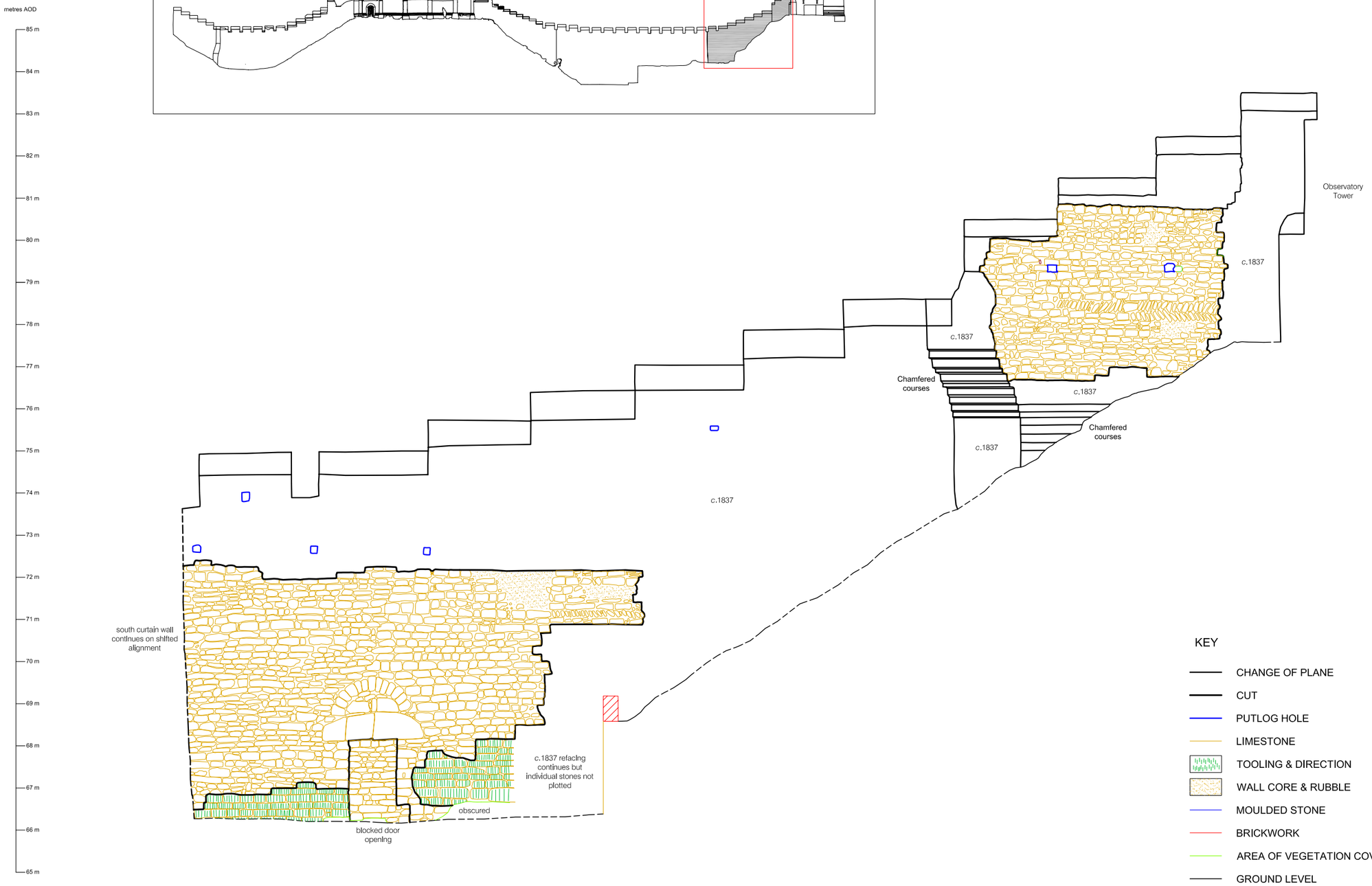
Field Archaeology Specialists Ltd Unit 8 Fulford Business Centre 35 Hospital Fields Road York YO10 4DZ Licence No AL100005790

Plan of the south curtain wall and Lucy Tower

Scale 1:750

Figure 2





Exterior of the south curtain wall east, adjacent to the Observatory Tower

Scale 1:100

Figure 3

wall, the bottom courses of the medieval work on both sides of the wall set at just over *c*.78.0m AOD. The top of the wall has been finished with three merlons, largely reconstructions, but the central merlon's west side incorporates some dressed medieval masonry, indicating that the step in the wall is an original medieval feature.

The lower part of the wall has been refaced as part of the 1830s repairs to the wall and incorporates a series of chamfered courses in the lower part of the wall. There is no evidence to indicate whether the chamfered courses are a replicated medieval feature, although this is a possibility.

In plan, this eastern length of the curtain wall leading up to the Observatory Tower is only *c*.1.0m thick for a distance of *c*.8.5m, in contrast to the *c*.2.6m-*c*.3.0m generally employed along most of the south wall (see Figure 2). There is no clear reason for this discrepancy unless there has been an early rebuild of the final section of the wall, or if it was never intended that the wall-walk should extend to the Observatory Tower; this narrow wall thickness precludes the provision of a medieval wall-walk.

To the west of the extant patch of medieval masonry the curtain wall thickens to the south, with further chamfered courses employed in the lower part of the returning wall. This section of walling, and for the next *c*.7.3m to the west has been entirely refaced in the 1830s (see Figure 3). Plans of the wall made by Willson before the repair works denote that the external face of the wall was in poor condition with an irregular face (Plate 5). This latter section of the wall follows the descent of the Observatory Tower mound, the tail of the base of which has been cut away forming a vertical drop of *c*.2.0m; a brick wall acts as a revetment against the mound to the east.

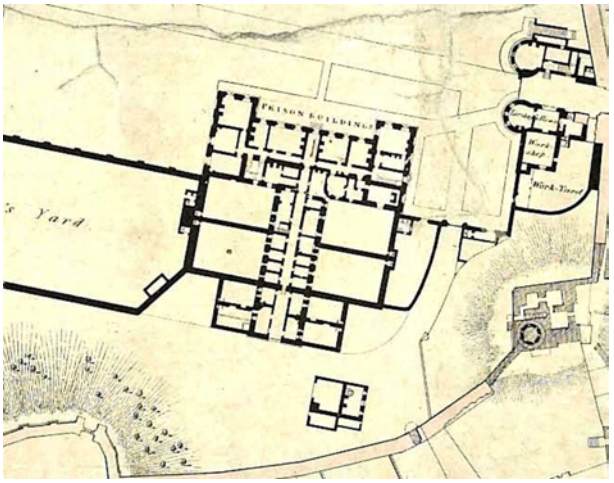


Plate 5 Segment of a plan of the south curtain wall by Willson, dated 1832

The next section of surviving medieval facing masonry starts close to where the mound has been cut back, and extends to where the curtain wall shifts alignment slightly towards the north. The medieval facing survives to a height of *c*.6.0m, the upper part of the wall having been refaced and, in the case of the merlons, rebuilt in the 1830s and later. The medieval work is of two distinct phases with that to the east of large roughly squared blocks, largely regularly coursed, with a single course of pitched masonry visible in the eastern part. That to the west is of smaller coursed blocks. Incorporated into the former phase is a blocked door opening with massive stone lintel and semicircular relieving arch above. The blocking of the door opening is relatively early, bonded in a white mortar with some small fragments of tile packing employed. The door opening is of a similar form, although bigger, than that which survives at first floor on the west elevation of the West Gate of the castle and is consistent with a 11th or early 12th-century date. A sketch drawing in the Willson collection shows the doorway in the first half of the 19th century, helpfully indicating the area of new stonework and that the lintel was already cracked at this time (Plate 6). Willson's plans, originally surveyed in 1832, also indicate that

the door opening had an internal rebate, now buried within the blocking.

To the west of the door opening the medieval masonry is generally of smaller roughly dressed blocks and of a different phase which extends around the change of alignment (Figure 4). It appears that this section is a later medieval refacing or possibly rebuilding, perhaps at a point of structural weakness or lost feature.

Plate 6 Drawing of the postern doorway in the south curtain wall by Willson

Along the bottom of the wall there has been a considerable amount of stone replacement, with the new stonework exhibiting prominent vertical tooling typical of the 1830s work. The area of refacing forms a slope across the wall tapering down to the west, and appears to follow roughly the profile of the Observatory Tower mound before it was cut back. A plan of the castle by Anthony Bower, dated 1813, shows the Observatory Tower mound extending along the curtain wall to the west to roughly halfway to the Lucy Tower motte (Plate 7); by the time that Willson surveyed the castle in 1832 this feature appears to have been cut away. Thus the refacing was undertaken in the 1830s subsequent to the lower part of the wall being exposed between 1813 and 1832.

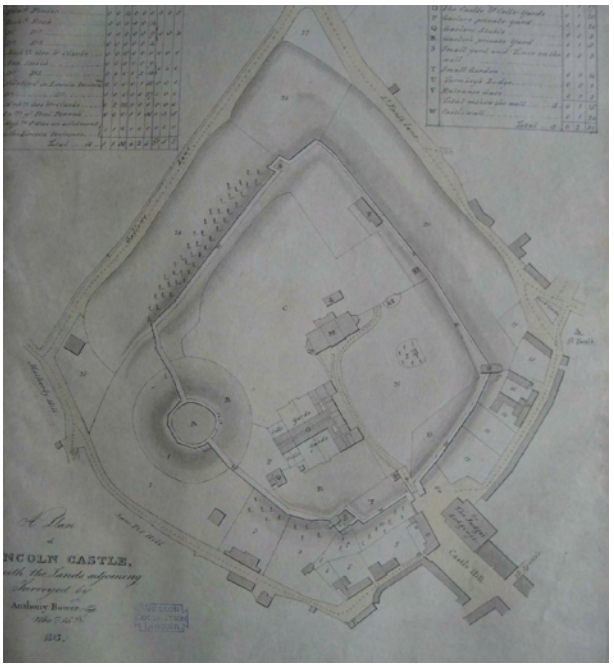
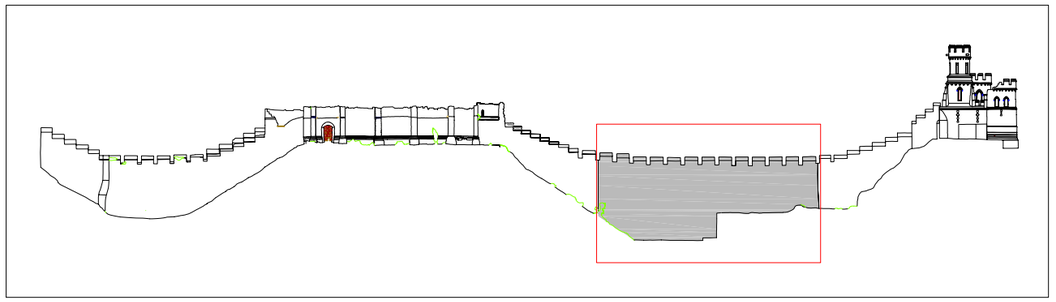


Plate 7 Plan of the castle by Antony Bower, dated 1813

Central section to the Lucy Tower east chamber

Beyond the change in alignment, the curtain wall follows an undiverting alignment towards the base of the Lucy Tower motte (see Figure 4 and 5). The surviving areas of medieval facing are quite extensive and appear to be fairly uniform, with putlog holes appearing at regular intervals in the same course levels, until the wall ascends the motte. This would suggest that the medieval fabric up to the Lucy Tower motte is largely of one period of construction. It is notable that evidence for such features as herringbone laid masonry are entirely absent on this section of wall, although present (in recreated form) on the interior (northern) elevation. There are no surviving areas of the medieval wall head until close to the east wing of the Lucy Tower, all having been rebuilt and refaced in 1837 and later.

The bottom *c.*1m of the eastern section of the wall has been refaced with stones dressed with vertical tooling, typical of the 1830s work. The refacing was probably undertaken following the levelling of the



KEY

- CHANGE OF PLANE
- CUT
- PUTLOG HOLE
- LIMESTONE
- TOOLING & DIRECTION
- WALL CORE & RUBBLE
- MOULDED STONE
- RENDER
- AREA OF VEGETATION COVER
- GROUND LEVEL
- WO WINDOW OPENING

metres AOD

76 m
75 m
74 m
73 m
72 m
71 m
70 m
69 m
68 m
67 m
66 m
65 m
64 m
63 m
62 m
61 m

c.1837 and later facing

c.1837 and later facing

c.1837

obscured

obscured

obscured

fence post

obscured

projecting trellis

Inserted stone

obscured

rendered

projecting wall

obscured

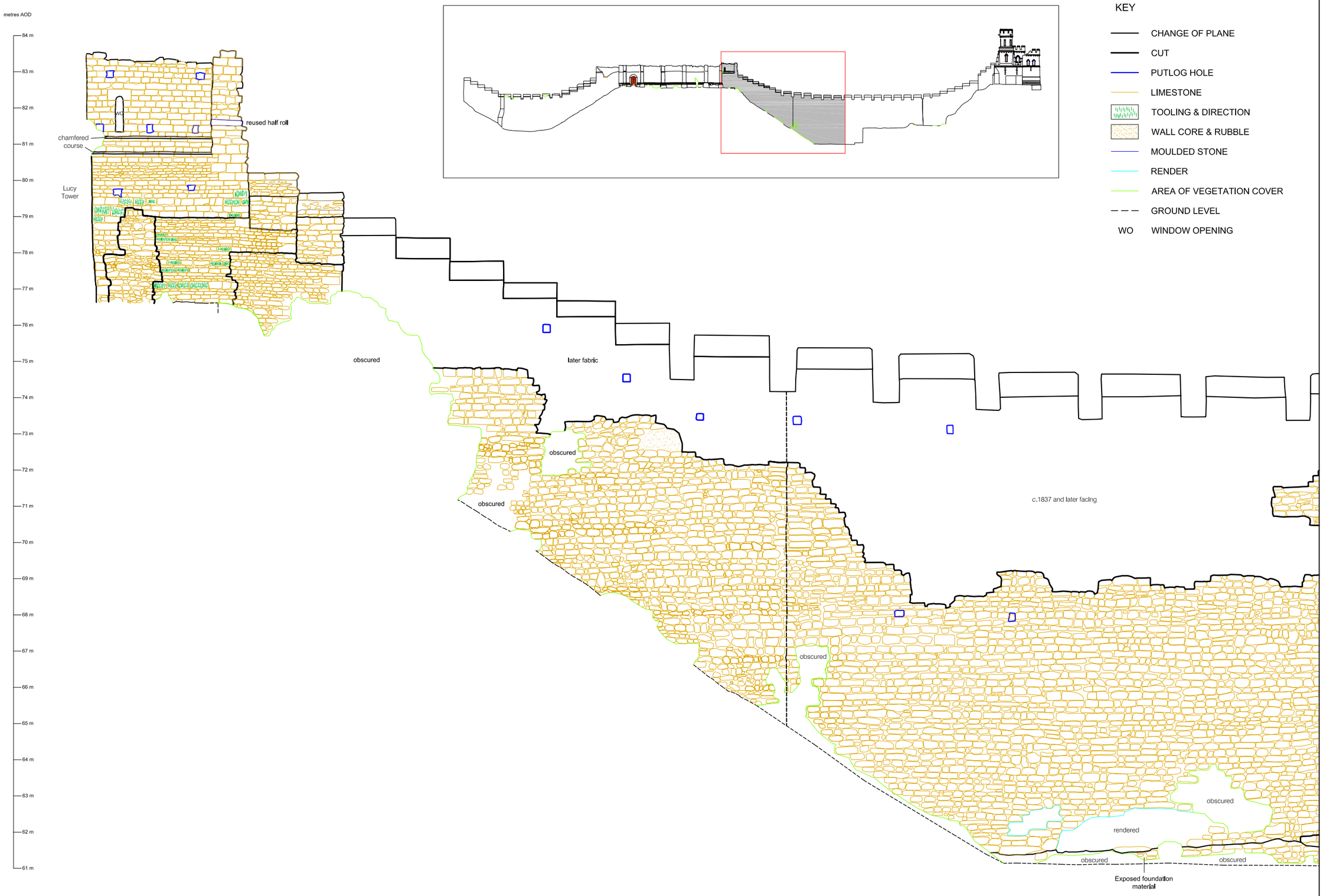
obscured

Exposed foundation material

Exterior of the south curtain wall east, central section

Scale 1:100

Figure 4



Exterior of the south curtain wall east, adjacent to the Lucy Tower

Scale 1:100

Figure 5

earthwork that extended in front of the wall, a continuation of the tail of Observatory Tower mound.

To the west of the refacing along the bottom of the wall there is a substantial vertical drop in the ground level of *c*.4.0m (see Figure 4). The change in level is fossilized within the current property boundaries by a retaining wall and must reflect the edge of the lower area that formerly surrounded the Lucy Tower motte. While the drop in level is now nearly vertical, there is some evidence in the curtain wall facing to suggest that it was formerly a steep slope with a profile close to that of the motte slope. Cutting back of the slope to form a vertical edge would have exposed the curtain wall footings and foundations which would have required stabilization. It is notable that there are areas of 1830s refacing, with distinctive vertical tooling, adjacent to the west of the retaining wall which might reflect where the profile has been cut back.

As the wall ascends the Lucy Tower motte there is a further adjustment of alignment to the north, but the fabric appears to be of one date spanning the change of alignment (see Figure 5). However, at a distance of *c*.10m from the east wing of the Lucy Tower there is a vertical junction in the lower part of the wall; also apparent on the internal face of the wall. The vertical junction extends to a height of *c*.2.5m, where the medieval fabric from the east extends over the top of it. This would suggest that originally there was a lower section of medieval walling extending down from the Lucy Tower east wing, subsequently subsumed into the main south curtain wall.

East chamber of the Lucy Tower

The north elevation of the Lucy Tower east wing has been subject to a considerable amount of reconstruction in the 1830s, leaving little medieval work exposed. A rough irregular patch of medieval work has been left in the lower part of the elevation, but appears to be mainly late medieval patching. This elevation of the east chamber originally formed an internal face to a larger, square, building attached to the east side of the Lucy Tower a plan of which was provided by Willson (Plate 8). The current existing upper part of the elevation, with its small arch-headed window, is entirely of the 1830s and bares little relation to the medieval arrangement.

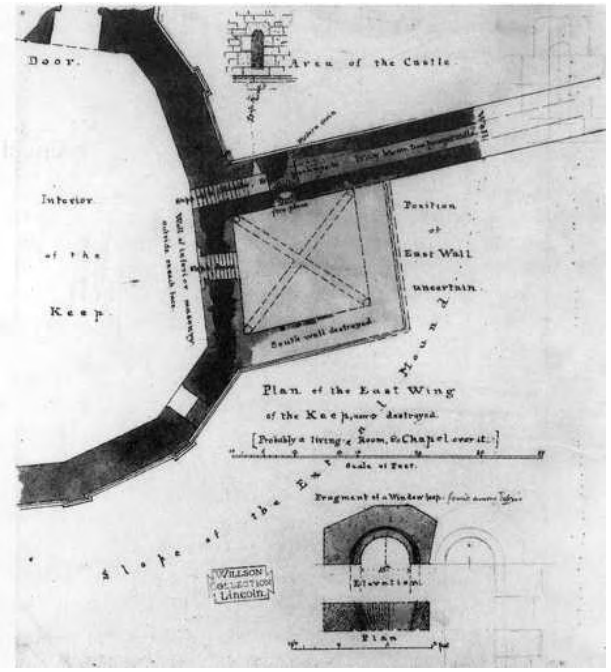


Plate 8 Plan of east chamber by Willson, dated 1832

3.1.3 Interior

The interior of the south curtain wall east has been heavily refaced along much of its length and where that is the case is not reproduced in its entirety here.

Observatory Tower end

The interior face of the eastern stretch of the curtain wall received extensive refacing in the second half of the 20th century. Only the eastern and western ends retain any areas of the original medieval face-work. At the eastern end, where the wall joins the Observatory Tower, there is an area of *c*.1837 refacing *c*.8m wide, which contains within it an area of original medieval face-work (Figure 6). The medieval work consists of well squared blocks of stone laid in regular courses. Incorporated into the masonry are two courses of pitch laid stone forming a herringbone pattern; the courses are at the same level as the herringbone that is visible on the exterior face of the wall.

Central section to the Lucy Tower east chamber

To the west of the surviving medieval face-work the curtain wall has been totally refaced in the second half of the 20th century for a length of *c*.55m, leaving little archaeological evidence to be examined. At the base of the Observatory Tower mound is a blocked arch-headed door opening. Externally this can be seen to be an original feature, but internally all the visible stonework has been replaced. Further to the west are two small areas of herringbone masonry, all created in renewed stone so that it unclear whether these emulate original features or not (Figure 7).

As the curtain wall ascends the Lucy Tower motte, the 20th-century refacing gives way to areas of medieval work and refacing of *c*.1837. Within the first patch of surviving medieval work is a vertical junction which matches the position of a similar feature on the exterior face of the wall. A further discrete area of medieval facing survives to the west, but of identical character and coursing to that to the east.

East chamber of the Lucy Tower

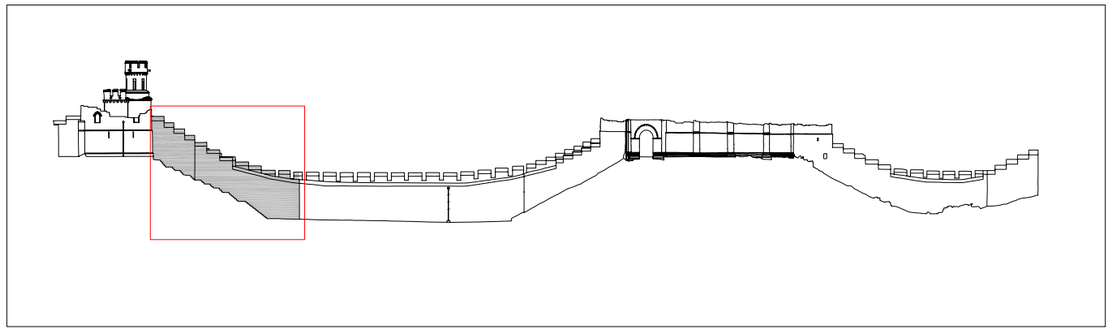
The Lucy Tower east wing elevation retains two phases of medieval masonry (see Figure 7). The earliest directly abuts the Lucy Tower surviving to a maximum length of *c*.1.8m. The stones employed are comparatively large and the fabric incorporates a putlog hole. The second phase of medieval masonry forms the majority of the elevation of the east chamber and incorporates a chamfered course in the upper part of the elevation, in addition to an arch-headed window opening; the latter is the only medieval window opening on the Lucy Tower which is certainly an original feature.

Both phases of the medieval work exhibit evidence for slumping towards the east, down the motte slope, indicating that the stability of the medieval stone structures on the motte had not been particularly good.

The upper stone courses of the wing are replacements of the 1830s, as are the eastern quoin stones. Further 1830s work is located at the bottom of the elevation, adjacent to the Lucy Tower, employing the characteristic vertical tooling.

3.1.4 Watching brief

The watching brief was mainly concerned with the removal of the modern concrete slabbed surfaces from the wall-walks on the curtain wall, removal of the modern bedding material and cleaning of the



KEY

CHANGE OF PLANE

CUT

LIMESTONE

GROUND LEVEL

metres AOD

85 m
84 m
83 m
82 m
81 m
80 m
79 m
78 m
77 m
76 m
75 m
74 m
73 m
72 m
71 m
70 m
69 m
68 m
67 m

Observatory Tower

c.1837

modern re-facing

modern re-facing

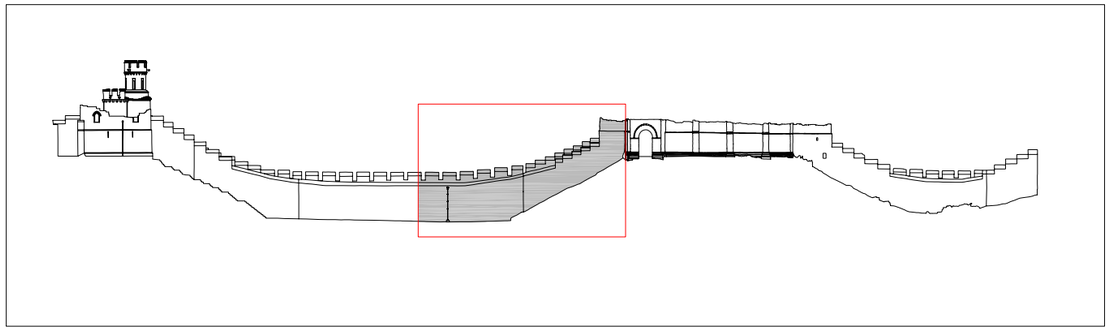
south curtain wall continues on a shifted alignment

modern re-facing over door blocking

Interior of the south curtain wall east, adjacent to the Observatory Tower

Scale 1:100

Figure 6



KEY

- CHANGE OF PLANE
- CUT
- PUTLOG HOLE
- LIMESTONE
- TOOLING & DIRECTION
- AREA OF VEGETATION COVER
- GROUND LEVEL
- BRICK
- IRON

metres AOD

85 m
84 m
83 m
82 m
81 m
80 m
79 m
78 m
77 m
76 m
75 m
74 m
73 m
72 m
71 m
70 m
69 m
68 m
67 m

c1837 rebuilding of corner

wo

c1837

c1837

modern re-facing

modern re-facing replicating original herringbone

Interior of the south curtain wall east, adjacent to the Lucy Tower

Scale 1:100

Figure 7

exposed medieval core-work. The watching brief was conducted in two stages; the initial stage consisted of the cutting and examination of three test pits, the second stage consisted of the examination of the wall-head once the majority of the modern fabric had been removed.

Test pits

A total of two test pits were cut on the eastern stretch of the wall (see Figure 2). All of the test pits were located against the parapet wall in order to establish whether any dressed stone work might have been concealed by the heightening of the wall-walk in the 20th century. Further, the test pits were intended to establish the level at which medieval stonework might survive beneath the modern make-up of the wall walk.

Both test pits revealed the same sequence. Removal of the modern concrete slabs and their associated bedding material exposed the top of the medieval core-work at a depth which varied between *c*.0.35m and 0.55m (Plates 9 and 10). The parapet wall could be seen to have been constructed upon rubble work bonded with a mixture of hydraulic type lime mortar and grey Portland cement. The Portland cement was generally close to the surface of the rubble and probably represents a consolidation of the rubble face before the modern concrete slabs were laid.

Plate 9 Test pit cut into the south curtain wall walk, east end

Plate 10 Test pit cut into the south curtain wall walk, west end

Removal of all modern surfaces

Following the test pit investigations the entire modern surface of the parapet wall walk was removed in addition to the modern bedding material (Plate 11). In general, the sequence observed through the test pitting could be seen along the length of the curtain wall. However, at the western end, where the parapet level increases to meet the Lucy Tower, there was a thick dump of material beneath the modern bedding material. Largely composed of soil and rubble there was no dating material within the dump material that was sampled but, in view of the fact it was retained by the 19th-century parapet, it is likely to be either contemporary or perhaps slightly later than the parapet. Although only a limited amount of the dump material was excavated, a stone feature was partially uncovered (Plate 12). The feature appeared to be the part of the original footing of the rear (bailey side) parapet wall, on a slightly different alignment to the 19th-century replacement and, in view of the fact that it was projecting out from beneath the latter, suggests that the earlier parapet wall was a much thicker structure. It is also possible that this feature relates to Edward King's observations of

1782 in which he describes a passage on the east side of the Lucy Tower.

Plate 11 South curtain wall parapet wall-walk with modern surface removed

3.2 SOUTH CURTAIN WALL WEST

3.2.1 Documentary summary

Medieval

The same medieval references apply to the south curtain wall west as to the east section and attention (see Section 3.1.1). However, it is worth particularly noting the license of 1101-1115, granted to Bishop Bloet by the king, which allowed for a gateway to be made through the wall (*muro*) of the king's castle 'provided the wall be thereby not weakened' (Foster and Longley 1931, 20-21). There is a further, now vanished, gate in the western section of the south curtain wall that the license could refer to, rather than the postern gate at the bottom of the Observatory Tower mound.

Plate 12 Stone feature uncovered on south curtain wall

17th century

Although no repairs are documented to the south curtain wall in this period it is worth noting that John Speed's draft plan of Lincoln, made in 1607, portrays a gate within the west end of the south curtain wall (see Plate 3).

19th century

The Lucy Tower and south curtain wall were amongst the earliest parts of the castle to receive the attention of Willson. Repairs to the 'two wings of the keep' were undertaken and in addition in 1835 and in 1837 Willson

> Repaired western portion of the south wall, completed the battlements in that part and on the eastern portion of the south wall. SW angle rebuilt, and the fractured part of the south wall, where it joins the modern piece rebuilt, scaffold holes stopped. (Willson 786/G 80)

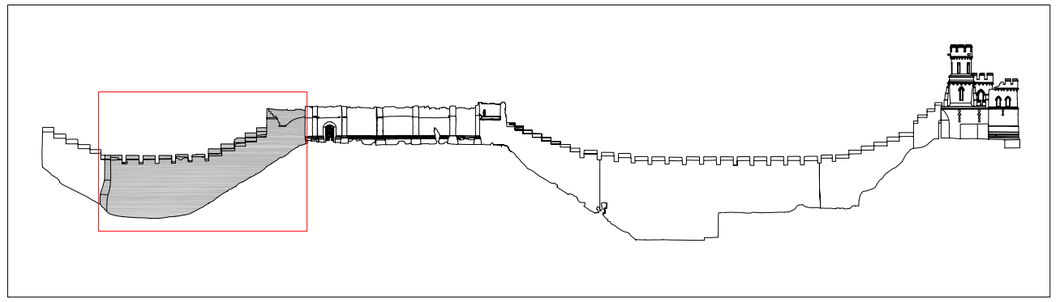
3.2.2 Exterior

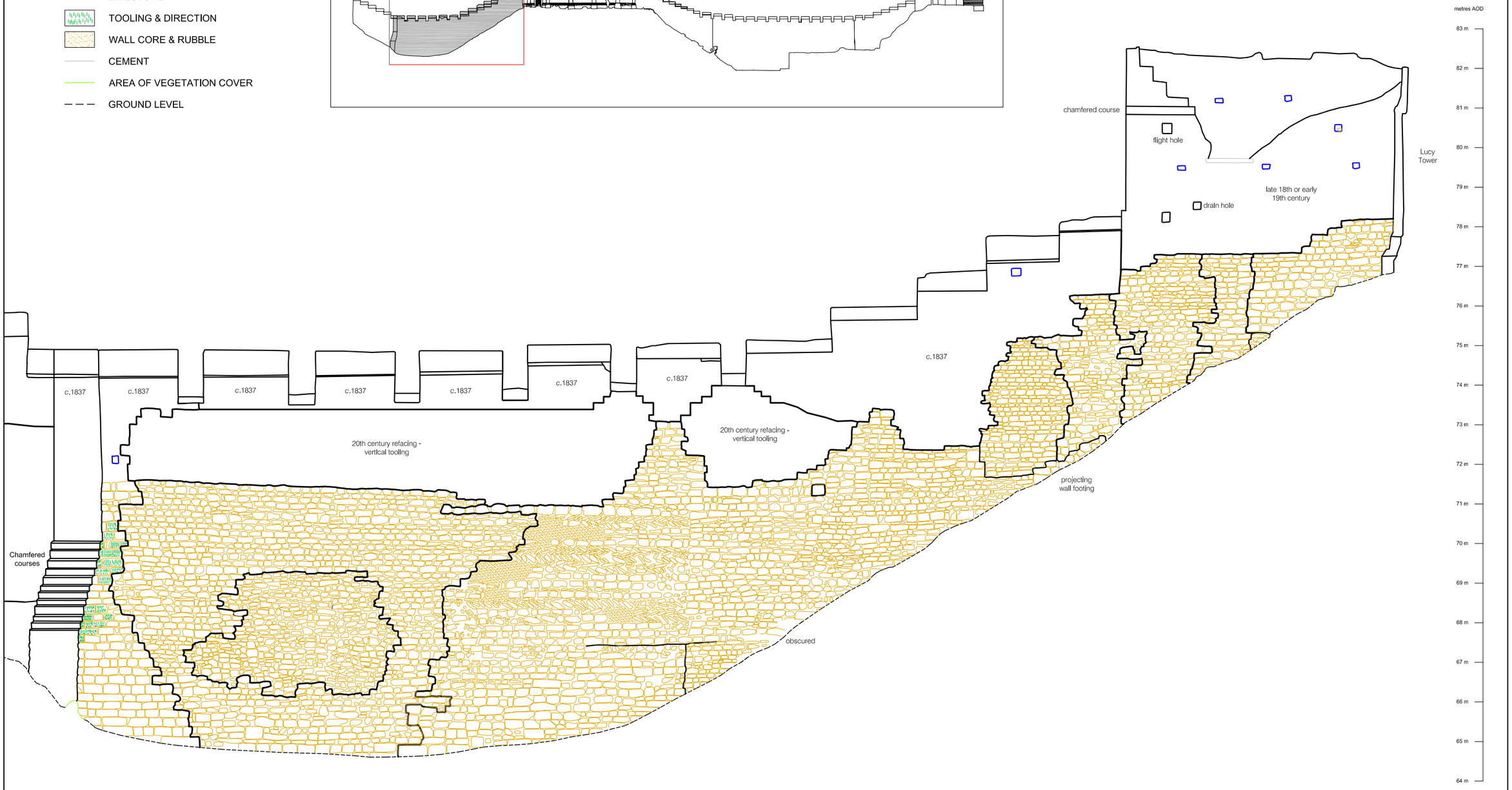
The western stretch is on a roughly NW-SE alignment, its eastern end ascending the Lucy Tower motte. The western stretch of the wall is generally *c*.2.3m thick at the bottom, while the final *c*.8.5m of walling, which connects with the west curtain wall, is significantly thinner at less than *c*.1m.

The exterior of the western stretch of the curtain wall, to the west of the Lucy Tower, is now within the grounds of Castle Moat House (Figure 8 and 9). The fabric extends from the top of the Lucy Tower

KEY

- CHANGE OF PLANE
- CUT
- PUTLOG HOLE
- LIMESTONE
- TOOLING & DIRECTION
- WALL CORE & RUBBLE
- CEMENT
- AREA OF VEGETATION COVER
- GROUND LEVEL

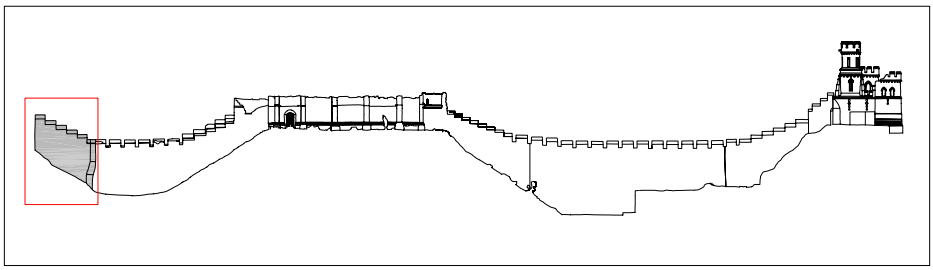


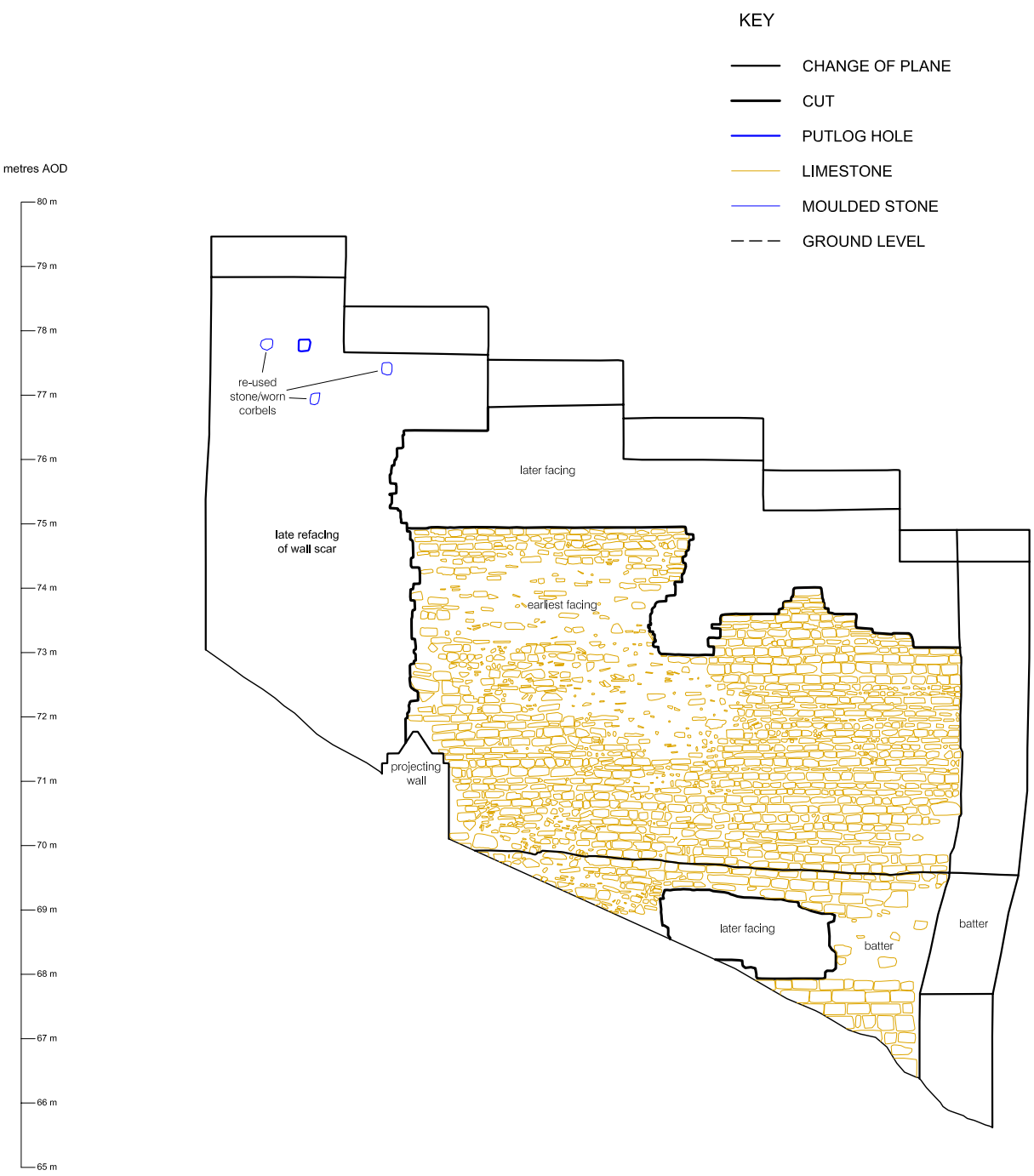


Exterior of the south curtain wall west, adjacent to the Lucy Tower

Scale 1:100

Figure 8





Exterior of the south curtain wall west, adjacent to the west curtain wall	Scale 1:100	Figure 9

motte, descends to the base and levels before ascending to meet the western curtain wall. The fabric has a fairly complex history with several major changes in the fabric being evident. Due to repair and refacing in the past 200 years some of the junctions in the masonry are not fully traceable, but sufficient is exposed to establish the basic chronology. Significantly, a view of 1784 of this area of the fabric was made by Grimm before extensive refacing and rebuilding of the curtain wall had taken place (Plate 13). Willson undertook a considerable amount of repair work to this section of the curtain wall which is recorded in his diary of the works in 1837:

> Repaired western portion of the south wall, completed the battlements in that part and on the eastern portion of the south wall. SW angle rebuilt, and the fractured part of the south wall, where it joins the modern piece rebuilt, scaffold holes stopped (LA Willson 786/G 80).

West chamber of the Lucy Tower

The base of the west wing divides into three distinct areas of fabric. Closest to the Lucy Tower is an area of facing masonry consisting of regularly coursed, large, roughly squared limestone blocks, in total *c.*3.5 in length, surviving to a height of *c.*1.5m in height (see Figure 8). It contains no features of note but is clearly medieval judging from the bonding mortar.

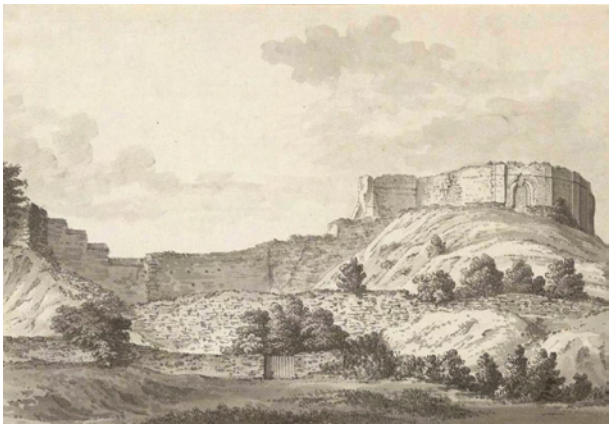


Plate 13 Drawing of the south curtain wall and Lucy Tower by Grimm, dated 1784

To the west of the area of medieval work is a sequence of three vertical joins in the masonry, defining a further two phases of masonry. The first of these forms a vertical strip, a maximum of *c.*1.4m in width, bonded with a dark brown lime mortar and consisting of large roughly squared blocks of limestone. This appears to represent either the infilling of a feature or the facing over of a wall scar. To the west is a further phase of masonry, a maximum of *c.*2.5m wide, more irregular in coursing and of smaller stones bonded with a light brown sandy mortar. This area might also represent a wall scar and accords with a wall footing that was discovered in the evaluation of the Lucy Tower motte surface (FAS 2010, Fig.4). The western junction also accords with the west end of the super structure of the west wing, although this had been largely reconstructed in the late 18th or early 19th century judging from internal evidence (FAS 2011).

The upper part of the west wing elevation has been largely rebuilt, rather than simply refaced, judging from internal evidence; the reconstruction work dating from the late 18th or early 19th century.

Curtain wall

The west end of the west wing accords with a strip of irregular masonry bonded with a dark brown soft lime mortar, extending *c.*2m in width to the west, which relates to a projecting wall footing at the base of the wall. The distinctive mortar employed would indicate that this is not part of any of the early medieval phases seen elsewhere on the curtain wall, and must be a late medieval, or post-medieval making good following the removal of a projecting feature. To the west is further patch of refacing,

which, judging from the white mortar and small well squared stones employed, must be of late or 18th or early 19th-century date.

Herringbone masonry

The next section of wall to the west consists of a large area of surviving early facing masonry extending to over *c*.14m in length. This fabric forms into two areas; a section that ascends the Lucy Tower motte, *c*.7.5m in length, and a section that starts at the base of the motte and extends *c*.7m to the west. The first section from the east is of coursed, large, roughly squared limestone blocks bonded in a yellow sandy mortar; the fabric survives to a height of *c*.6.7m in places. Close to the bottom of the motte this fabric terminates along a vertical line and, instead, is laid in large areas of herringbone masonry to the west. The vertical line is not a junction in terms of phasing as the mortar in the stone joints can be seen to run through between the two areas and to be of an identical composition (Plate 14). Further, where facing work has been lost, tip lines are visible within the core-work which run through the two areas of masonry. Thus the differences in the fabric has to relate to intended design with a different constructional technique employed because of either constructing upon of off the Lucy Tower motte. The vertical line is provided with further emphasis towards the bottom of the elevation where that portion with the herringbone masonry batters out significantly resulting in a pronounced return to the north to meet the portion that ascends the motte.

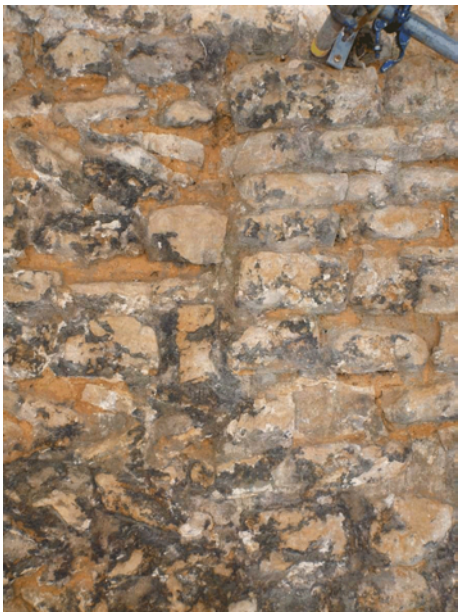


Plate 14 Relationship between coursed blocks and herringbone stonework, south curtain wall, western section

The herringbone is arranged in three bands towards the top of the surviving fabric. The upper band has two courses of pitched stones, the middle band has five courses of pitched stone, while the bottom band has three courses. Above the bottom band there is a course of small flat stones, a further course of large stones and above these a course of small stones. The lower *c*.3m of walling consists of large coursed stones. The overall effect would have originally been highly decorative. The Grimm view also indicates that there were a row of putlog holes in the upper part of this segment of the fabric, now lost (see Plate 13).

It is evident that the herringbone masonry continued further to the west but has been covered over by later post-medieval facing, effectively a veneer of stone over the original face work. The post-medieval facing extends to the west in excess of *c*.8m, and up to a height of *c*.6.7m. It consists of roughly dressed limestone blocks largely in regular courses. Judging from John Speed's 1607 draft plan the latter material relates to the removal of a gateway, probably during the 17th century. An irregular area in the middle of the stonework, measuring *c*.3.5m square, has been repaired using a random rubble facing bonded in a hard cement-based mortar, presumably following a fall of the face-work in this area. The repair is clearly not 19th-century and appears out of character with the refacing that was undertaken in the later 20th century. It is probably an emergency repair that was undertaken

in the mid-20th century.

Beyond the medieval refacing work the curtain wall returns, stepping back to the north, the curtain wall thinning beyond this point to the west. The return corner has been refaced in ashlar blocks, with vertical tooling on the blocks, and provided with a partial multiple chamfered profile. This work might have been undertaken by Willson in *c.*1837. If so, it was an afterthought as the refacing of the corner post-dates the rebuilding of the merlons to the east, explicitly recorded by Willson as completed in that year (LA Willson 786/G 80).

The final section of the south curtain wall runs to the southwest corner of the castle enclosure, climbing the rampart on which the west curtain wall is constructed. The upper part of the wall, with its merlons, are part of Willson's reconstruction of 1837, as is the final *c.*3m of facing. However, a substantial area of medieval facing survives from the stepping back of the wall face, extending for *c.*8.3m to the west (see Figure 9). In character the facing masonry is quite different to other areas of medieval face work on the exterior of the south curtain wall, consisting of narrow regular courses of small stones. The proportions of the stones would suggest that they have perhaps been robbed from a Roman source.

3.2.3 Interior

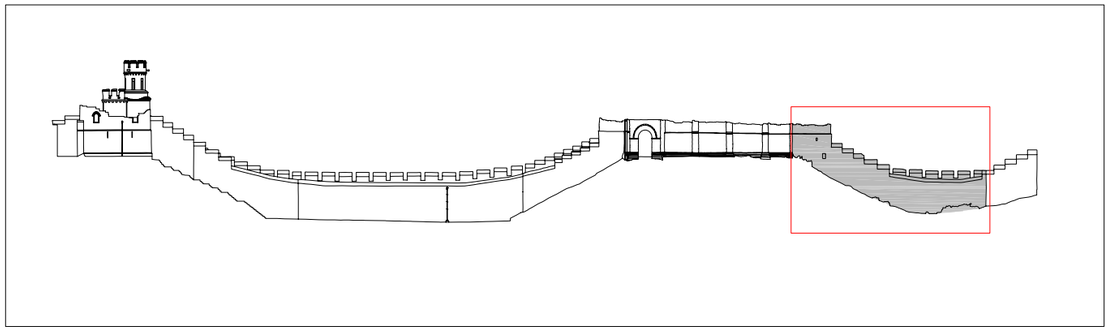
West chamber of the Lucy Tower

As visible in the interior elevation of the south curtain wall west, the exterior of the west chamber of the Lucy Tower has the most complex sequence of medieval development of all the Lucy Tower elevations, with three phases being clearly defined (Figure 10). The earliest phase is linked with the Lucy Tower and extends *c.*8.7m to the west and forms the majority of the fabric in the lower part of the elevation below the level of the chamfered course. It is generally constructed of large well squared blocks of masonry in regular courses, although there are areas where the blocks have either fragmented or where there has been some localised patching and repair. No putlog holes were identified in the course of examining the fabric, although the masonry joints had not been raked-out before the survey making their identification difficult. This first phase of the fabric contained no features of note.

The second phase of the fabric is represented by the insertion of the garderobe chute and surrounding masonry, including a some original quoin stones of the western corner of the chamber. Generally, the stones used in the second phase of facing are of much smaller size, although still roughly coursed.

Above the first two medieval phases the elevation has been re-faced, or rebuilt, as part of the 1835 repairs to the chambers by Willson. Incorporated into this work is a chamfered course and a small arch-headed loop window. It is not now clear whether the window copied a medieval feature or is entirely a creation of the 19th-century restoration; Willson does not record precisely what alterations he undertook on this part of the castle fabric.

A small patch of masonry to the west of the garderobe chute, *c.*1.6m in height and maximum of



Interior of the south curtain wall west, adjacent to the Lucy Tower | Scale 1:100 | Figure 10

c.1.3m in width, appears to be of 18th-century date, bonded in white mortar. The late 18th-century Grimm drawing appears to show that there was a raking buttress in this position, of which this small area of fabric might be the last remaining part; the remainder would have been removed during Willson's 1835 restoration. The bottom of the west chamber elevation has received some repair in the 1830s, the stones retaining some vertical tooling which is associated with work of this period.

The observed sequence of phases matches fairly closely the sequence recorded on the interior wall face within the wing compartment (FAS 2011), although within the compartment only the higher level masonry was exposed.

Curtain wall

The curtain wall descends the Lucy Tower motte to the west where a further substantial area of medieval facing survives. This cuts into the earliest phase of the masonry on the west wing, but appears to be of relatively late medieval date judging by the mortar employed. The most prominent feature within this phase of the fabric is the steep stepping that is observable across the top of the area. This either represents the stepping of the parapet walk or a series of merlons, set at a lower level than their 1837 replacements. The heights of the stepping at between *c*.0.5m to *c*.0.75m suggest that they are merlons, rather than steps, and indicate the degree to which the curtain wall was heightened during the 1837 repairs.

To the west, the facing masonry was largely replaced in 1837 and the 20th century leaving a small area of isolated herringbone-laid stones and two further discrete areas of post-medieval face work which relate to the removal and blocking of a former gateway. Other areas of medieval face work might survive in the lower part of the wall, but this is currently obscured by the presence of dumped material.

The final section of the wall, which ascends to meet the west curtain wall, was refaced in 1837, although externally this thinner section of wall can be seen to be medieval in origin.

3.2.4 Watching brief

The watching brief was mainly concerned with the removal of the modern concrete slabbed surfaces from the wall-walks on the curtain wall, removal of the modern bedding material and cleaning of the exposed medieval core-work. The watching brief was conducted in two stages; the initial stage consisted of the cutting and examination of a test pit, the second stage consisted of the examination of the wall-head once the majority of the modern fabric had been removed.

Test pit

A single pit was cut located against the parapet wall in order to establish whether any dressed stonework might have been concealed by the heightening of the wall-walk in the 20th century (see Figure 2). The test pit was also intended to establish the level at which medieval stonework might survive.

The test pit revealed the same sequence as had been observed on the eastern section of the wall. Removal of the modern concrete slabs and their associated bedding material exposed the top of the medieval core-work at a depth which varied between *c.*0.35m and 0.55m. The parapet wall could be seen to have been constructed upon rubble work bonded with a mixture of hydraulic type lime mortar and grey Portland cement. The Portland cement was generally close to the surface of the rubble and probably represents a consolidation of the rubble face before the modern concrete slabs were laid.

3.3 THE LUCY TOWER

3.3.1 Documentary summary

Medieval

It is generally assumed that the Lucy Tower motte was constructed as part of the works instigated in 1068. If this is the case then it is highly likely that the original tower would have been, at least in part, timber. The Winchester Annals state that castle of Lincoln was burnt in 1113 (Hill 1948, 173n) and this might have included the earliest tower on the motte.

The current stone keep is generally credited to the Countess Lucy of Bolingbroke (hence its name), and there is archaeological and historical evidence to support this contention. The commissioning of the tower would have been before her death in *c.*1136-38 and probably after her last husband's death, Ranulf le Meschin, 3rd earl of Chester, in 1129. This attribution is further underpinned by a charter of 1146/1149, granted by King Stephen to Ranulph Earl of Chester, which made a grant of the city and castle of Lincoln as a pledge, until Ranulph's lands and castles in Normandy were restored to him. Ranulph was permitted to fortify one of his towers in the castle and hold it until the king gave him possession of Tickhill Castle. After this, the newly fortified tower was to be restored to the King, and Ranulph would retain a second tower, which had been fortified by his mother, Countess Lucy, as well as the constableship of Lincoln and the county. It has always been assumed that the two towers that are the subject of the charter are the Lucy Tower (keep) and the Observatory Tower.

In 1224-5, a sum of £20 was spent in repairs and improvements to the gate of Lincoln Castle facing the church of St Mary, the tower of 'Luce' and the building of a barbican (Brown *et al.* 1963, 705).

An inquiry into the condition of the castle was undertaken in 1327. The inquisition was taken by Richard de Ty who stated that

> 'a tower called Lucy Tower in the said castle has been ruined within memory. They do not know whose fault this is, but £300 will be needed to repair it' (translated from PRO E101/484/10).

Judging by other statements made in the inquisition, the Lucy Tower must have been in a ruined state by the late 13th century. There is no documentary evidence to suggest that the £300 required for its repair was ever forthcoming from the Exchequer and it seems reasonable to assume that the tower ceased to be an inhabitable space.

18th century

Edward King provided an account of the access arrangements through the east wing into the keep as he understood them in 1782:

> '... the remains of a passage, or covered way, at (d), along the upper part of the wall, and leading to a flight of steps on the side of the keep. To our astonishment however, when we come to examine them, there is no *immediate* passage into the keep, nor could there ever have been such; but they must clearly have ascended, with many windings, towards the top of this great tower, and must then have descended again, though a strong projecting and adjoining building, which appears at (h), before any entrance could be gained to it' (King 1782, 263).

In his plan King shows a passage on the eastern part of the curtain wall approaching the side of the keep, with a circular feature partly within the thickness of the keep wall to the south of it. In addition, a doorway (blocked?) is shown to the south of the circular feature from the interior of the keep.

19th-century repairs and observations

Willson's notes provide a considerable amount of information on the Lucy Tower and the campaigns of repair that were undertaken in the early 19th century. He particularly recorded a lot of information regarding the various door openings associated with the tower. Concerning the main northern entrance of the tower he observed that the arch detailing is a restoration of 1835 and that originally

> 'The door had been all in one leaf, and hung on the east joint, it had been bolted by a wooden beam morticed into the jamb of the doorcase..The inside of the arches had been pulled down, and afterwards closed by a plain wall. The front was blocked up by a wall of brick and stone, set fair with the face of the wall. NB I believe that the patching of the keep and great walls with red brick was commonly practiced under Mr Lumby's superintendence, but some pieces had been done before' (Willson 786/G, 17)

With regard to the (blocked) door opening into the east turret he noted on a sketch plan, dated August 1835, that

> 'The west wall where the doorcase was found had been broken down and was filled up by a rude piece of modern work, only two feet thick. Now rebuilt' (Willson 786G, 73).

During the repair works in 1835 Willson also made some observations on the main south door of the tower

> 'the front was broken, and close up with a [casing?] of dry courses of stone...it had plain sides and a semicircular shaped roof all formed of small rough stones plastered over. The bottom rested upon the plinth. It was closed up by a wall of old stones laid together dry, and pointed with a little mortar on the outward joints. Both outside and inside had been broken, and all wrought stones entirely taken away...It had probably been a window as there was no hole for a bar one either side, such as there is on the large doorway. The outside was walled up with old stone laid together dry, but pointed on the jamb with mortar. On the left hand jamb, within the this wall which closed up the front, were the letters SD rudely cut on the plaster' (Willson 786/G,

73).

Slightly later in his notes he confirms his observations regarding the

> 'Southern, or external doorway, entrance to the keep. It was walled up flush with the outward face of the wall, before the year 1835, when it was opened and the arch restored, the crown of the arch had been pulled down and its place subsequently filled with rough stone' (Willson 786/G, 75)

A plan included in the Willson Collection, attributed to William Lumby, shows the keep with two external wings set in their angle with the curtain wall (Willson 786/G 49). While a note made by Willson on the Gough plan states that it was

> 'taken from drawings by Mr Lumby, architect and surveyor and also keeper of the castle. Two wings of the keep were not standing during this time, and he was evidently mistaken about there being a wing on the west side, corresponding with that on the east side, for there was surely a closet in the wall, with a narrow parapet of stairs leading up to it' (Willson 786/G, 70).

To the east of the stair is marked a fireplace in the northern wall of the wing, and in one plan appears to overlie a circular hole, 2'8'' across, possibly identified the 'well' mentioned in other notes as

> 'the well found in the great wall a few feet east of the keep..on the suggestion of HKB' (Willson 786/G, 77).

To the south of the stair door through the east wall of the keep is indicated a second door, apparently providing access into the east wing. Willson noted that

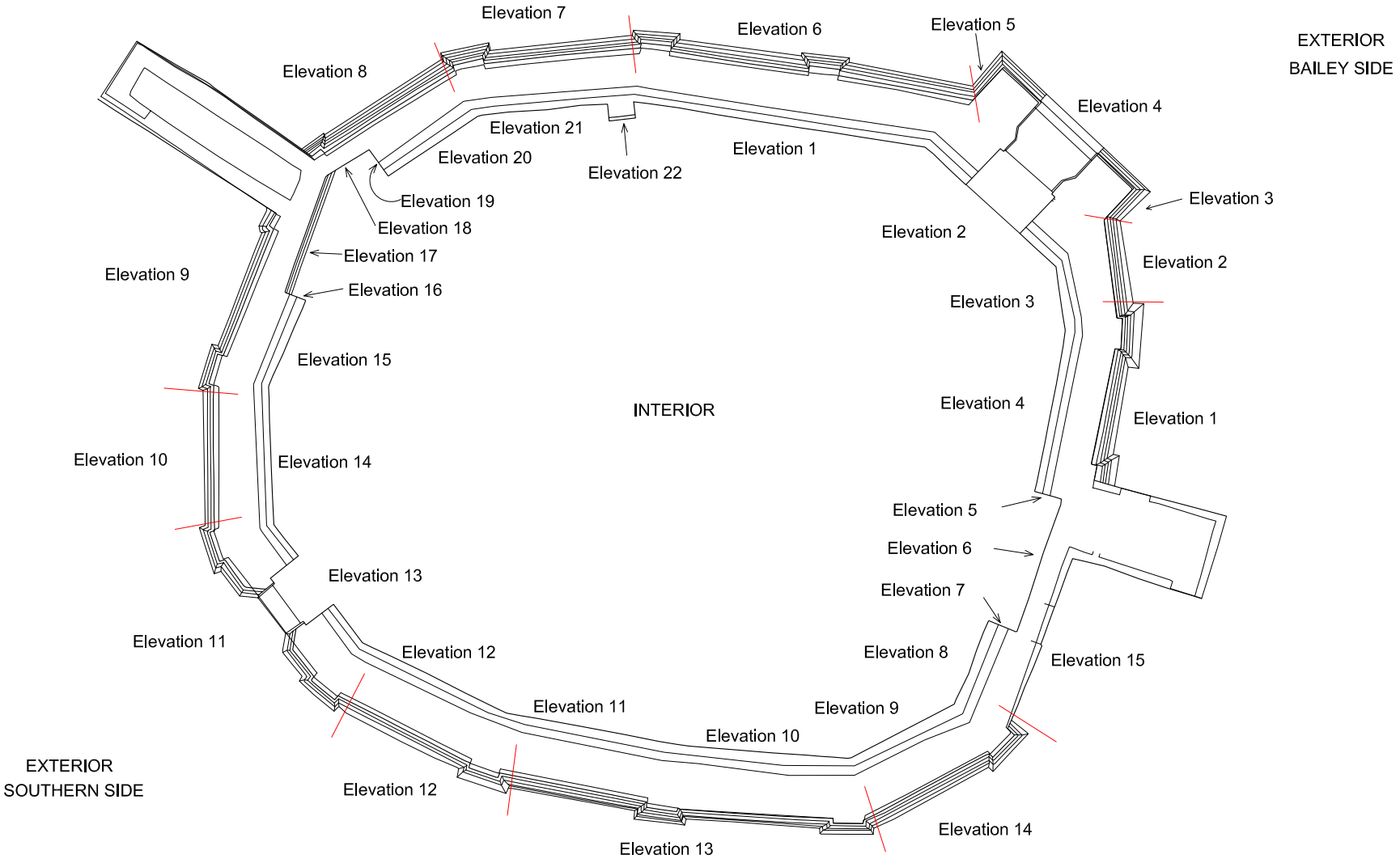
> 'the inside was filled up by a piece of loose walling comprised of big stone - the outside was partly filled by another wall made with brick and rebuilt in April 1835' (Willson 786/G 73)

He also notes on the same sketch that immediately south of the doorway externally a 'buttress destroyed, and now to be rebuilt' (Willson 786/G, 73).

3.3.2 Exterior

Bailey elevations

The keep, or Lucy Tower, is a classic example of a shell-keep, a form of castle keep that is relatively common in Britain from the early 12th to the mid-13th century. The Lucy Tower is constructed in a series of faceted elevations, forming an irregular circle, divided by a series of pilaster buttresses and junctions with the curtain walls (Figure 11). The walls are generally *c*.2.0m thick, apart from where the main entrance is located, to the northeast, and where the western and eastern recesses are located. Where the keep walls meet the adjacent curtain walls there are mural chambers which form rectangular turrets, or 'wings', which were originally accessed from within the keep. The principal entrance to the keep is to the northeast, although a further large extant opening is provided towards



Plan of the Lucy Tower showing the locations of the elevations | Scale 1:200 | Figure 11

the southwest side of the building. Both openings were the subject of restoration in the 19th century, in addition to the 'wings' whose original form was altered considerably.

The entrance doorway of the Lucy Tower is contained in a projection from the main body of the tower and features a large single centre arch formed of two rows of voussoirs (Figure 12). Surmounting the voussoirs is a hood-moulding which has a repeating lunette and billet detail upon it. The arch springs form a chamfered stringcourse that is carried as far as the edges of the front elevation, but does not return to meet the face of the main body of the tower. A multiply-chamfered plinth is employed at the base of the elevation which does carry round to the main body of the tower. The general form of the arch and associated detailing suggest a date in the second quarter of the 12th century. There is some variation in the stonework employed in the entrance arch elevation; the lower part features large blocks of ashlar stonework that has clearly defined putlog holes, while three courses above the string-course the masonry changes to much smaller blocks. The sockets for the door draw-bar are still visible within the door passage.

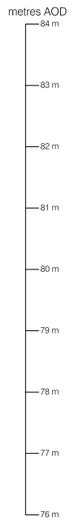
To the east of the entrance projection are two facets before the tower meets the eastern wing. These have similar characteristics with ashlar stonework to the plinth, in the buttresses and above stringcourse level, and roughly coursed rubble employed below the stringcourse level. Willson's notes describe the 'basement of several chamfered cases almost all destroyed within', referring to the multiply-chamfered plinth around the base of the tower on the north side. The stringcourse is carried around the pilaster buttresses as a roll-moulding detail. On the west side of the entrance projection is a sequence of four facets until the tower meets the curtain wall. The final facet, below the level of the stringcourse, displays a number of phases of patching and blocking in the stonework, in addition to evidence for heat scorching. The remaining facets have similar characteristics to those on the east side of the entrance. The use of rubble facing below the stringcourse either suggests that the work above and below the stringcourse represent two periods of construction, or perhaps that the masonry below the stringcourse was intended to be rendered.

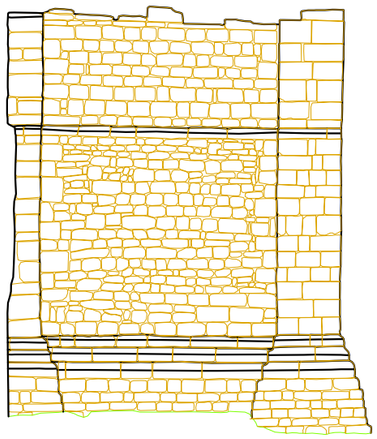
Southern external elevations

The elevations to the south of the curtain wall junctions consist of a series of eight facets. Elevation 9 (Figure 13), adjacent to the west wing, underwent a considerable amount of reconstruction in 1835. This work is defined by the use of regularly coursed stone blocks with bold vertical tooling. Degradation of the surface of the stonework forming the plinth at the bottom of the elevation makes it unclear whether this is also replacement stonework of 1835, but this is a strong possibility judging from Willson's notes which suggests that the building work was undertaken in 1835 (as with other works to the keep), in the process of which the location of the door opening was covered over. Willson also noted that the pilaster buttress to the south, was 'destroyed' and needed to be rebuilt. Although the stonework of the buttress has degraded sufficiently that the tooling is no longer clear.

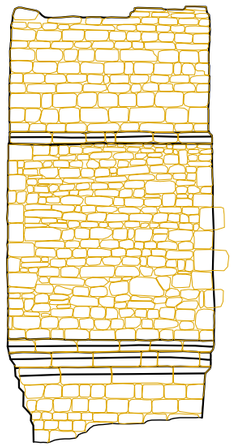
Southwest doorway

Elevation 10 has no particular features of note, but Elevation 11 features a door opening with segmental head. It is clear from Willson's accounts that the door opening underwent a considerable amount of restoration. That the bottom of the doorway was located above the level of the plinth





Elevation 01



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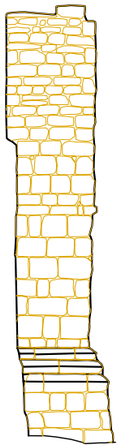
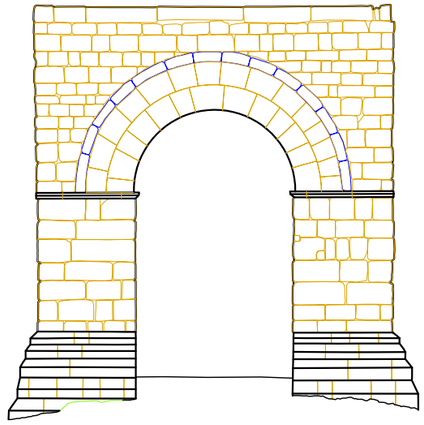
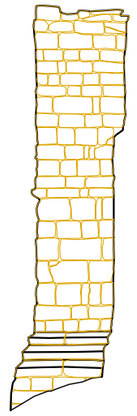


Elevation 03



Elevation 04



Elevation 05

KEY

CHANGE OF PLANE

CUT

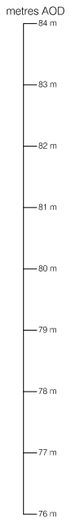
PUTLOG HOLE

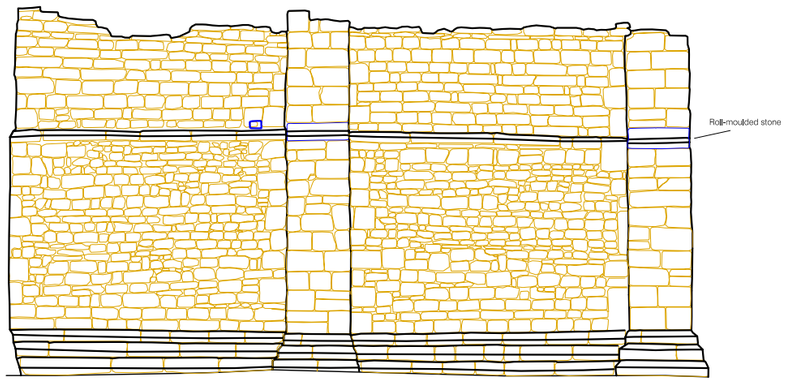
LIMESTONE

MOULDED STONE

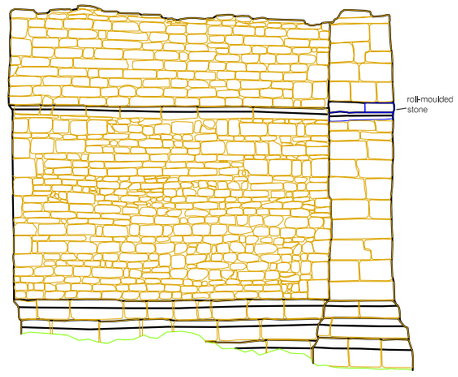
AREA OF VEGETATION COVER

GROUND LEVEL





Elevation 06



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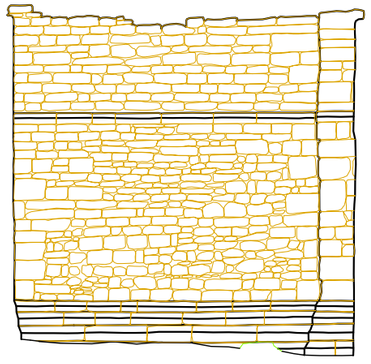
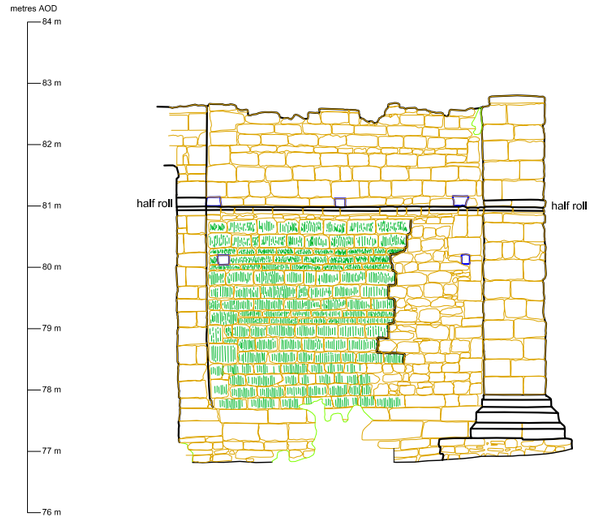


Elevation 08

Lucy Tower, exterior elevations, Bailey side

Scale 1:100

Figure 12



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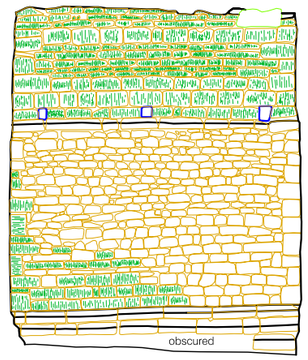
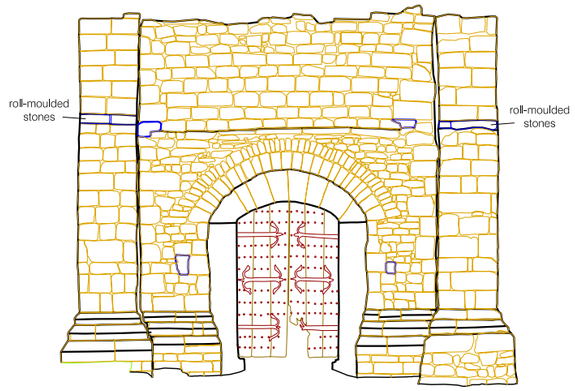
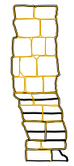


Elevation 10

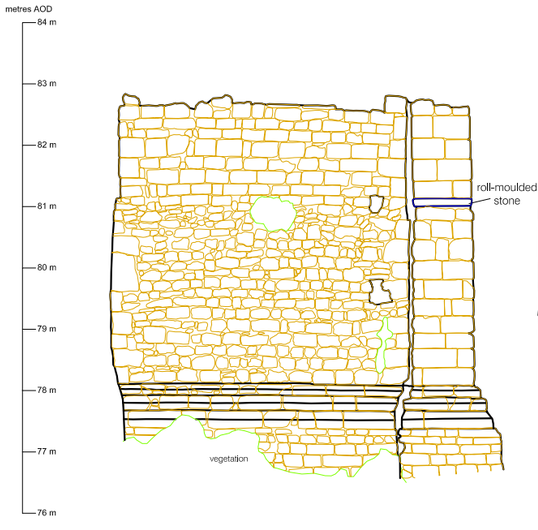
Elevation 11
NW jamb



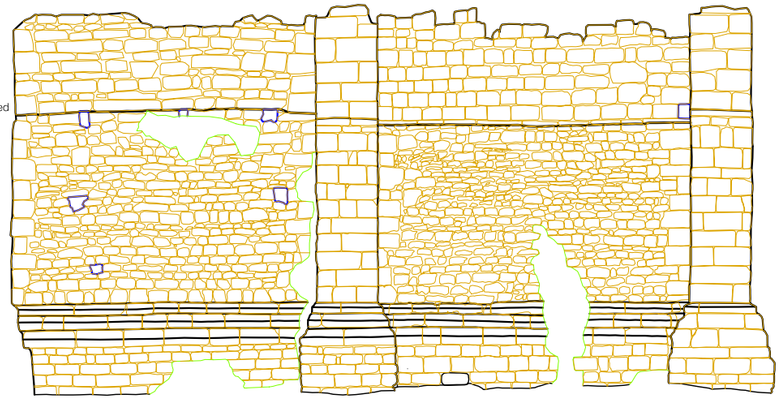
Elevation 11



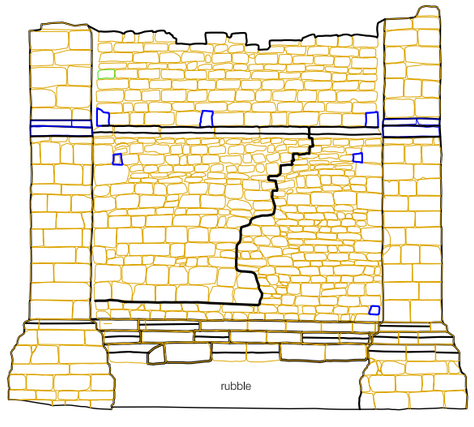
Elevation 11
SE jamb



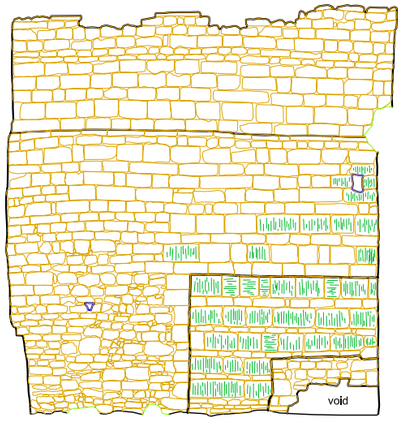
Elevation 12



Elevation 13



Elevation 14



Elevation 15

KEY

CHANGE OF PLANE
CUT
PUTLOG HOLE
LIMESTONE
MOULDED STONE
AREA OF VEGETATION COVER
GROUND LEVEL
TOOLING & DIRECTION
IRONWORK
TIMBER

Lucy Tower, exterior elevations, southern side

Scale 1:100

Figure 13

suggests that the opening had not started life as a door opening, which would normally have had its sill below the level of the plinth. Willson himself makes the observation that the feature was probably originally a window, only subsequently opened out to form a doorway. The appearance of the opening before restoration can be gauged by a historic view of the castle from the southwest of the south curtain wall and Lucy Tower by Grimm, dated 1784, which shows the rough masonry of the jambs as they extend down into the plinth (see Plate 13). The head of the arch is shown as semicircle rather than the segmental head that replaced it as part of the 1835 restoration.

Elevations 12 to 13 retain no particular features of note, but Elevation 14 retains evidence for a feature having been blocked. The blocking appears to relate to an arch-headed window or door opening that Willson planned and sketched on a plan of 1832 and evidence for the blocking can be observed internally. Elevation 15 retains evidence for a further blocked door opening the internal arrangement of which was identified by evaluation excavation (FAS 2008).

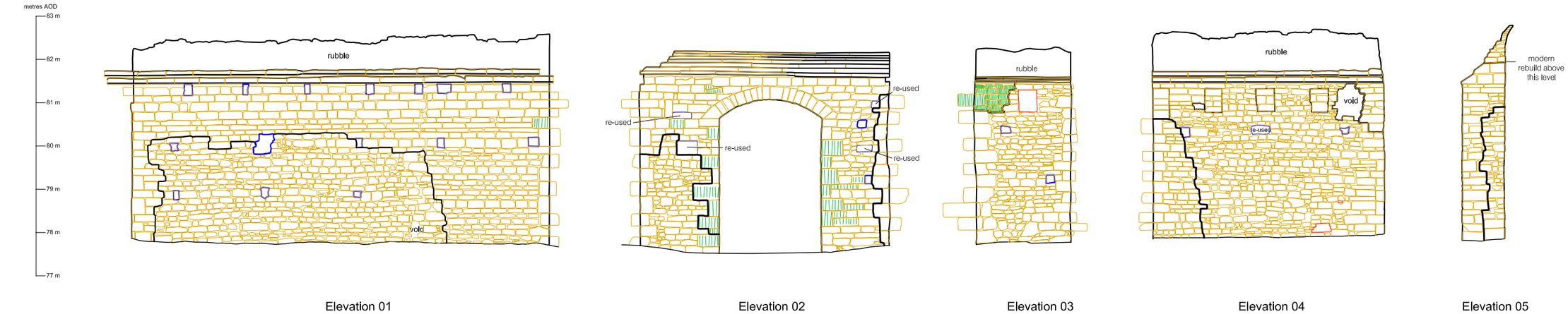
3.3.3 Interior

The interior faces of the tower have been much refaced, leaving only small areas of medieval masonry in the lower part of the walls (Figures 14 and 15). This work is characterised by the use of relatively small, roughly-squared coursed rubble facing stones. Within this masonry are regularly positioned putlog holes which are spaced in rows *c.*1.0m above each other. The putlog positions are also visible in the refaced parts of the upper parts of the walls and also in the known areas of 19th-century blocking, which would suggest that they are either 19th-century insertions, or that the restorers emulated the position of earlier putlog holes.

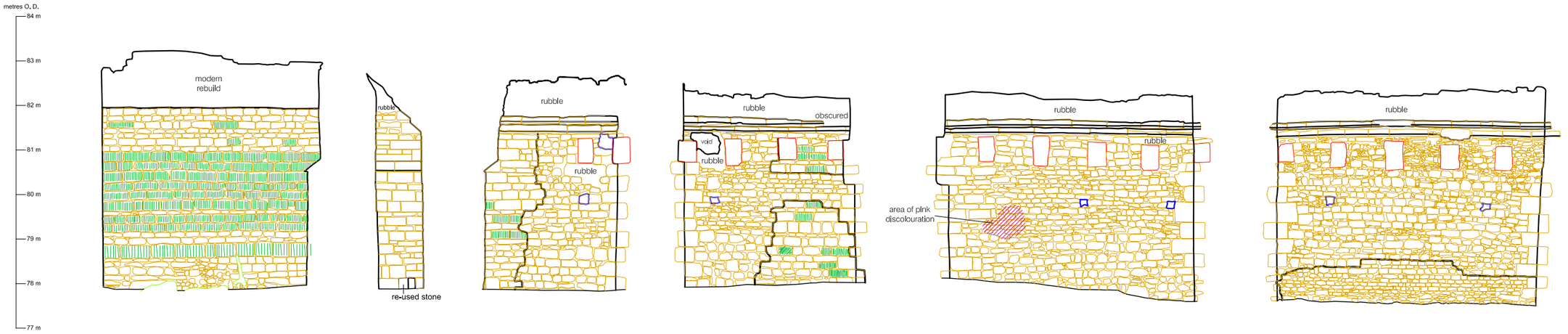
A row of large sockets can be discerned which run from the east side of the main entrance as far as the western recess. Willson's notes described the 'holes for large beams at 5 [or 8?] feet above the mound'. Most of the sockets have been blocked with brick work, possibly the work of Lumby (Willson's predecessor) who, Willson noted, tended to employ the material for much of his 'patching of the keep and great walls' although 'some pieces had been done before' (Willson 786/G, 17). The sockets, which measure *c.*0.25m in width by *c.*0.40m, are very closely spaced at intervals of *c.*1.2m. Considering their close spacing and size they seem unlikely to be bridging beams relating to an internal floor. It is more likely that the sockets, or slots, relate to a roof structure, representing the seatings for sole pieces in which the rafters would have been located. A roof structure of the 12th-century would have been steeply pitched and the upper part of the Lucy Tower walls would have screened it externally.

Elevation 1

Elevation 1 retains medieval fabric to the height of *c.*2.5m, above which the elevation has been refaced. Both the western end, which forms the corner of the western recess, and the eastern end, adjacent to the elevation which forms the main entrance to the tower, have been refaced from top to bottom. The latter refacing might represent the making good of a wall scar of a former wall projecting to the southwest. The postulated wall would have formed the gable of a range of buildings around the interior of the tower, terminated by the presence of the main entrance.



Elevation 01 | Elevation 02 | Elevation 03 | Elevation 04 | Elevation 05

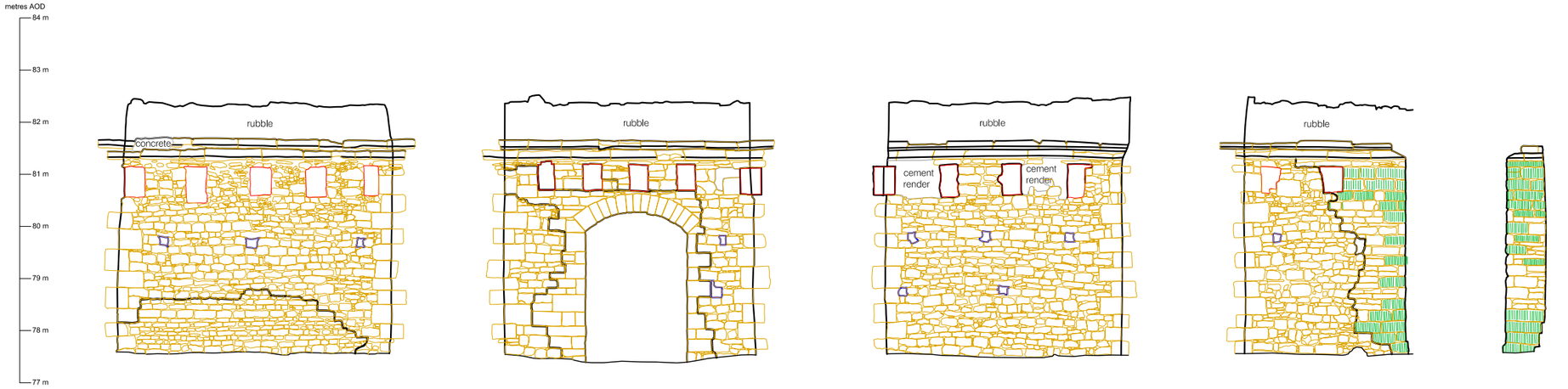


Elevation 06 | Elevation 07 | Elevation 08 | Elevation 09 | Elevation 10 | Elevation 11

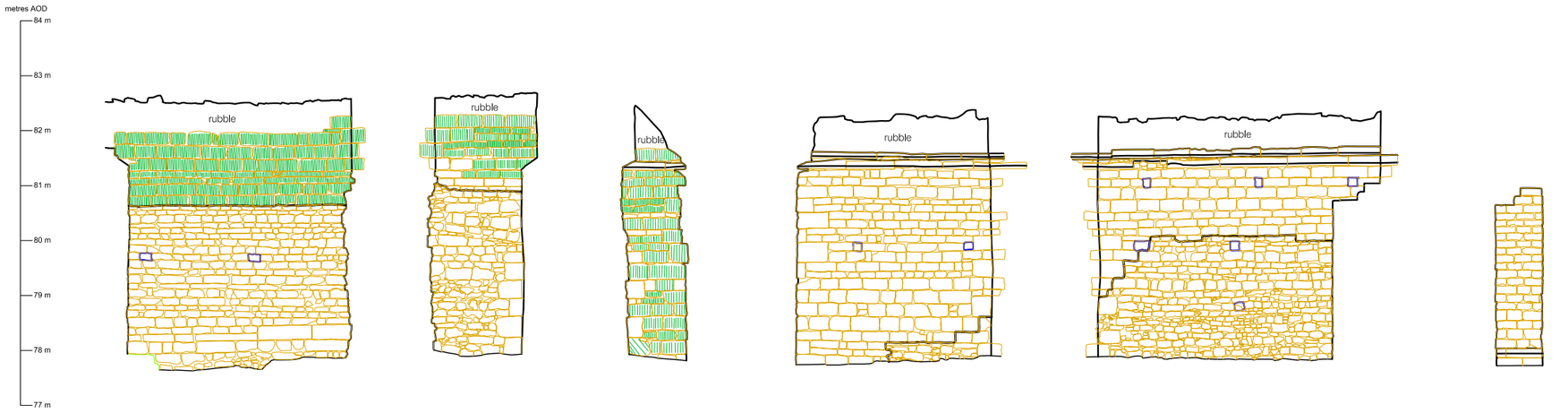
KEY

CHANGE OF PLANE
CUT
PUTLOG HOLE
LIMESTONE
MOULDED STONE
AREA OF VEGETATION COVER
GROUND LEVEL
TOOLING & DIRECTION
BRICK
CEMENT

Lucy Tower, internal elevations (1 - 11) | Scale 1:100 | Figure 14



Elevation 12 | Elevation 13 | Elevation 14 | Elevation 15 | Elevation 16



Elevation 17 | Elevation 18 | Elevation 19 | Elevation 20 | Elevation 21 | Elevation 22

KEY

CHANGE OF PLANE | CUT | PUTLOG HOLE | LIMESTONE | GROUND LEVEL | AREA OF VEGETATION COVER | BRICK | TOOLING & DIRECTION | CEMENT

Lucy Tower, internal elevations (12 - 22) | Scale 1:100 | Figure 15

Elevation 2

Elevation 2 forms the rear face of the main entrance into the tower. Much of the fabric, including the entrance arch, has clearly been refaced, with architectural fragments set within it. The only medieval facing is located at the bottom of the northwestern side of the entrance extending to a maximum height of *c.*2.7m. The ashlar stones forming the junctions between each elevation are largely of the original 12th-century work.

Elevation 3 and 4

Elevations 3 and 4 both incorporate large sockets around the top of the elevation which probably acted as seatings for the roof structure. The sockets on Elevation 4 have been blocked with stone as opposed to the majority in the tower which have been blocked with brick. Either end of Elevation 4 has been refaced, the southern refacing either relating to the insertion, or repair of the eastern recess.

Elevation 6

The eastern recess is located adjacent to the junction with the south curtain wall, and has a more rectangular plan to the western recess. The east wall of the recess has largely been covered over with a face of 19th-century masonry which conceals a doorway providing access to the eastern mural chamber and a further door opening at its southern end. The latter would have provided access to a structure on the east side of the keep. Excavation of the interior of the recess exposed the latter door opening which retained a 12th-century shaft base on its northern jamb and a door pintle remained within the southern jamb (FAS 2008). The western face of this door opening was located flush with the main internal elevations of the Lucy Tower, rather than the face created by the recess. Wall footings extending to the north within the recess suggest that the entire recess was created by cutting back the Lucy Tower internal wall.

Elevation 8

Elevation 8 has undergone similar treatment to Elevation 4 with its northern end having been refaced or repaired for the corner into the eastern recess.

Elevation 9

Elevation 9 contains a blocked window or door opening through the wall of the tower. The blocking for the opening is quite clear internally, and can be identified as 19th-century with both reused stone and boldly vertically-tooled stone employed.

Elevation 10

Elevation 10 retains most of its medieval face work, although rather degraded. An area of burning is detectable on the stonework towards the eastern end which might reflect the position of a former fireplace against the wall.

Elevation 11

The bottom *c.*1m of Elevation 11 has been refaced using small stones. The masonry is uncharacteristic of the 19th-century repair works, and is possibly a medieval or post-medieval

alteration. The re-facing might relate to removal of a feature along the bottom of the wall or simply be a repair.

Elevation 12

Like Elevation 11, much of the bottom *c.*1m of Elevation 12 has been re-faced in small stones, possibly reflecting the removal of a feature.

Elevation 13

Elevation 13 incorporates the southwestern doorway of the tower. The masonry of the door jambs and head has largely been replaced with stonework of the 19th century making it difficult to establish whether the current form of the opening reflects its medieval form. Significantly, the large blocked sockets at the top of the elevation are carried around above the opening, suggesting that the opening was in a building within the tower. This arrangement is in contrast with the main northeast entrance.

Elevation 14 and 15

Elevations 14 and 15 have no details of note other than a continuation of the sockets for the possible roof structure of the tower and a row of putlog holes. The northern end of elevation 15 has been refaced in characteristic 19th-century masonry where it forms the corner into the western recess.

Elevations 17 and 18

There are two recesses to the east and west within the tower, which run the full height of the building. That to the west is centred on the junction with the curtain wall and forms a rough v-shape in plan. The southern half has been infilled with 1835 masonry, although a portion of earlier facing is visible to the north. Elevation 17 appears to have a sequence of two 19th-century refacing or blocking episodes. The lower *c.*2.7m has been re-faced in reused stone, while the remaining upper part uses the characteristically tooled 19th-century stonework.

Elevation 18 retains evidence for a sloping roof scar, perhaps reflecting the position of covered stairs leading up to a door opening that led into the western wing. The area within the recess was excavated and again demonstrated that the internal face of the wall was cut back to form the recess (FAS 2008). The roof scar and facing masonry in which it is located must therefore have been addition, probably representing an alteration to the access arrangement to the western wing.

The door opening would have provided access to a now-lost building contained in the angle between the Lucy Tower and western wing. Externally, a wall scar is visible on the south curtain wall external elevation indicating a wall projecting to the south.

Elevations 20, 21 and 22

Elevations 20 and 21 were both subjected to complete refacing in the 19th-century leaving no features of note. Against the internal north wall of the keep is a rectangular feature that appears to be a buttress with a chamfered plinth. It is in fact a flue that was inserted in the 19th century to vent the sewage system within the prison.

3.3.4 Watching brief

Wall head

During repair works it was possible to examine the wall head fabric in greater detail and several important observations were made. Internally, some of the stonework that formed the stepped/chamfered courses, just above the level of the sockets, required replacement and this was examined as it was dismantled. It was apparent that the fabric that formed the stepped/chamfered courses was entirely of 19th-century date, bonded with a hard hydraulic lime. The feature was probably introduced by Willson as a means of shedding water from an internal, original offset. The same technique can be seen to have employed by Willson on the Observatory Tower, East Gate and West Gate, at the point at which original floors have been lost or removed leaving either an offset or the scar of a springing vault.

During repairs to the wall-head of the tower it could also be seen to have received considerable repair and alteration in the 19th-century and most of the stonework had either been replaced, or re-bedded, in hydraulic lime mortar. Some reused slabs had been used to provide wall capping. One stone carrying graffiti of 18th or possibly early 19th-century date which, with part of a large aperture remaining in it, was probably a lavatory seat (Plate 15).

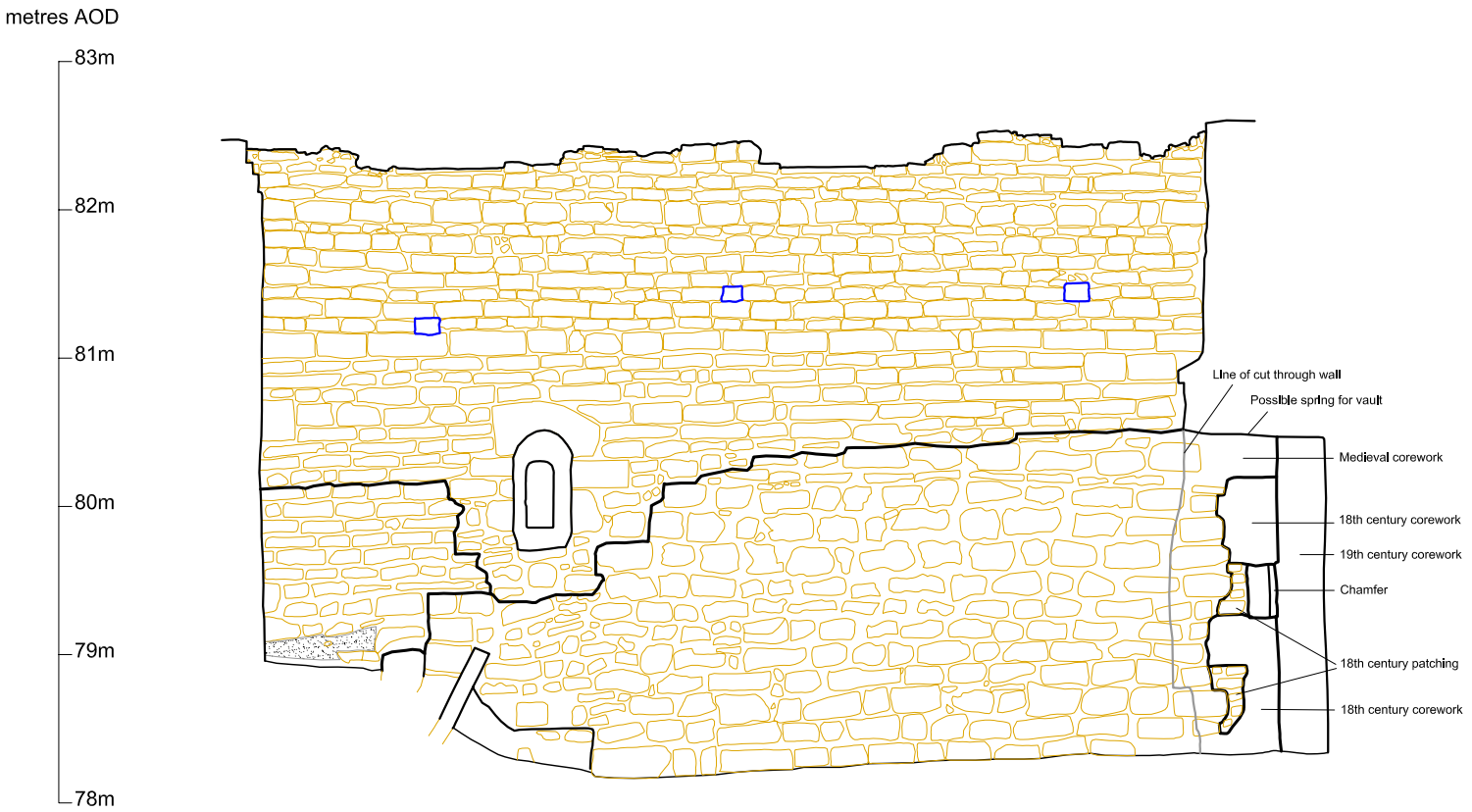
Plate 15 Reused stone on the wall-head of the Lucy Tower

Unblocking of west door

As part of the scheme to improve access from the curtain wall into the Lucy tower a section of 19th-century blocking was removed between the west wing and the interior of the tower. The entire unblocking operation was carried out under archaeological supervision in order to ensure that no medieval fabric was removed.

Plate 16 Unblocking of west chamber door opening

It was evident that all the blocking material was of 19th-century date and that the a substantial amount of rebuilding had taken place to this area of the tower. However, medieval facing masonry remained along the north side of the opening, forming a continuation with that in the north wall of the west wing (Plate 16). A single stone retaining a chamfer remained *in situ* - the chamfer facing into the interior of the Lucy Tower (Figure 16). Evidently the north side of a medieval door opening, the fabric had been subject to some alteration in the 18th century removing the remaining chamfered stones and, probably, the rebate for a door. However, some medieval core-work, *c.*1.9m



Lucy Tower, internal north elevation of the west chamber block showing medieval fabric exposed during unblocking | Scale 1:50 | Figure 16

above the floor surface might indicate the position of the springing for the door head. Fortunately a single paving slab (probably 18th century) remained in position on the floor confirming the floor height within the opening.

3.4 OBSERVATORY TOWER

3.4.1 Documentary summary

Medieval

Medieval references to the tower are very sparse. The tower is possibly that mentioned by a charter of 1146/1149, granted by King Stephen to Ranulph Earl of Chester, made a grant of the city and castle of Lincoln as a pledge, until Ranulph's lands and castles in Normandy were restored to him. Ranulph was permitted to fortify one of his towers in the castle and hold it until the king gave him possession of Tickhill Castle. After this, the newly fortified tower was to be restored to the King, and Ranulph would retain a second tower, which had been fortified by his mother, Countess Lucy, as well as the constableship of Lincoln and the county. It has always been assumed that the two towers that are the subject of the charter are the Lucy Tower (keep) and the Observatory Tower.

In 1199-1200 the constable spent £20 on the repair of the 'new tower' and gaol (PR 2 John, 64). This might be a reference to the 'newly fortified tower' of the charter of 1146/1149. That this might be linked to the gaol is a tantalising reference.

In Willson's notes there is the observation that the Observatory Tower was called 'Gal. Clint Tower in Baronage' (Willson 786/G, 24), although he does not identify a source for his information. If correct, 'Gal.' could be an abbreviation for 'Gaol' (or admittedly several other words), while the Oxford Dictionary suggests 'Clint' has an Scandinavian origin meaning cliff or summit.

Post-medieval

If the Observatory Tower can be equated with part of the medieval gaol then a major campaign of work was underway in 1540-41, the building accounts for which survive. The main emphasis of the work was on repair and improvements, although, as usual, the document is not specific as to the location of the gaol in the castle. The gaol at the time must have been a masonry structure considering the quantities of lime that was used in the works and the need to build a lime kiln (PRO E 199/24/31).

19th-century

Willson described the Observatory Tower as

> A principal tower at the southeast angle of the castle on a mount of nearly equal height to the keep, called Gal. Clint Tower in Baronage...it was square, and part of the very strong inner wall was pulled down and rebuilt by Mr Merryweather, gaoler - foundations lower in the mount have been discovered a rude arch, in lowering the slope of the hill (Willson 786/G, 24).

Willson's notes are of some assistance and worth examining at length. In describing the east elevation he notes that the

> lower parts of the walls were very badly built, with small stones and dirty mortar. They were old, but not of the original work, and had become decayed and bulged out. Some pieces of the antient work were found [around?] and inclosed by the walls, towards the bottom, which were exceeding hard and firm, and were left within the new walls. The weather course of the upper parts, including the windows and battlements, were [erected?] by John Merryweather, chiefly by the labour of ...prisoners, about 1815. The materials of these works were made us of in the new works. The door seen in the middle of this side had formerly made a communication between the garden in the [internal?] mound, and the space within the tower, but it had been long since blocked off. At the southeast corner was formerly a small room or R... house built of wood and covered with [boards?]. This had been used by company gents to drink at the Gaolers giyse when ale was sold within the castle.....*illegible*...Mem. The southeast side had fragments of chamfered...of a basement similar to that of the keep (Willson 786/G 30)

Excavations

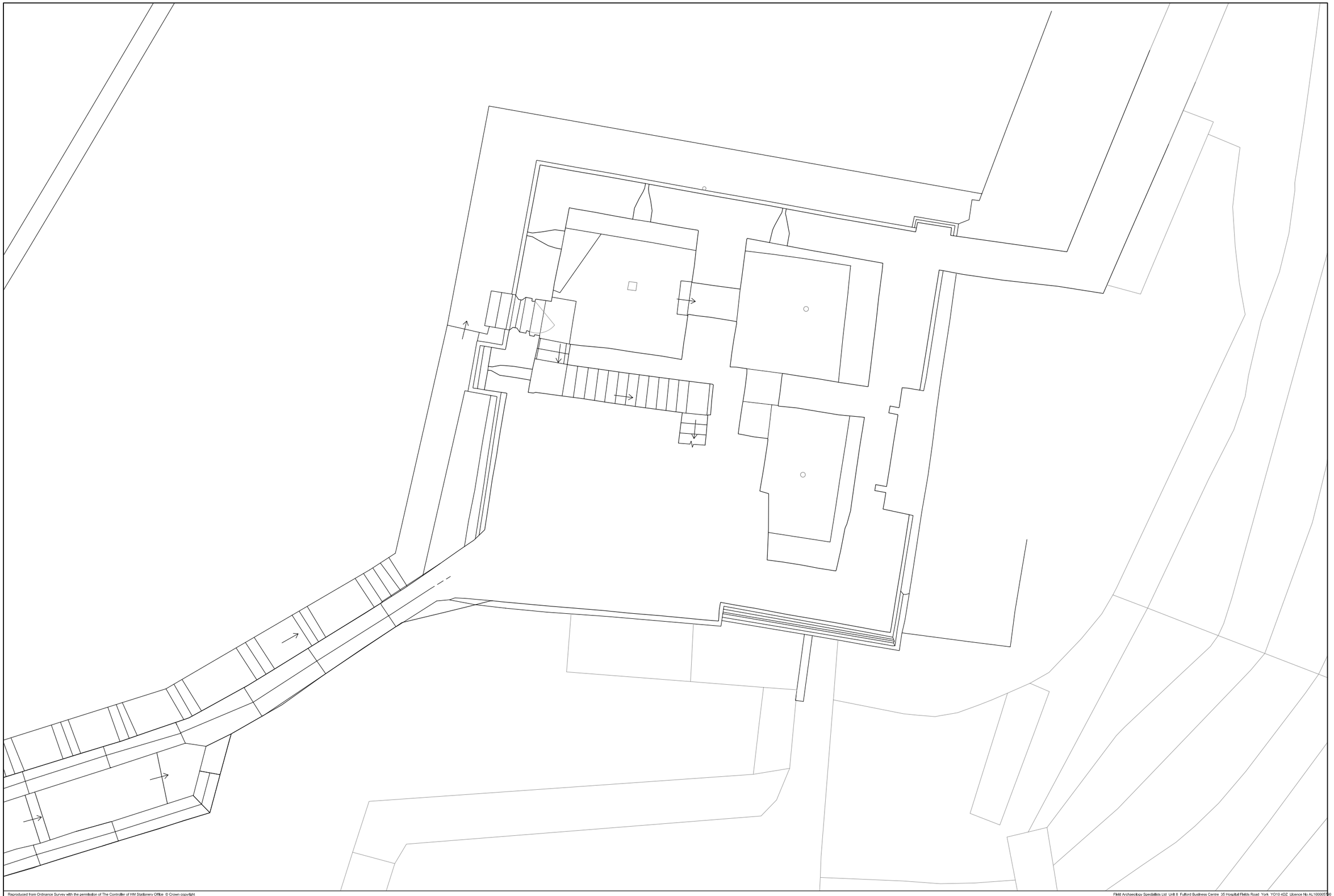
Excavations within the southeast corner of the tower in 1974 revealed numerous 18th and 19th-century pipe fragments immediately beneath the floor, presumably related to the various additions and reconstructions of the tower in this period. Below these deposits were the remains of a staircase rising to the southeast corner of the tower. The excavations exposed the original internal walls of the tower composed of closely jointed blocks of limestone with fine diagonal tooling, while contained within the walls were large lumps of limestone loosely bonded with mortar. At a depth of 1.10m on the east wall and 1.5m on the south wall the facing changed to a cruder form, and extended to a further depth of *c*.1.0m. Below this level was a general spread of a close-packed rubble filling. The excavator suggested the whole had been constructed in a single phase within the core of the mound as the base for the superstructure of the tower (Reynolds 1975, 203). Pottery within the rubble fill suggested a mid- to late 12th-century date for the construction of the tower base, although subsequent ceramics analysis in Lincoln suggests that they could be as early as *c*.1130 (Vince 2003, 176-7).

3.4.2 Exterior

The standing fabric of the Observatory Tower is nearly square in plan measuring *c*.12.0m east-west and *c*.11.0m north-south, and is of two storeys apart from the southwest corner which rises further as circular turret (Figures 17 and 18).

South elevation

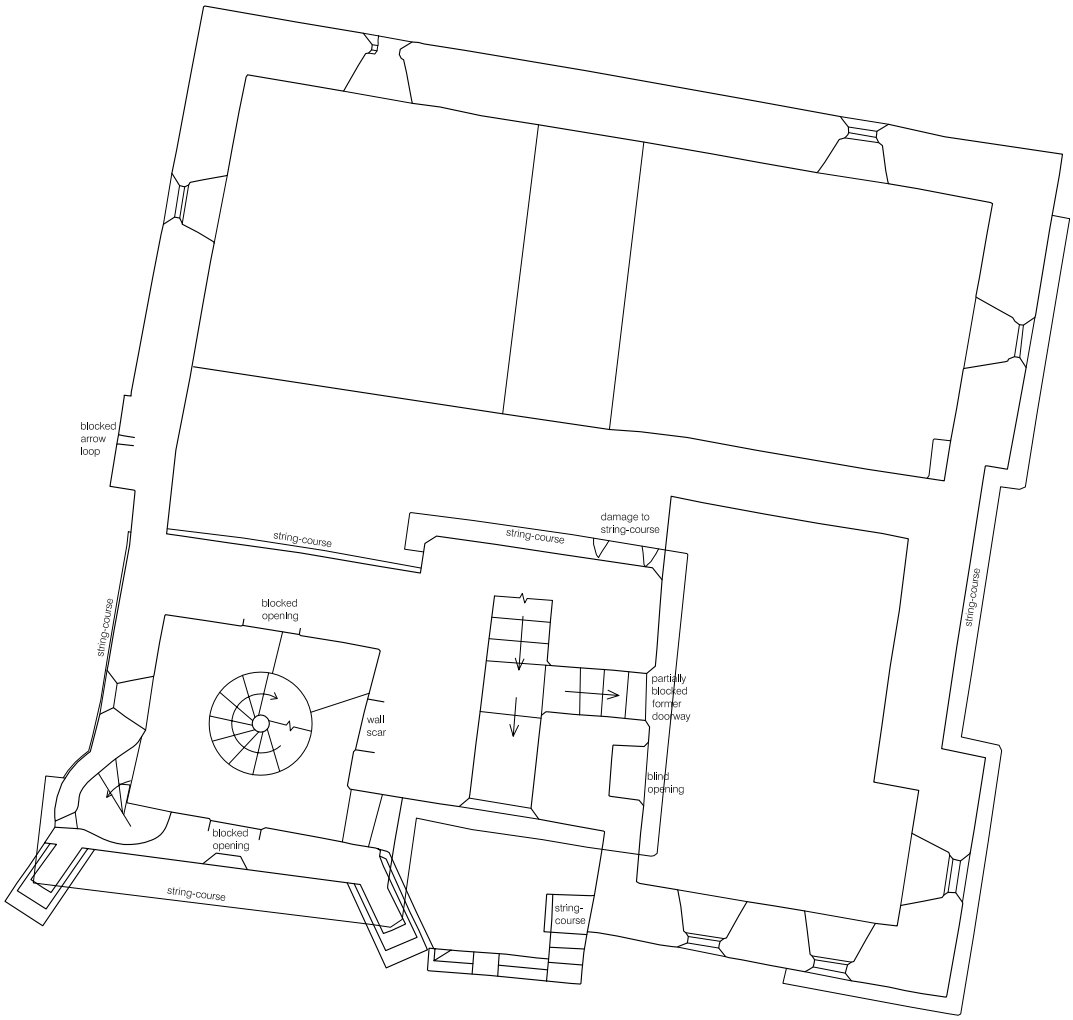
In contrast to the interior face there appears to be no exposed medieval work on the external south elevation of the tower (Figure 19). The south wall has been entirely re-faced in two phases of work. The eastern end appears to have been subject to the same refacing work as the east elevation in 1840, while the western end appears to be work of 1815. The south elevation features three fanciful arrow slits at ground-floor level, all part of the 1840 restoration work, and three two-centre headed windows with hood mouldings and stops at first-floor level, being the result of work in 1815. The pair at the eastern end is of the 1840s, replacing a single window of 1815, while that at the western dates



Observatory Tower, ground floor plan

Scale 1:100

Figure 17



Observatory Tower, first floor plan | Scale 1:100 | Figure 18

Observatory Tower, external south elevation | Scale 1:100 | Figure 19

to 1815. The main features of the elevation before 1815 appear to have included a lean-to structure with mono-pitch roof and possibly a door opening, while at the western end of the elevation is a spur wall, or buttress, projecting to the south; externally all evidence for these features have been removed.

West elevation

In the west elevation it can be seen that the extent of early fabric is between the southwest corner, where the curtain wall meets the tower, and the central stair buttress (Figure 20). The bottom of this fabric retains a heavily degraded chamfered plinth. Above the plinth there are two main phases of masonry, with the lower part of the elevation (roughly to first-floor level) consisting of blocks of widely differing size, roughly coursed, and the upper part of the elevation to stringcourse-level of more consistently sized blocks of stone.

At first-floor level, to the north of the refaced masonry, is a row of trapped quoins, sandwiched between the 1815 reconstructed work to north and the refacing work to the south. The stringcourse at the top of the rectangular portion of the building also appears to be part of this work and has been cut through to accommodate the corbelled stringcourse of the early 19th-century work. Also of the earlier phase is the bartizan turret containing the remains of the stair visible internally.

North elevation

The current appearance of the north elevation of the Observatory Tower is largely the result of the partial rebuilding of the structure undertaken by Willson in 1840 (Figure 21). Prior to 1840, when the tower was planned by Willson, the north wall did not exceed the height of the ground floor storey and had no openings within it.

The elevation now consists of ashlar stonework with a chamfered plinth at the bottom, two loop windows on the ground floor and two lancet windows at first-floor level provided with hood mouldings and stops. One of the latter window has been given a false ruined appearance, a similar treatment having been applied to the wall head. Willson provided a drawing of the elevation once completed to his design.

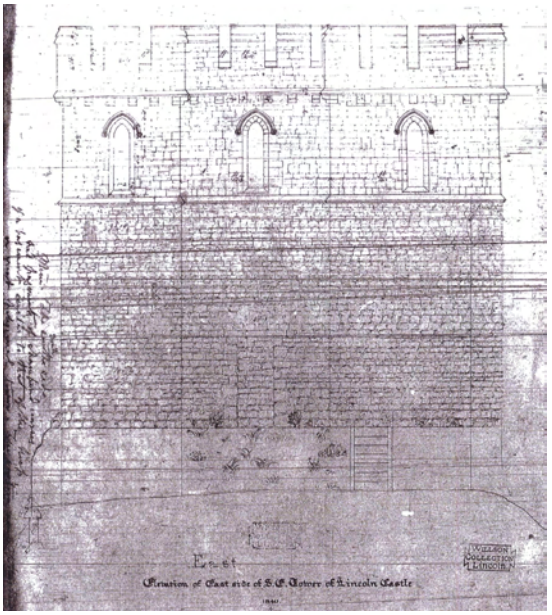
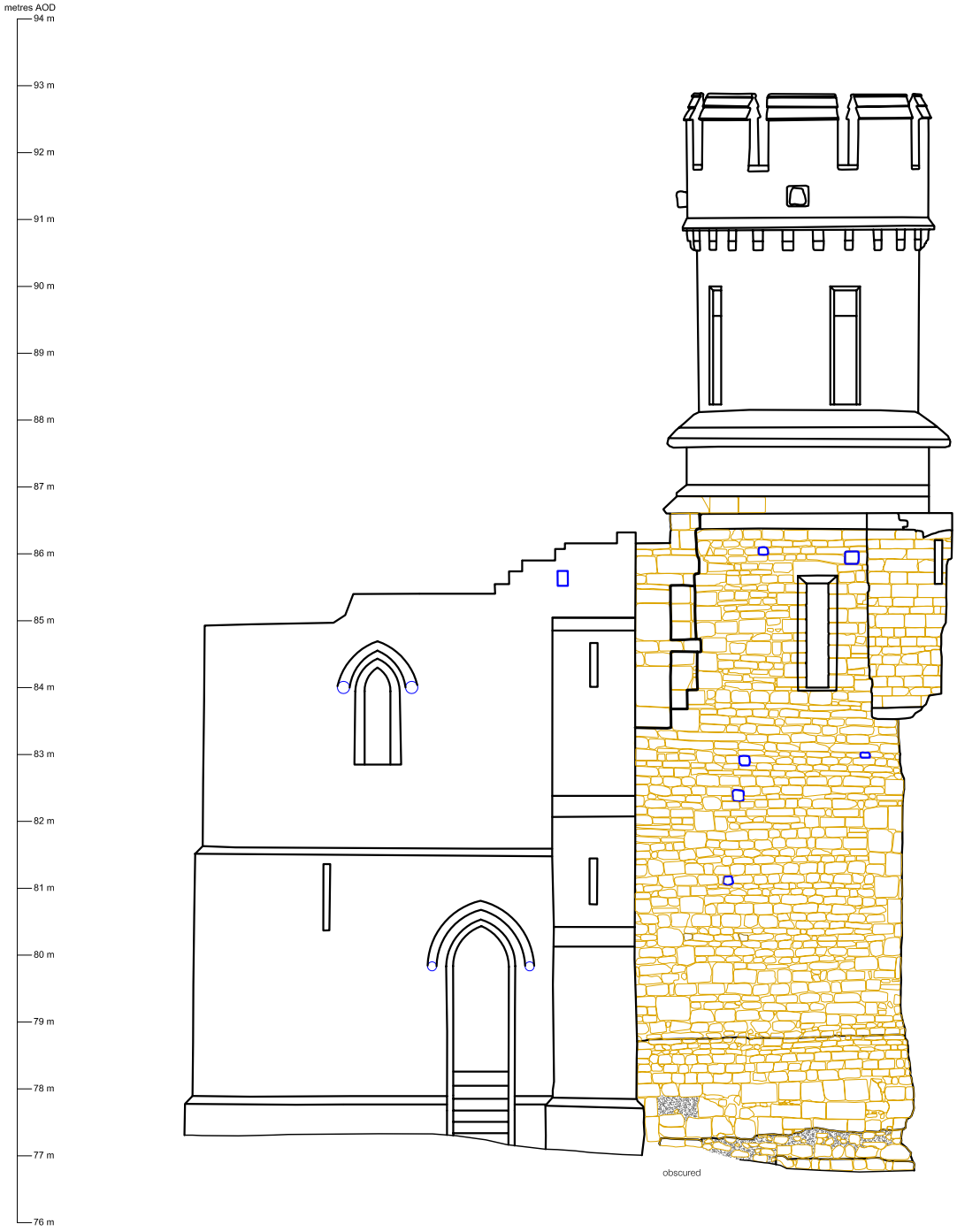
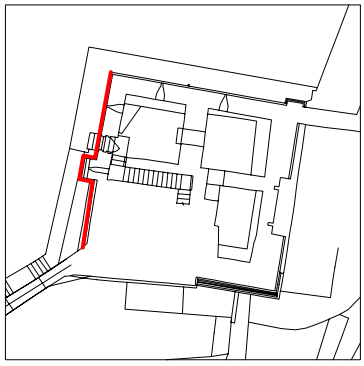


Plate 17 East elevation drawing of the Observatory Tower by Willson, dated 1840

East elevation

Willson undertook the restoration of the east elevation of the tower at the same time as the north elevation (1840) and the current appearance of the east side of the tower is largely the result of his work (Figure 22). Willson provided before and after restoration drawings of the tower's east elevation (Plate 17) and helpfully observed that most of the previous restoration work dated to Merryweather's and 1815. However, the lowest part of the elevation, which projects out from the upper wall face, does appear to retain some medieval masonry of coursed rubble with some partial courses of pitched

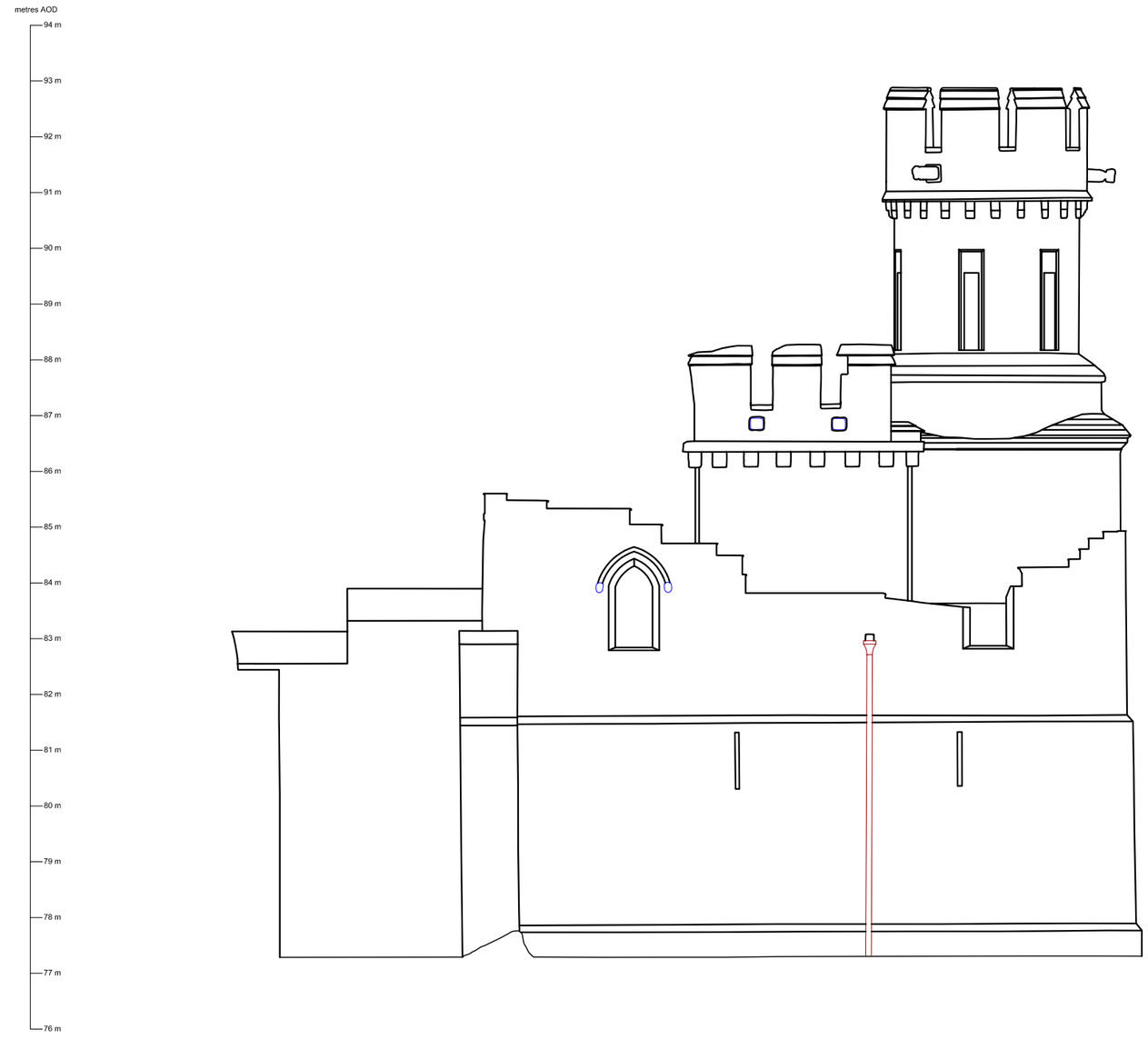


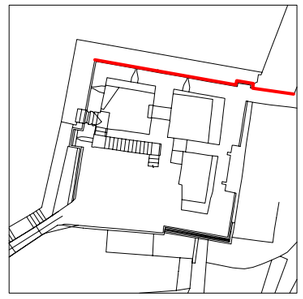


KEY

- CHANGE OF PLANE
- CUT
- PUTLOG HOLE
- MOULDED STONE
- GROUND LEVEL
- MORTAR
- LIMESTONE
- TIMBER

Observatory Tower, external west elevation | Scale 1:100 | Figure 20





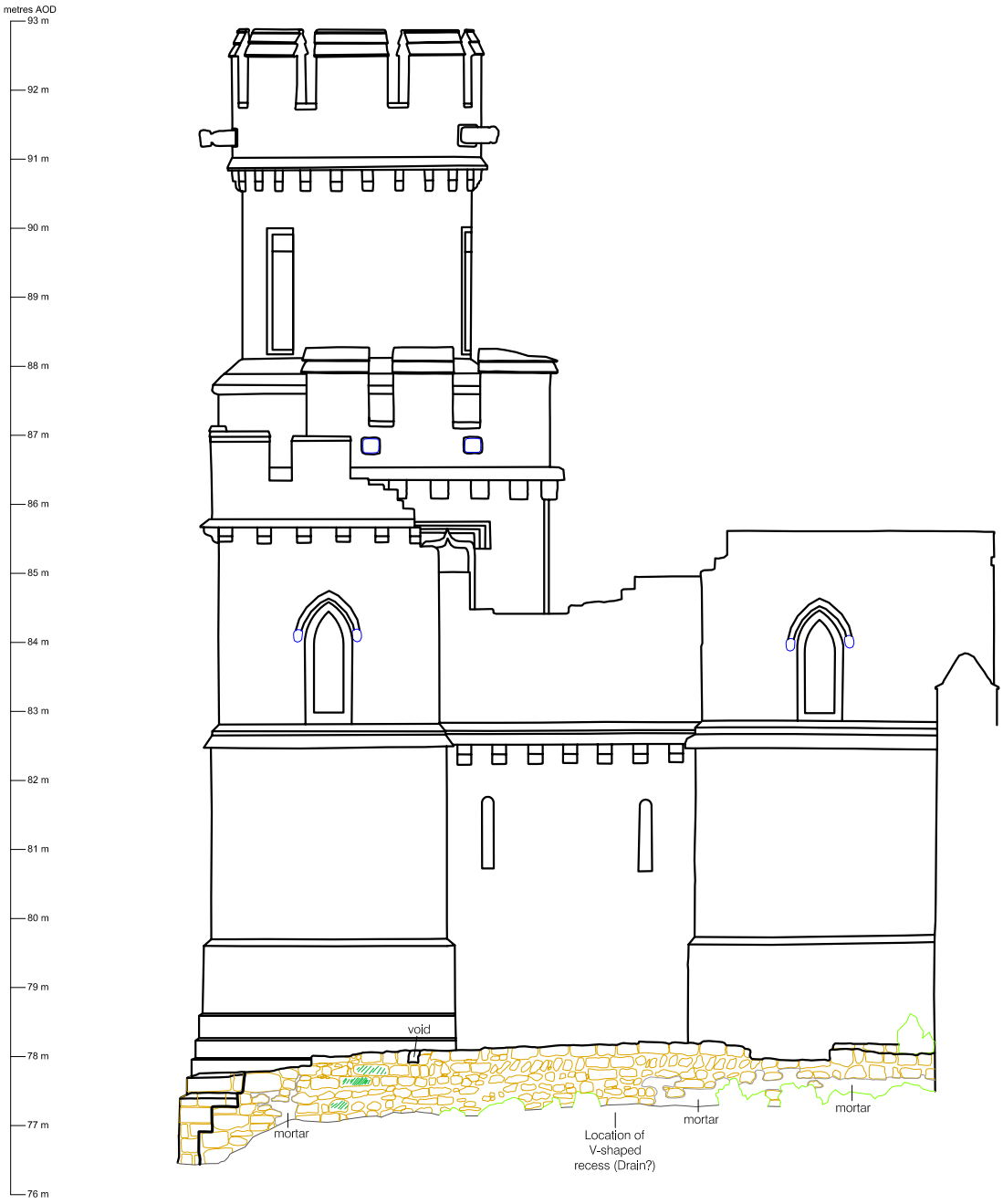
KEY

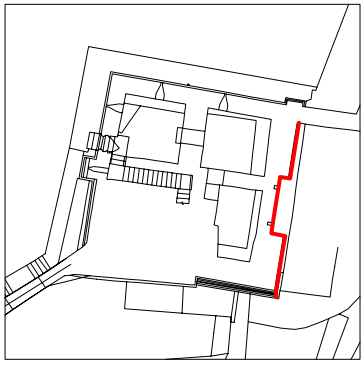
- CHANGE OF PLANE
- MOULDED STONE
- IRON
- GROUND LEVEL

Observatory Tower, external north elevation

Scale 1:100

Figure 21





KEY

- CHANGE OF PLANE
- CUT
- MOULDED STONE
- LIMESTONE
- GROUND LEVEL
- MORTAR
- TOOLING & DIRECTION
- VEGETATION

Observatory Tower, external east elevation	Scale 1:100	Figure 22

stonework; this probably represents wall footing rather than face-work that was intended to be exposed. In the course of stabilisation works to the Observatory Tower mound in 2007 the lower part of the wall was exposed and it was observed that it incorporated a soil filled void and V-shaped recess close to the centre of the elevation (AAA Report 2008/026). The excavator interpreted the feature as a possible drain serving the interior of the tower which seems a reasonable interpretation.

The ground-floor of the elevation is largely of ashlar stonework on a chamfered base; the ashlar being entirely the work of Willson while the chamfered base is of earlier origin although all of the stonework appears to have been replaced by Willson. Willson's ashlar work replaced stonework that he described as

> 'very badly built, with small stones and dirty mortar. They were old, but not part of the original work...' (LA Willson Collection 786G, MF2/124/10)

Willson's drawing clearly shows the coursed rubble of which the lower part of the wall was composed, the masonry is strikingly similar to the work that survives in the West Gate barbican tower. The centre of the elevation is recessed and has a pair of loop windows at ground-floor level; a contrivance of Willson. This arrangement replaced a central door opening, evidently blocked by the time Willson prepared his pre-intervention drawing.

Terminating the upper part of the ground floor is a moulded stringcourse which, according to Willson, was the work of John Merryweather in *c.*1815 although has clearly been further embellished by Willson. Above the level of the stringcourse the ashlar stonework is mainly the work of Merryweather in *c.*1815 with further Willson alterations which included changes to the northern and southern windows and the removal of a window in the centre of the elevation. Willson's final touch was to create a ruined wallhead by removing some of Merryweather's crenellated parapet.

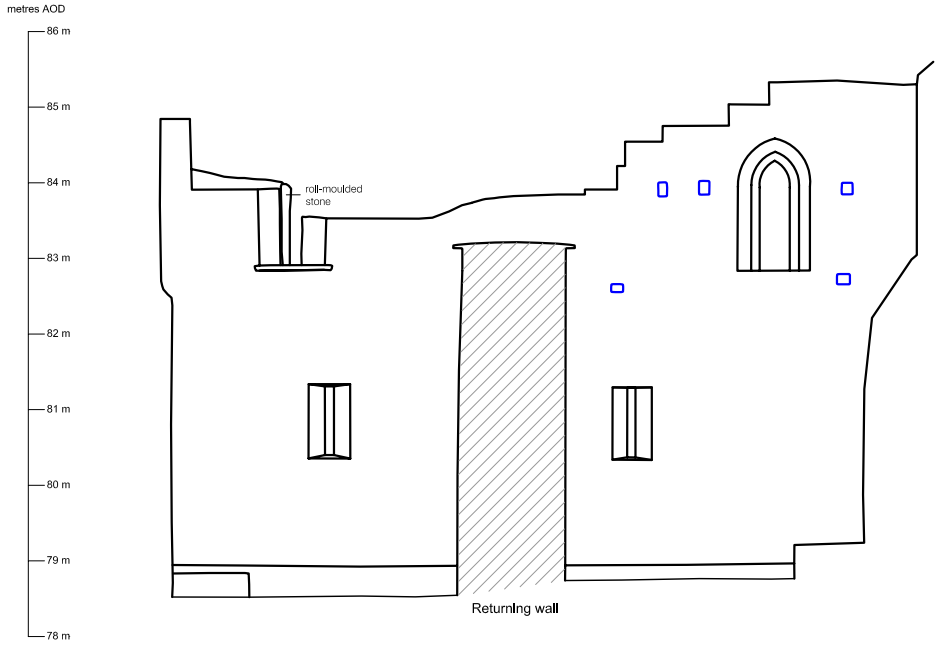
3.4.3 Interior

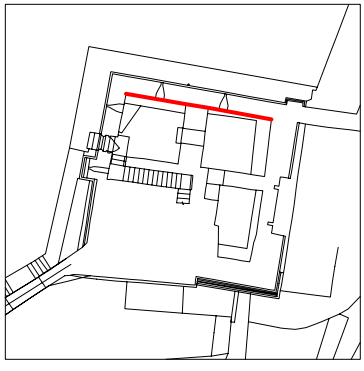
The tower is now accessed through the east elevation by a two-centre headed door opening, with hood moulding and stops, inserted by Willson in 1840. Internally the tower is divided into four compartments on each floor, occupying each corner of the tower. The southeast compartment can not be accessed as it has been infilled to support the circular turret above.

North wall

The exposed fabric of the north wall is almost entirely the work of Merryweather in *c.*1815 and contains no features of note (Figure 23). Unfortunately there are no historic illustrations or plans which show the fabric before Merryweather's reconstruction of the wall. However, at the base of the wall are footings which have been encased in modern masonry, apparently exposed after the removal of the floor in the tower during the 1970s excavations. If the external, 19th-century, wall face is close to the position of the earlier tower wall then this would suggest a wall thickness of *c.*1.75m.

The north wall is subdivided by a lateral wall which runs north-south through the tower. The





KEY

CHANGE OF PLANE

PUTLOG HOLE

GROUND LEVEL

Observatory Tower, internal north wall	Scale 1:100	Figure 23

relationship of the lateral wall with the (*c*.1815) north wall indicates that the lateral wall preceded it. However, it is clear from the wall scars on the lateral wall that it had bonded through with the medieval north wall.

North-south lateral wall

The north-south lateral wall forms a spine through the centre of the tower. The northern end incorporates an arch-headed door opening between the northern, east and west rooms (Figure 24). The current repair works were limited on this section of the fabric and, thus, the examination was limited to what additional information could be gathered from a close examination from the scaffolding.

It had been previously assumed that the lateral wall was an insertion of *c*.1815, however, probing of the masonry joints confirmed that the structure was bonded in typical sandy brown lime mortar; typical medieval mortar. At the northern end, where the wall joins than main north wall of the tower, vertical wall scars are visible in both elevations of the lateral wall, the best defined being on the eastern face. The scars coincide with the projecting wall footing of the original tower structure, indicating that the two elements must have co-existed.

The west wall of the of the southeast room retains evidence for the vaulted form of the covering over the first floor, which appears to have extended into the southwest quarter of the tower. A more detailed investigation of the blocking beneath the vault was undertaken as part of the watching brief stage in the work (see Section 3.3.4).

East wall

The internal east wall is interrupted by an east-west spine wall (Figure 25). The northern end of the wall (which is within the northeast room) appears to be early fabric with evidence for the springing of vault *c*.3m above the current ground level. A wall scar is evident along the southern edge of this section of wall the origins of which are unclear. Along the bottom of the elevation is a projecting section of masonry which is part of the original tower, now encased in modern masonry.

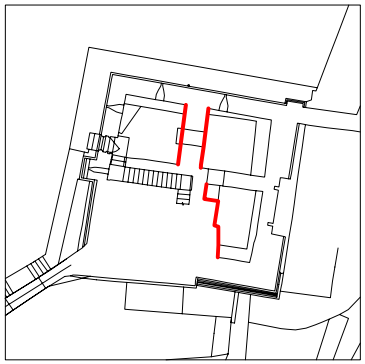
The southern half of the wall is in the southeast room. Refacing has largely removed the evidence of a door opening which Willson noted, but the scar of a dividing wall which ran east to west can still be seen. The bottom of the elevation also has a projecting section of masonry which is part of the original tower, also now encased in modern masonry.

South wall

The lower part of the south wall retains medieval masonry to a height of *c*.3m, with the refaced scar of the springing of a vault also being evident (see Figure 25).

Stair and first floor

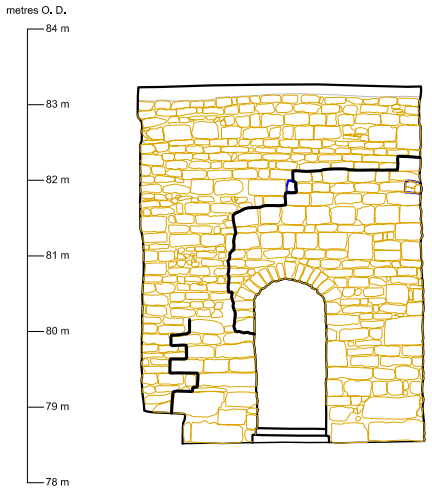
The first floor is now reached by a stair accessed from a doorway in the south wall of the northwest compartment (Figure 26). The door opening has a relieving arch with the lintel supported by shouldered jambs of late 12th to early 13th-century character. The stair rises to the east beneath a vault which is composed largely of rubble, although the sides of the stair passage are constructed in



KEY

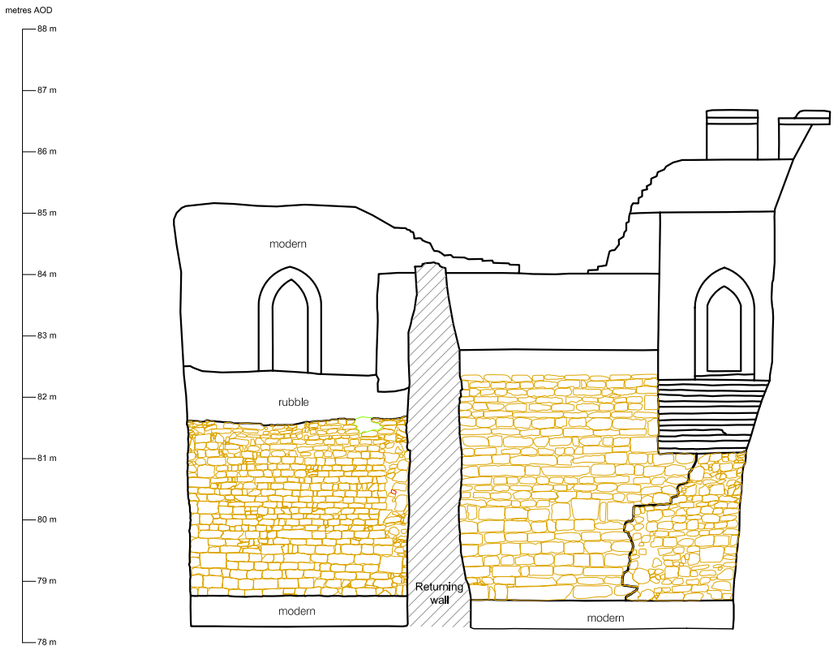
- CHANGE OF PLANE
- CUT
- PUTLOG HOLE
- LIMESTONE
- MORTAR
- GROUND LEVEL

East elevation

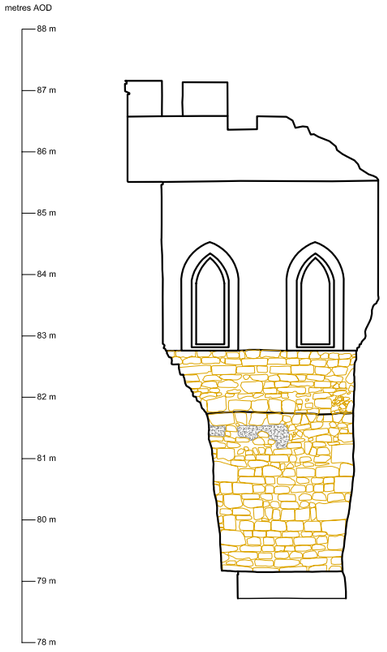


West elevation

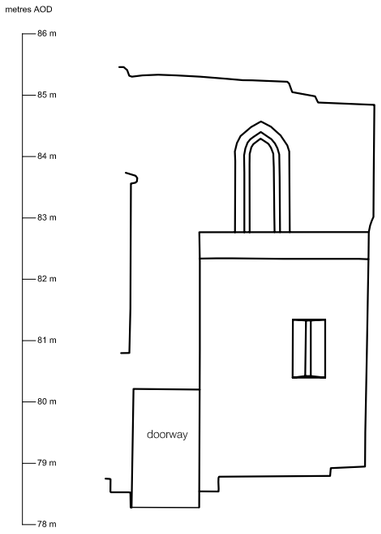
Observatory Tower, internal north-south lateral wall, east and west elevations | Scale 1:100 | Figure 24



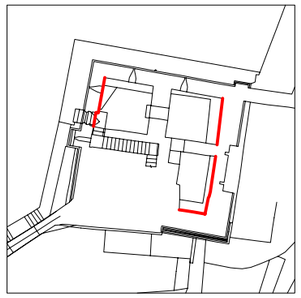
East elevation



South elevation



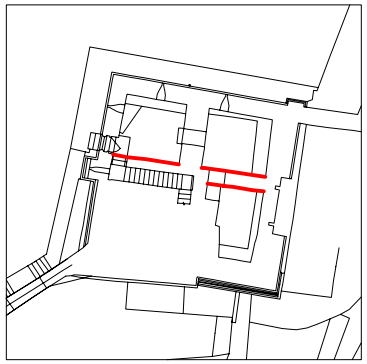
West elevation



KEY

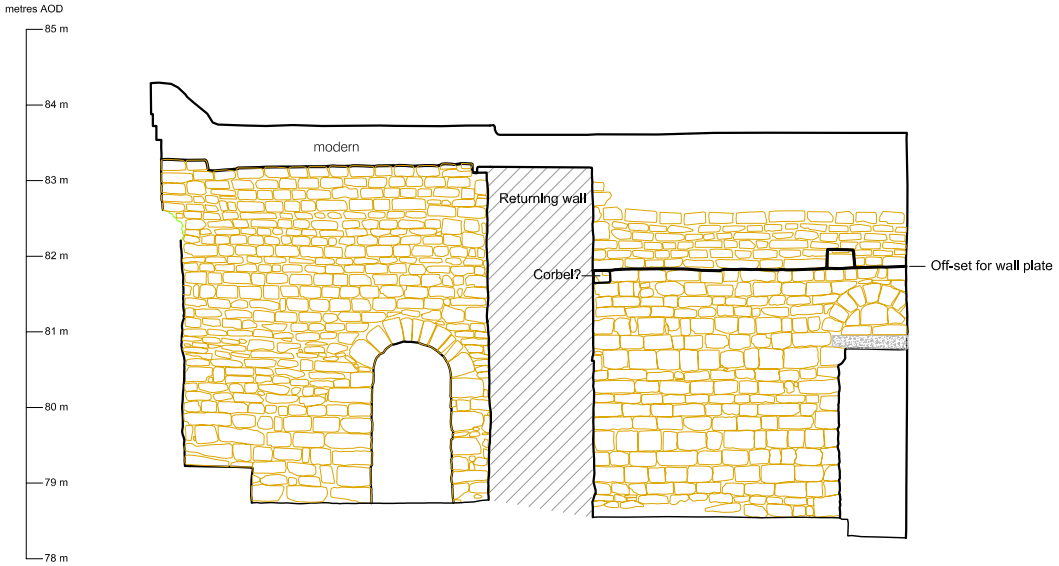
- CHANGE OF PLANE
- CUT
- LIMESTONE
- BRICK
- MORTAR
- GROUND LEVEL
- VEGETATION

Observatory Tower, internal east, south and west walls | Scale 1:100 | Figure 25

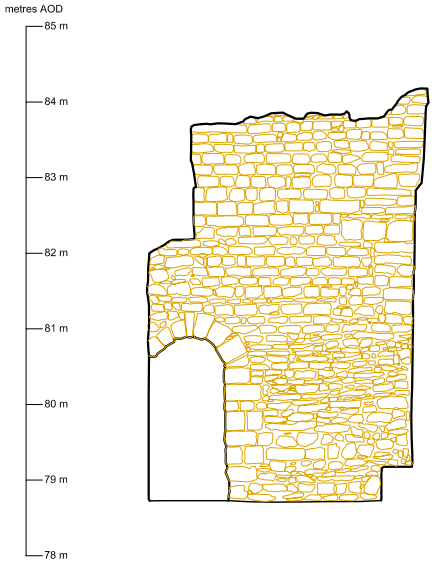


KEY

- CHANGE OF PLANE
- CUT
- LIMESTONE
- CONCRETE
- GROUND LEVEL
- VEGETATION



North elevation



South elevation

Observatory Tower, internal east-west lateral wall, north and south elevations | Scale 1:100 | Figure 26

large blocks of roughly squared masonry with oblique chisel tooling. The head of the stairs turns to the south, but there is some evidence at the head of the eastern run of the stairs, in the form of a blocked opening in the east wall, that there was a continuation of the passage to the east.

The stair passage turns to the south, to emerge beneath a ogee-headed arch. All the fabric in this part of the building is of late 18th or early 19th-century date. However, there are a number of reused medieval architectural features which have been incorporated into the fabric, the source of which is unclear.

The first-floor southwest corner of the tower forms an enclosed room, which provides access to the circular turret of 1815 which surmounts the tower. The remains of a newel stair rises within a bartizan projection in the southwest corner, some risers in fragmentary condition remain, which provided access to an upper floor. Unfortunately it is not clear whether this stair extended down to ground-floor level as this part of the building has been filled in.

In the south wall is a large rectangular opening, others although blocked are visible in the south and north walls. Above the western opening are the remains of an arch which appears to have been four centred. Insufficient detail remains to closely date the arch, but a date range of the later 14th to 15th century would be consistent with its form. It is unclear whether this represents a door opening or the top of an embrasure for a window, although on balance a window seems most likely. The opening might be the one illustrated by Samuel Buck in 1727, the head of which is just visible over the top of the south curtain wall (Plate 18).

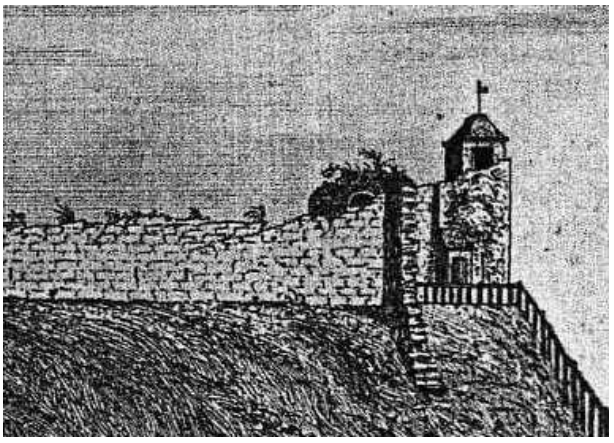


Plate 18 Segment of an illustration showing the Observatory Tower by Samuel Buck, dated 1727

3.4.4 Watching brief and investigation

In the recent work repairs to the tower were mainly concerned with the 19th-century fabric of the tower and the interventions revealed little further information on the earlier history of the tower. However, an investigation into the fabric was undertaken in the southwest corner of the tower. The Project Structural Engineer, Ed Morton, The Morton Partnership, was concerned with the structural integrity of the tower with ongoing inspections having identified indications of instability and active movement of the upper storeys. These problems are likely to have been caused by 19th-century works on the original medieval fabric particularly the load of the reconstructed tower. In order to investigate the cause, and identify possible solutions, it was necessary to investigate the nature of the possible blocking within the southwest room, work overseen by Willson in the early to mid-19th century.

Willson surveyed the Observatory Tower in the 1830s and depicts the southwest room prior to blocking. Overlay of modern metric survey onto Willson's plan allows the location of the subsequent

19th-century blocking to be identified. It was decided to temporarily unblock a small area of the 19th-century blocking stonework to assess the contents or interior of the space beneath the stair-turret (Figure 27). Following the inspection the stonework was replaced and made good.

Removal of several stones revealed a tightly bonded core-work in a hydraulic lime matrix. Removal of part of the exposed core-work simply exposed further tightly bonded core-work and probing through voids confirmed that this core-work extended back (to the west) by at least *c.*1m. It was concluded that the formerly vaulted space that existed on the ground floor in the southwest corner of the tower had been filled solid with core-work in the early 19th century. As further removal of a significant part of the core-work could have had implications for the structural stability of the tower, and would have little investigative value, it was decided to curtail any further investigation.

3.5 EAST CURTAIN WALL SOUTH

3.5.1 Documentary summary

Medieval

The same medieval references apply to the east curtain wall south as to the south curtain wall (see Section 3.1.1).

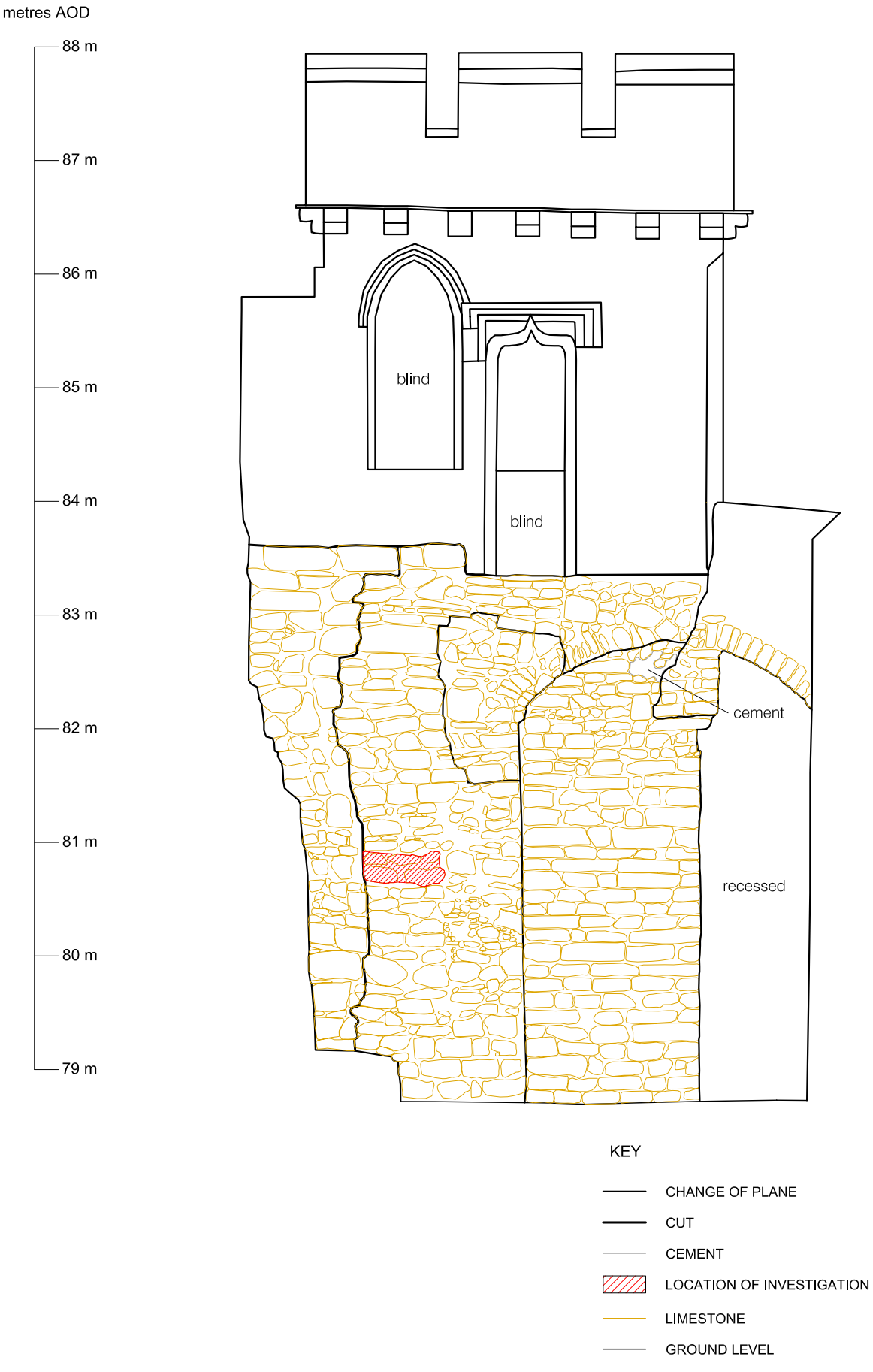
19th century

Willson noted that before the east curtain wall restoration work started in March 1840, the wall had been largely faced with brick. He also noted the remains of narrow windows in the upper part of the wall, with one lower down (Willson 786/G 80). As a result of the 1840 works Willson was able to view part of the wall's foundation. He observed that

> 'The foundations had been originally strengthened by two courses of timber laid in parallel lines, about 18" from the outward faces of the walls. These beams had varied in thickness, but were generally 10 inches to 1 foot square. They were bonded together by cross pieces, laid at a distance of six to seven feet apart,. All these timbers were so totally rotten than nothing but dust and several fragments were found.
>
> The foundations of the wall on the south side of the gate had been laid in a similar manner, the beams being cut into shorter lengths and laid like steps, according to the rise of the southeast mound' (Willson 786/G, 79).

The interior elevation of the curtain wall was also repaired and refaced in 1840. However, Willson made some useful observations on the fabric of the east wall before the refacing was undertaken:

> 'In this part of the castle, there had been two or three stories of rooms, lighted by narrow loops in the southward wall. The main surface of the wall was quite red from the effects of fire as particularly observed at the time of repair in 1840.
>
> This part of the wall is thinner than the average of the outer walls, it having originally another wall within it forming a range of rooms. Part of the semicircular recess formed in the wall was found



Observatory Tower, location of investigation, internal north-south lateral wall | Scale 1:50 | Figure 27

> in the upper part towards the south end. It was faced with neat masonry in the Norman style, and had belonged to an upper room (Willson 786/G, 79).

3.5.2 Interior

The curtain wall between the Observatory Tower and East Gate has a slightly more complex history than the external elevation alone would suggest. Before examining the evidence from the elevation it is worth considering the thickness and profile of the wall (Figure 28). The thickness of the wall, at the current internal ground level, is a minimum of *c*.3.5m (11ft 6") next to the East Gate, while at the southern end of the Mason's Yard, before curving to form a revetment wall, the wall measures *c*.4.25m (14ft). These measurements compare with a typical thickness of *c*.2.75m (9ft) for the northern section of the east curtain wall, to the north of the East Gate. However, the wall substantially thins, roughly at the bottom of the first-floor level of the East Gate buildings, to *c*.1.65m; a gauge which is much thinner than most sections of the castle curtain walls.

Much of the internal elevation of the curtain wall has been refaced leaving two discrete areas of medieval facing (Figure 29). Both surviving areas of medieval facing retain evidence for blocked openings which can be related to features visible externally and probably represent window embrasures.

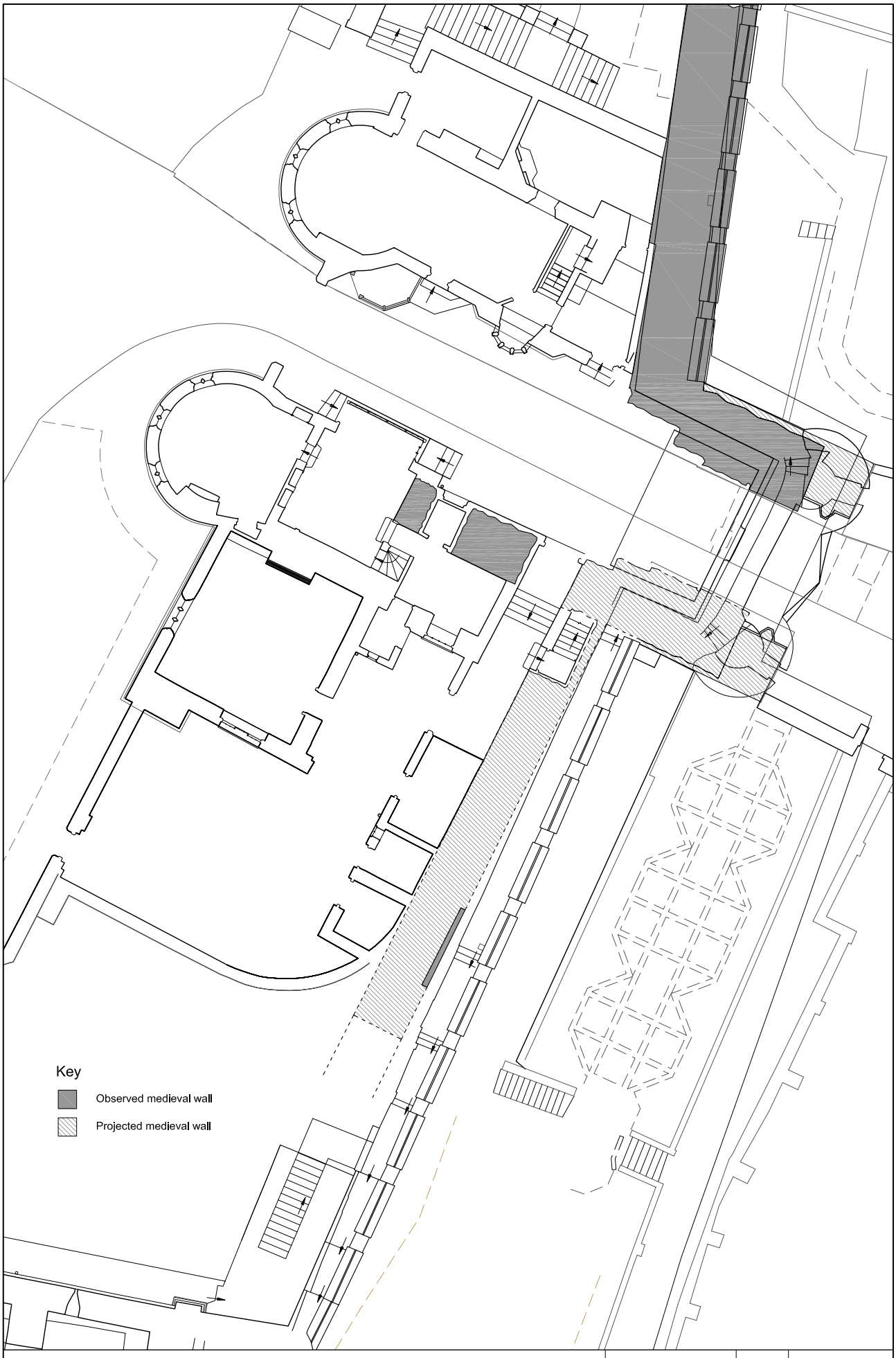
Only minimal stone repairs were required in the current works and there was little scope for further investigation.

3.5.3 Exterior

A close examination of the external fabric revealed that most of the extant face-work, bonded with a hard hydraulic lime mortar, dated to the repairs undertaken by Willson in the 1830s. However, two sections of medieval facing survived towards the bottom of the elevation; a section towards the bottom of the Observatory Tower mound and a further section to the north directly above the Memorial Garden (Figure 30). These two sections appear to have been left because of the presence of a terrace and stairs against the wall at the time of the re-facing work.

The section on the Observatory Tower Mound is the most interesting because of the presence of a narrow arch-headed loop opening. Although much of the masonry forming the jambs of the opening and its head is replacement stone from the 1830s, sufficient original work remains to indicate that it is an accurate restoration of the feature, other than it appears to have originally been taller; the dressed ashlar blocks of the northern side of the window can be seen to extend down below the current sill level.

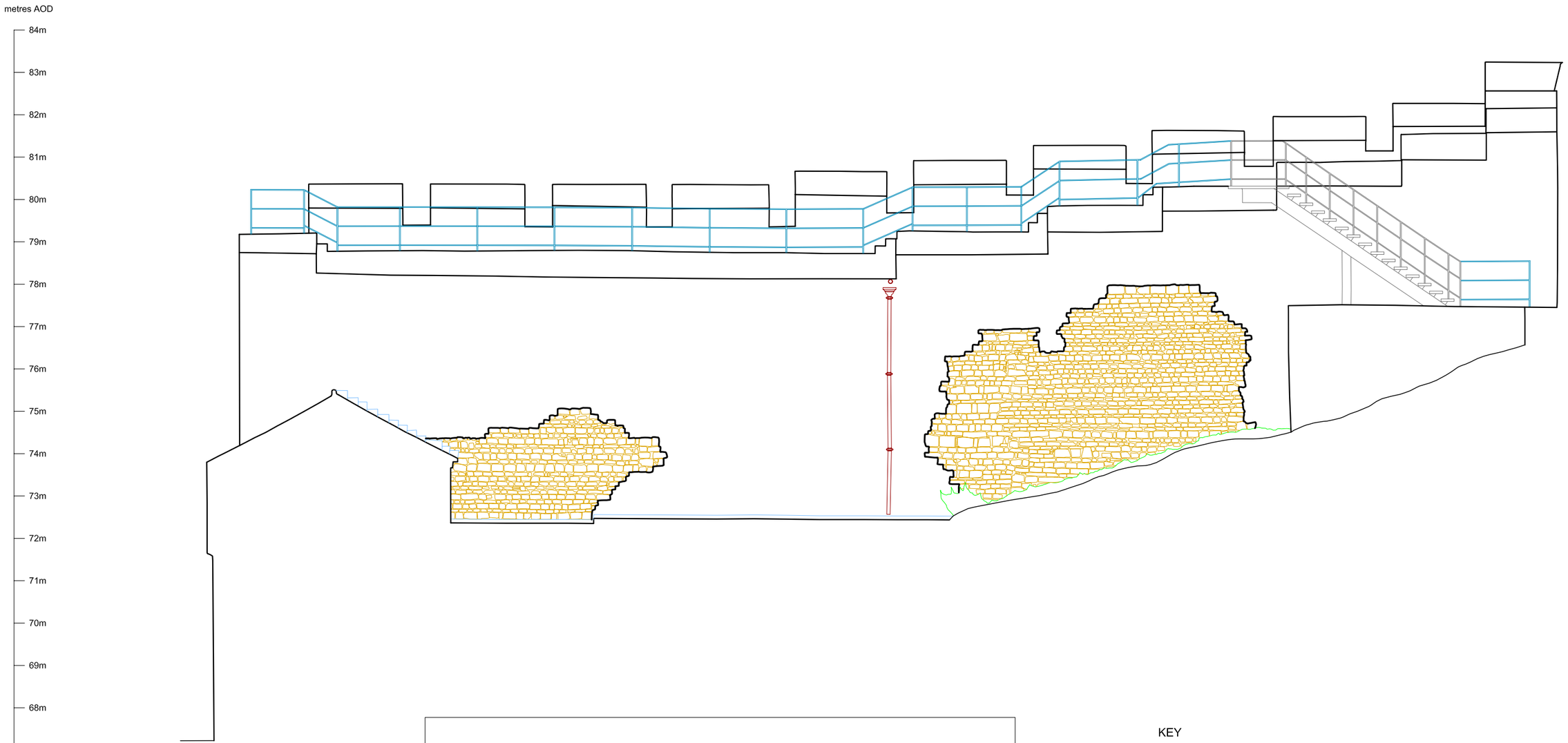
On the internal face of the curtain wall, despite a substantial area of medieval face-work surviving where the embrasure should be, there is no evidence for the opening. Further, a comparison of ground levels indicates that the feature would have, at least in part, been covered by the Observatory Tower Mound (Figure 31). The implication of this sequence is that the opening must have been



Plan of the east curtain wall south

Scale 1:200

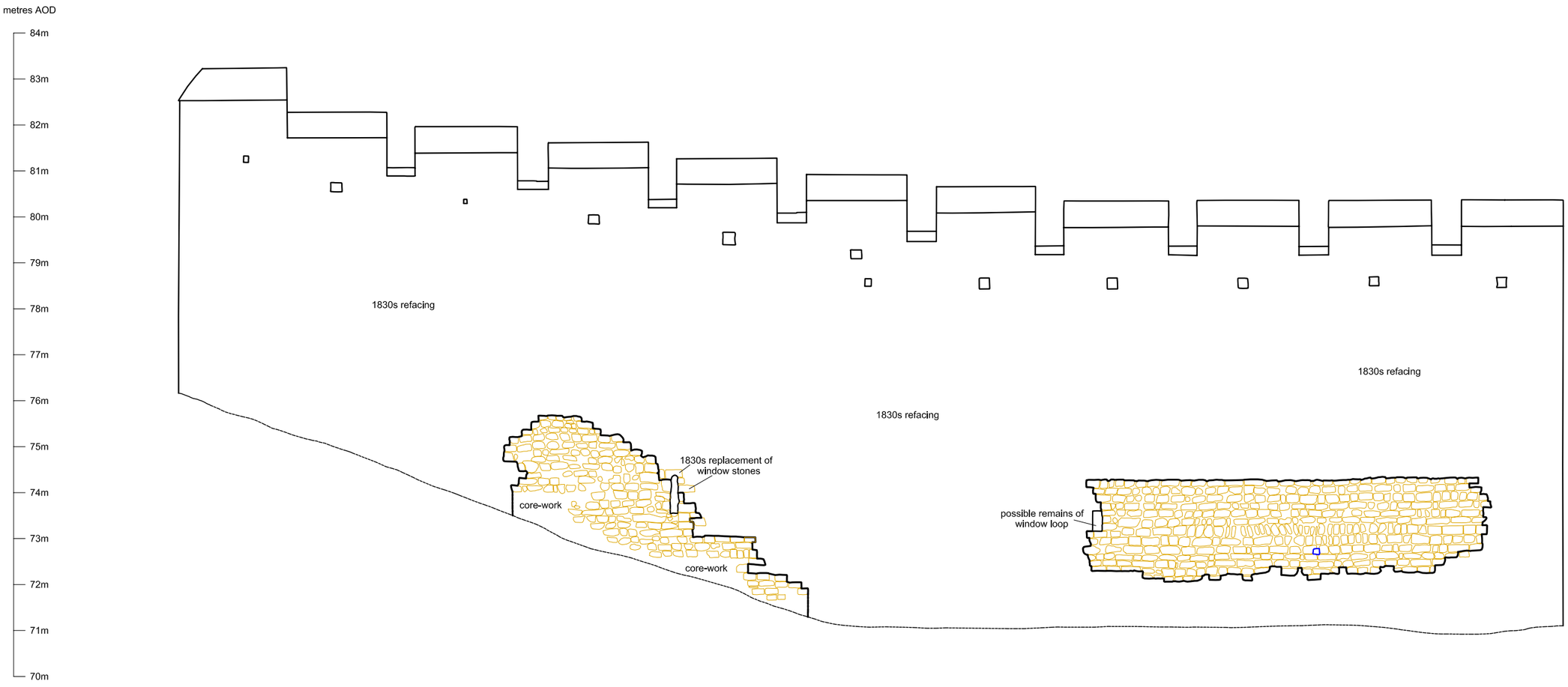
Figure 28

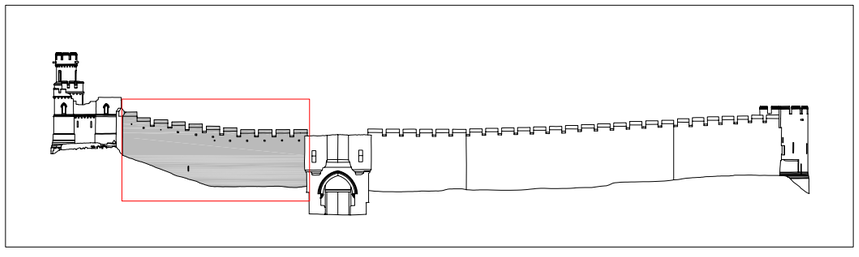


Internal elevation of the east curtain wall south

Scale 1:100

Figure 29





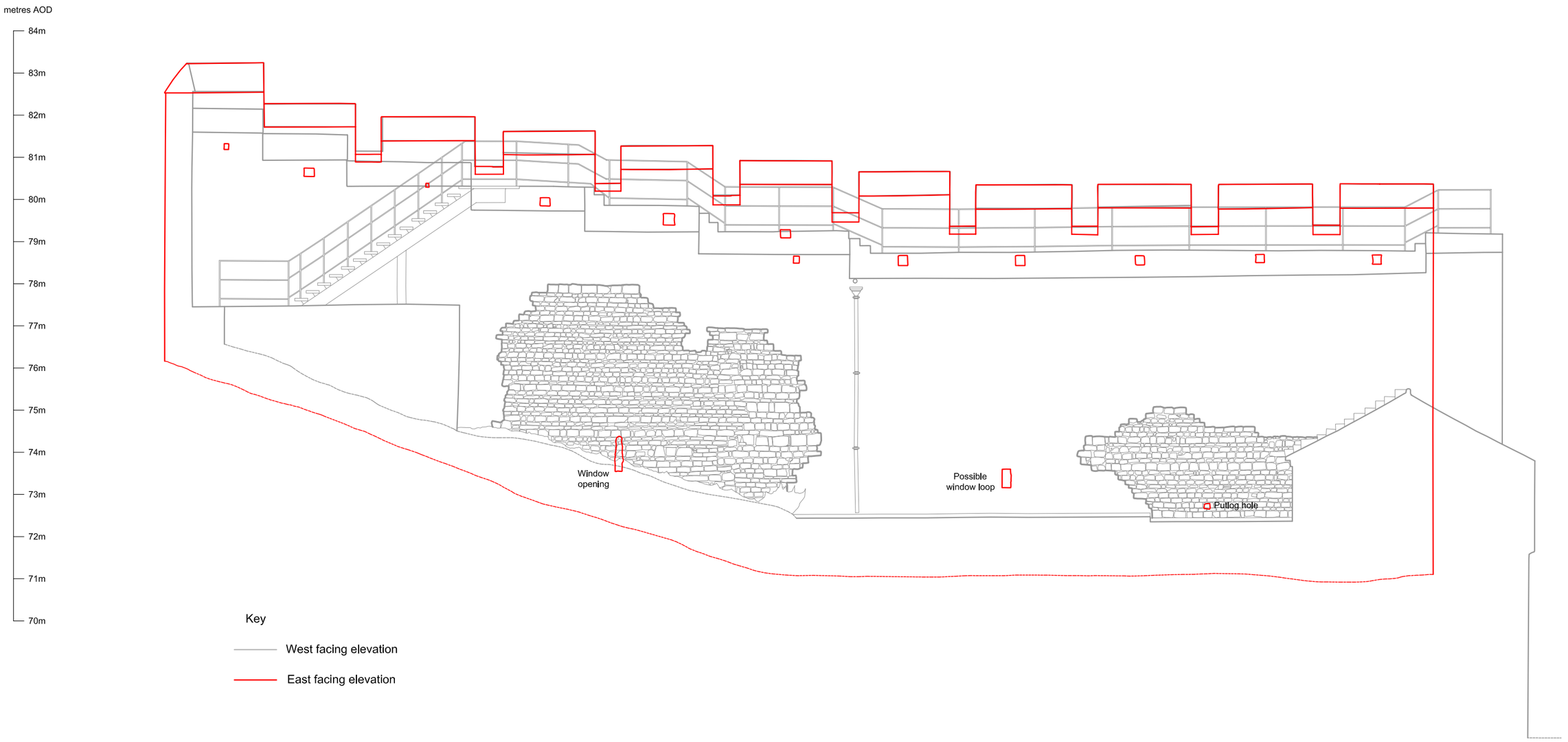
KEY

- CHANGE OF PLANE
- CUT
- LIMESTONE
- PUTLOG HOLE
- GROUND LEVEL

External elevation of the east curtain wall south

Scale 1:100

Figure 30



Internal and external elevations overlain, east curtain wall south

Scale 1:100

Figure 31

redundant by the time Observatory Tower Mound took on its current internal profile and by the time the later medieval re-facing had been applied to the interior face of the curtain wall. The reminder of the facing stonework in this section is in very poor condition and in many areas reduced to core-work and little can be inferred from it.

The second section is slightly more extensive and preserves one original putlog hole and the possible remains of a further loop window opening. The latter has been truncated by the 1830s re-facing but sufficient remains to at least be confident of its position and its sill height. The sill height is very close to the level of the southern window; this evidence alone would suggest, internally, that there was a building range against the curtain wall which had uniform floor levels at least as far as the southern window.

3.5.4 Watching brief

In contrast to the other sections of the curtain wall the southern section of the east curtain wall only required the lifting of the modern paving and removal of the modern bedding. The top of the medieval wallcore was not encountered or observed on this section.

Repair works to the range of 19th-century buildings against the internal face of the curtain wall required the removal of the their roof coverings. The intervention provided the opportunity to observe the relationship between the rear (eastern) wall of the building range against the curtain wall (Plate 19). It was evident that, rather than the rear wall being a 19th-century addition against the east curtain, it was in fact medieval and formed a discrete structure from the upstanding east curtain wall. The relationship observed suggests that the former had existed before the curtain wall which had been constructed against it. This inner wall is likely to have formed the eastern wall of a range of buildings in this area, further evidence for which was found by excavation (FAS forthcoming). The inner wall could be traced to the north as far as the Norman fabric of the East Gate which it abutted. To the south, the inner wall could be traced a short distance into the Observatory Tower mound, either constructed within it or buried by it.

Plate 19 Junction between the east curtain wall and east wall of the east range

3.6 EAST GATE

3.6.1 Documentary summary

Medieval

In the year 1224-5 a sum of £20 was spent in repairs and improvements to the gate of Lincoln Castle facing the church of St Mary, the tower of ‘Luce’ and the building of a barbican. The reference to the

construction of a barbican has been taken to refer to that which was located in front of the east gate (Brown *et al.* 1963, 705).

In 1225-6 the constable of Chester was ordered to let the constable of Lincoln Castle have 40 oaks for strengthening the castle, and the constable (Osbert Giffard) was also to receive 60 marks for operations in the castle (Hartshorne 1850, 44). The campaign of work to the east gate ('great gate') was still in hand in June 1227 when an order was issued for viewers (the sheriff and lawful men of the county) to go and inspect the situation.

> 'To the sheriff of Lincoln. *Contrabreve* to take with him lawful men of his county and go to Lincoln castle to survey the gates there, which are broken, as the king hears, and to survey the tower of his great gate of the castle towards the church of St Mary, Lincoln, which tower is not yet finished, and to cause the gates to be repaired and the tower to be completed' (CLR 1226-1240, 36-7).

The order does not appear to have been acted upon for a further order, almost identically worded, was issued in August 1227:

> 'To the sheriff of Lincoln. *Contrabreve* to take with him lawful men of that county and to go to the castle of Lincoln to survey the gates thereof, which are broken, as the king hears, and to survey the tower of the great gate opposite the church of St Mary, Lincoln, which tower is not yet completed, and to cause the gates to be repaired and the tower to be completed as befits' (CLR 1226-1240, 46)

Nearly four years after works to East Gate had been started the building appears to have been still incomplete, with an order issued to the sheriff in April 1228:

> 'To the sheriff of Lincoln. *Contrabreve* to cause the said Robert, constable of Lincoln castle, to have 30 marks for the works on the gate of the castle' (CLR 1226-1240, 76)

In May1229 20 marks were spent on making a lime kiln for the works on the castle (CLR 1226-1240, 127) and in June a further 20 marks were to be provided to Robert de Tateshale, constable of Lincoln Castle, for 'the works of the castle' (*Ibid.*, 134). It is not stated whether the lime, or extra financial allowance, was intended for finishing the works on East Gate or what other works were taking place in the castle. As far as can be established from the documentary evidence the works between 1224 and 1229 encompassed the reconstruction of East Gate, the erection of a barbican (presumably that which stood in front of East Gate) and repair works to the Lucy Tower (which might have encompassed some of the 'houses' of the castle).

18th century

Several drawings from the late 18th century, evidently prepared before the demolition of the barbican, provide information of the appearance of the East Gate in this period.

19th century

Willson made various observations on the alterations that had been made to the fabric of the East Gate in the 19th century including that the '...cill was lowered about 3 feet, on levelling the road after the Judge's House was built...' (*i.e.* after 1809). Willson also noted that fragments of 'Norman architecture' were found near the gate, but that 'no foundations of a hall or chapel [can] be traced' (Willson 786/G, 4). Unfortunately he does not more precisely locate the latter finds which were presumably to the west of the gate within the castle bailey.

On the standing fabric of the East Gate Willson made the observation that on the north side of the north turret there was a

> 'hole in the masonry at *a*, and evidence of others at *b* and *c*...and the appearance of the masonry, suggest that the doorway on the stairs, opening to the North, was intended to give access to and from the way on the curtain wall and its hoards, by means of a covered timber gallery with steps' (Willson 786/G, 6)

3.6.2 Exterior

East elevation

The 13th-century frontage to the gate largely survives and includes a two-centre arch of two orders, the inner order springing from moulded corbels (Figure 32). The outer order of the arch is formed from chamfered voussoirs and surmounted by a hood moulding. To the north and south of the arch, much of the facing masonry has been replaced in order to cover up the scars resulting from the removal of the barbican walls in 1785 and 1795 (Willson 786/G).

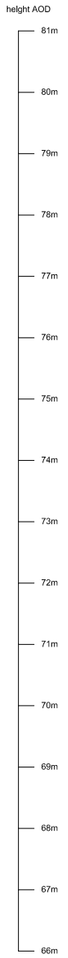
The bottom of the jambs to the gate project into the opening slightly so that they are flush with the width of the earlier gate arch. Willson's observation that the road was lowered by 'about 3 feet' after *c.*1809, means that the projections would have been less prominent than they appear to day. These features might have extended into the barbican area where they could have acted as bench seats either side of the passage.

The upper part of the gatehouse facade is dominated by a pair of turrets resting on two corbelled courses, flanking a beaked projection in the centre. The beaked feature has parallels with the early 13th-century work at Dover Castle, such as the Fitzwilliam gate built by King John, and, more pertinently, the blocking tower of the North Gateway (Norfolk Towers) constructed after 1217, following the siege of 1216.

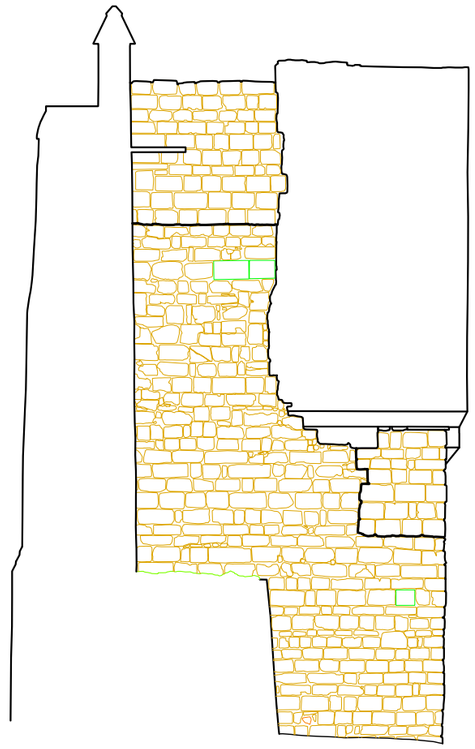
Each turret is provided with a small narrow doorway which would have provided access to the wall-heads of the demolished barbican.

South elevation

In contrast to the north elevation the external south elevation of the gate retains much of its medieval facing masonry (see Figure 32). The western side of the elevation retains the facing masonry of the



East elevation



South elevation

KEY

CHANGE OF PLANE	NEW STONE
LIMESTONE	TILE
CUT	VEGETATION
GROUND LEVEL	TIMBER

East Gate, east and south elevations | Scale 1:100 | Figure 32

original Norman gate which can be seen to have been truncated by the insertion of the bartizan turret. An infill of masonry can be discerned immediately below the bartizan, relating to its insertion, with a further area of Norman masonry below. The latter would have been part of a projecting (to the east) buttress, flanking the Norman gate arch, with the later bartizan seated upon it. The upper *c*.2.3m of elevation between the curtain wall and the bartizan turret was refaced in the 19th century.

North elevation

With the exception of the bartizan turret the north elevation has been entirely refaced and there is no exposed medieval masonry. Within the fabric of the upper part of the bartizan turret there is a blocked door opening, which might have provided access to a small section of timber *hourd* along the top of the north elevation of the gate.

3.6.3 Interior

Ground floor

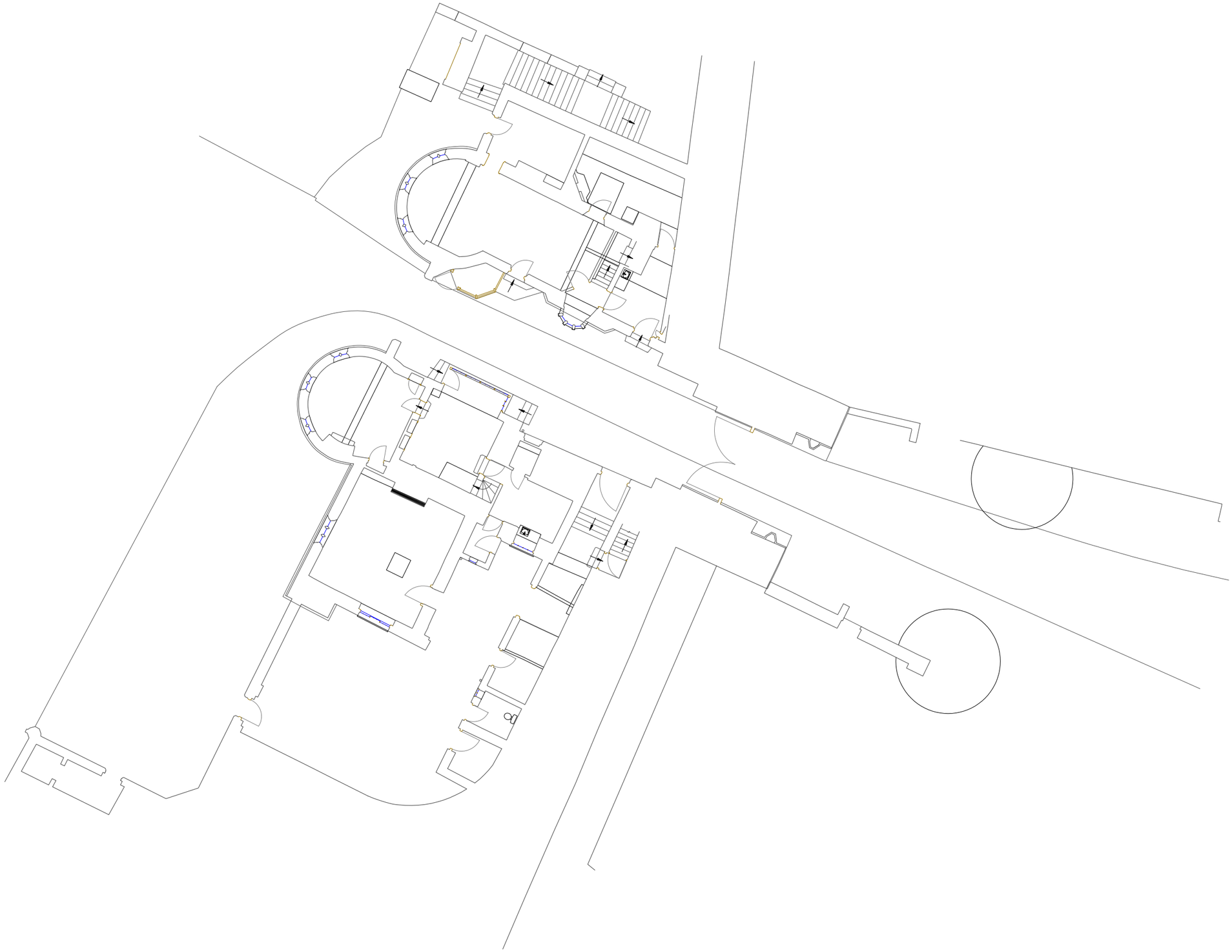
Entering the gatehouse from the east the layout of the Norman gatehouse can be traced with a pair of square section piers, with a low chamfered course; the chamfered course to the south has been largely cut back (Figure 33). The chamfered course can be traced most clearly on the north side of the gate passage where it returns to the north and then, in a cut back state, continues within the recess beneath the 13th-century gate arch. The chamfer and Norman gate arch is identical to the outer arch that survives on the West Gate. To the west, beyond the current modern doors, there is evidence for a further gate arch of identical form, although the upper part of the arch has long since disappeared. Between the two, in the space now occupied by the modern doors, is a portcullis groove, with no obvious evidence that this feature has been inserted.

To the west of the Norman gate arches, early 19th-century reconstruction has obscured most of the archaeological evidence. The 1806 drawings of the gate suggest there was a rebate either side of the passage, which can still be seen, and finally a recess on either side. The eastern north and south returns for the recesses appear to survive in the current fabric.

First floor

Virtually no internal medieval fabric is now exposed at first-floor level within the gatehouse, all internal elevations having been refaced in the 19th and 20th centuries. However, an offset that runs around the interior of the building was evidently intended to support the first floor which might have been of timber. The authenticity of the blocked two centre arched opening in the east wall is questionable, although Willson suggests that this feature existed before he undertook his restoration of the East Gate. It is not noted in any earlier antiquarian accounts and therefore might have been created as part of the 1820s work to the gate complex.

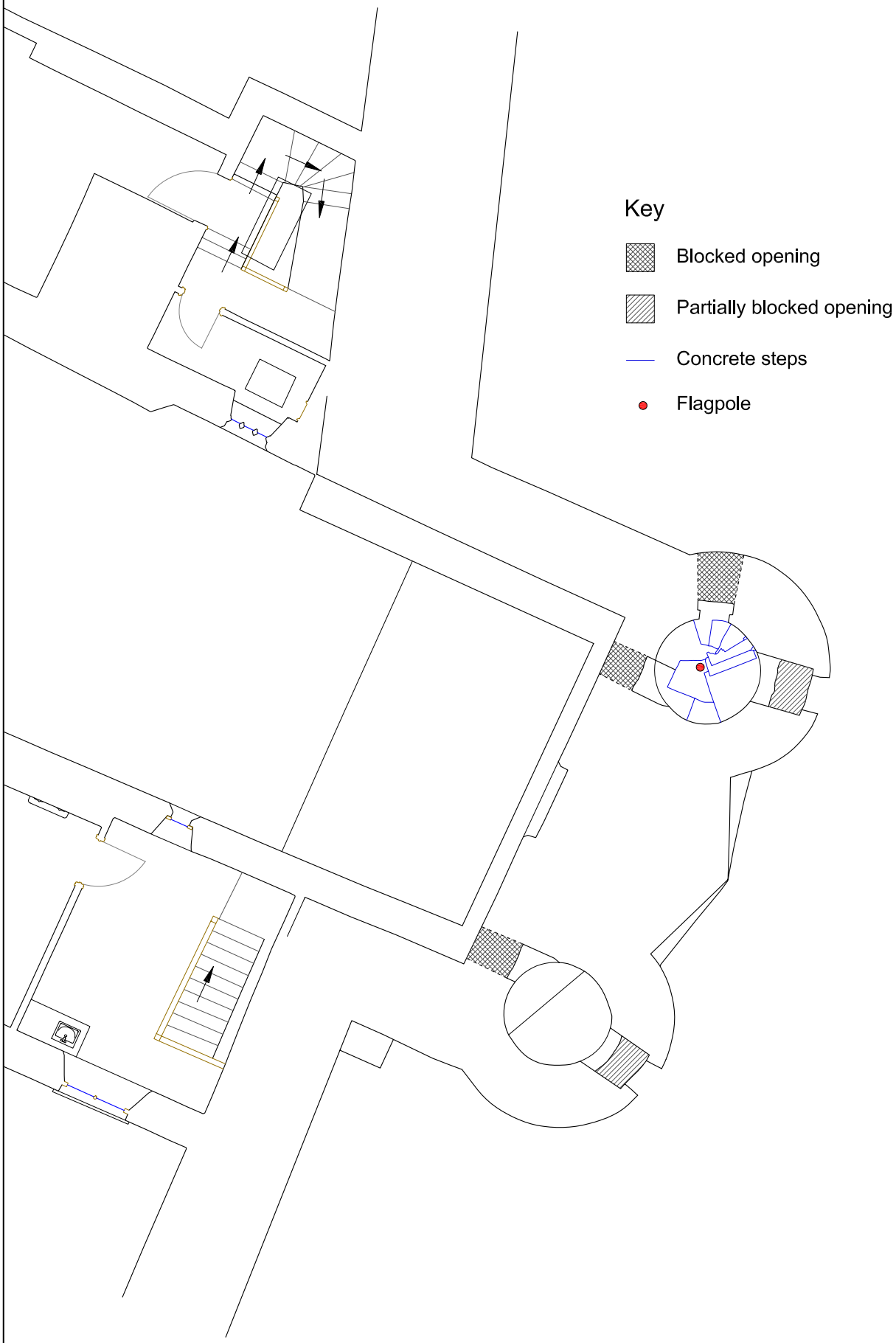
During repair works, it was possible to examine the interior of the bartizan turrets. The turrets contained internal stairs which provided access to both the barbican doors and the upper parts of the turrets (Figure 34), which have been cut down from their full height; in both turrets several risers remained *in situ*. Access to the turrets, from the interior of the first floor of the gatehouse, was



East Gate, ground floor plan

Scale 1:200

Figure 33



East Gate, first floor plan | Scale 1:100 | Figure 34

provided by doorway in the rear (west) wall of each turret; the blocking of each doorway was evident in both turrets (Plates 20 and 21). Within the first floor of the East Gate the position of the door openings have been comprehensively covered over by refacing, although drain pipes (for the interiors of the turrets) are visible protruding through the wall.

An examination of the door openings that led from the interior of the bartizan turrets out onto the East Gate barbican revealed that they both retained their door rebates (Plates 22 and 23) and upper iron pintels to seat their doors. The lower pintels in both door openings have been covered over by the masonry blockings that filled the lower part of the openings.

Plate 20 East Gate, blocked doorway in north bartizan turret

3.7 EAST CURTAIN WALL NORTH

3.7.1 Documentary summary

Medieval

See section 3.1.1 for a description of medieval sources pertinent to the castle walls.

19th century

According to Willson's notes the wall was repaired in 1841, which included the installation of battlements. Willson provides much information on the foundations of this stretch of curtain wall, discovered when the wall was repaired during the 1841 works:

Plate 21 East Gate, blocked doorway in south bartizan turret

> 'The mound on the outside has been dug down below its antient level, next to the wall, from five to seven feet, or perhaps a little more. The wall was footed with new work below the level of the foundations three feet or more.
>
> The foundations had been originally strengthened by two courses of timber laid in parallel lines, about 18'' from the outward faces of the walls. These beams had varied in thickness, but were generally 10 inches to 1 foot square. They were bonded together by cross pieces, laid at a distance of six to seven feet apart. All these timbers were so totally rotten than nothing but dust and several fragments were found.' (Willson 786/G, 79)

This construction technique had been employed on the curtain wall between the east gate and the Observatory Tower.

3.7.2 Exterior

The external fabric of the northern section of the east curtain wall received extensive repair in the second half of the 20th century. The technique employed at the time, cutting back of the wall face, applying a cement coating and fixing thin re-facing stones to the same, has fairly comprehensively removed any archaeological evidence for the first *c.*27m of the wall from the East Gate. For the first 27m the appearance of the wall can be compared with the interior of sections of the south curtain wall, where an identical style of masonry has been employed. The section beyond, as far as Cobb Hall on the northeast corner, is also largely the result of 19th and 20th-century re-facing. Raking out of the joints in this area exposed a sequence of cement and hydraulic lime with no evidence for earlier mortars.

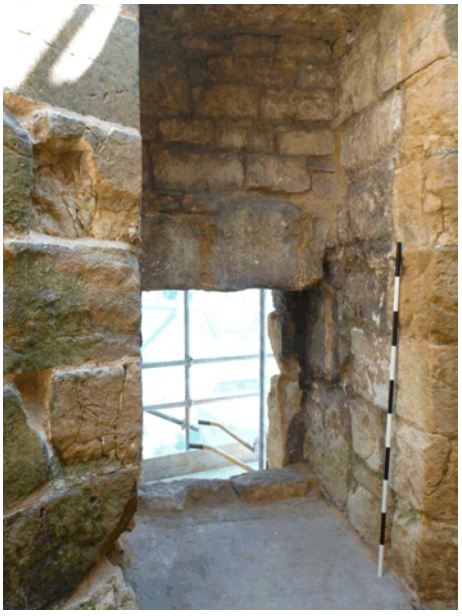


Plate 22 East Gate, interior of north bartizan turret

Externally, no medieval features were identified in the course of the repair works and there was no evidence discovered for the additional tower that appears on John Speed's 1607 draft illustration of the castle (see Plate 3).

3.7.3 Interior

The internal elevation of the curtain wall has some possible localised areas of medieval facing surviving, but these are of limited extent and do not provide any insight into the development of this section of the curtain wall. In the course of the current repair works only minimal stone replacement was undertaken which was largely in areas of previous (19th-century) refacing.

Plate 23 East Gate, interior of north bartizan turret

3.7.4 Watching brief

During stripping and replacement of the parapet walkway and improvements to the wall-head drainage, it was possible to examine the composition of the exposed fabric. As with the other sections of curtain wall examined it was evident that extensive works had been carried out to the wall-head during the 19th and 20th centuries. Removal of the existing parapet slabs, and removal of the modern bedding material, exposed the wall-core of the curtain wall. The wall-core was bonded in a soft brown lime mortar identical to that which had been identified in the medieval work on the eastern half of the south curtain wall. As with the south curtain wall it was apparent that the medieval parapet had been taken down in its entirety and replaced in the 19th century with the current parapet. More recently, the rear (inner) edge of the curtain wall had been heavily cut into for the insertion of a rough concrete

ring beam and the fixings for the railings, all work that appears to date to the 1970s (Plate 24).

Plate 24 East curtain wall north, wall-walk removed

3.8 COBB HALL TOWER

3.8.1 Documentary summary

Medieval

In 1233 building operations were underway in the castle on the construction of the '*cusdam*' tower, being built by command of the king:

> *'De turri Linc'.—Mandatum est eidem P. quod habere faciat vicecomiti Linc' xl. quercus in bosco de Axiholm, qui est in custodia regis, ad operationem cusdam (sic) turris quam fieri facit per preceptum regis in castro Linc'. Teste ut supra. Per ipsum regem coram Wintoniensi.*' (CCR 1231-4, 246)

The translation of *'cusdam'* is slightly ambiguous and, in medieval Latin, has multiple meanings, but 'custodian' or 'keeper' is likely. The reference to '*quercus*' means that oaks were being obtained for the construction of floors or the roof. The works were clearly of sufficient importance that viewers were to be appointed by the mayor of Lincoln to monitor the works:

> *'De operatione castri Linc'.—Mandatum est majori Linc' quod duos quod duos probos homines de villa Linc', de quibus confidit, eligat et assignet ad operationem castri Linc' custodiendam. Teste ut supra. Per episcopum Wintoniensem.'* (CCR 1231-4, 246)

In view of the near identical style of masonry employed on the alterations to the East Gate with that on Cobb Hall it seems highly likely that the *cusdam turris* is in fact Cobb Hall.

The tower does not appear to feature in the inquisition into the state of the castle in 1327 and must have been one of the few parts of the castle in good condition.

19th century

Willson provides a considerable amount of information on Cobb Hall and it is worth reproducing at some length. Regarding the roof Willson noted that:

> '...the modern tile was taken off in 1815, and the walls repaired and embattled, and the vault covered with flat stone; the square part was originally of the same height as the circular. The decayed state of the walls at the top after the tiles were removed showed that the tower must have stood unroofed for a long time, perhaps after the original battlements were destroyed in some wars; it was most probably machiciolated. A strong timber partition divided the principal storey into two parts, with a door - Two doors opened at the sides close to the great walls without, for sallies (the same sort of doors are seen in the towers in the chancellors garden)...

> The embattling of Cob's Hall is no improvement on the castle in a distant view, it not being high enough to form an important feature and the embrasures are too numerous and slight.' (Willson 786/G, 65)

In a further note he clarifies some points and repeats his comments regarding the condition of the walls:

> 'The walls were found very much shattered and defaced on the outside towards the top when the tiled roof was removed. That roof must have been put on after the original battlements had been destroyed, and by the shattered state of the stones at the top, this tower had probably stood uncovered a long time before the tiles roof was put on probably after the civil war. The new battlements were two feebly moulded and want projection of bolder. . . The top is made now completely circular, but that is not the original and proper form of the tower. The stairs within it were only put up when the new platform was made.' (Willson 786/G, 65)

Willson also mentions the discovery of about 200 stone balls in 1831, found in Cobb Hall when the interior was repaired '...and the two doors leading to the mound close the curtain wall were cleared....' He suggested that they might have been '...intended for catapult, or use in primitive mortar....' Apparently some of the balls were inserted into the south walls of the castle during 1837, '...at which time one or two such balls were found in a breach of the wall which had been mended....' (Willson 786/G, 65).

Regarding some of the internal alterations he noted that a:

> '...partition removed when roof was altered and platform for execution of criminals. The [whole?] of the door was taken down, and the jambs raised 2'6" higher, in Feby 1825. Quaere whether this partition was made to separate male prisoners from female....' (Willson 786/G, 65)

The pre-1815 form of Cobb Hall appears in several historic illustrations showing the form of the tiled roof. A view by S. H. Grimm, dated 1784 shows the roof and tower from the northwest, while an early 18th-century view of the interior of the castle bailey in the Abell collection shows that there was a window lighting the second floor.

3.8.2 Exterior

Cobb Hall is a D-shaped tower facing out from the northeast corner of the castle enclosure, with the rear section of the tower being trapezoidal. It is now of two storeys with a roof-walk, but originally had a further storey.

Externally it is constructed of ashlar limestone blocks with a base of three chamfered courses. Three arrow loops run around the bottom of the tower at basement level, their bases cutting into the chamfered plinth. A further four loops are located at ground-floor level, with rectangular door openings located at the re-entrant angles with the curtain wall, with a small loop above each door. The doors have been blocked and the disruption to the masonry around them suggests that they are insertions. The door sills are located well above the level of the castle rampart, further reinforcing the

impression that they are insertions. Above ground-floor level the tower has been the subject of a considerable amount of refacing, which has obscured any archaeological evidence in the fabric. However, it is highly likely that the tower would have had a further storey, perhaps in part contained within the original roof space.

The tower is accessed at ground-floor level from the castle bailey through a door opening with a two-centred arched head. Flanking the entrance is a pair of rectangular narrow window openings. Both window and door openings appear to be restorations of the early 19th century, as is much of the external facing, with comparable contemporary work on the Observatory Tower of 1815. Internally, both window embrasures have been heavily altered so their original form is difficult to ascertain with certainty, although they are likely to have originally been arrow-loops.

3.8.3 Interior

Ground floor

The southwest part of the ground floor of the tower is roofed with three ribbed vaults forming bays, with the central bay the widest, flanked by the two narrower bays (Figure 35). The central and eastern vaults have a boss at the centre of the vaulting, while that to the west is plain. The southwest ends of the vault ribs in the central bay spring from large corbels to either side of the entrance, while the remainder spring from a stringcourse that runs around the internal walls. The stringcourse has a single chamfer on its lower face and is set *c.*1.5m above the current floor level.

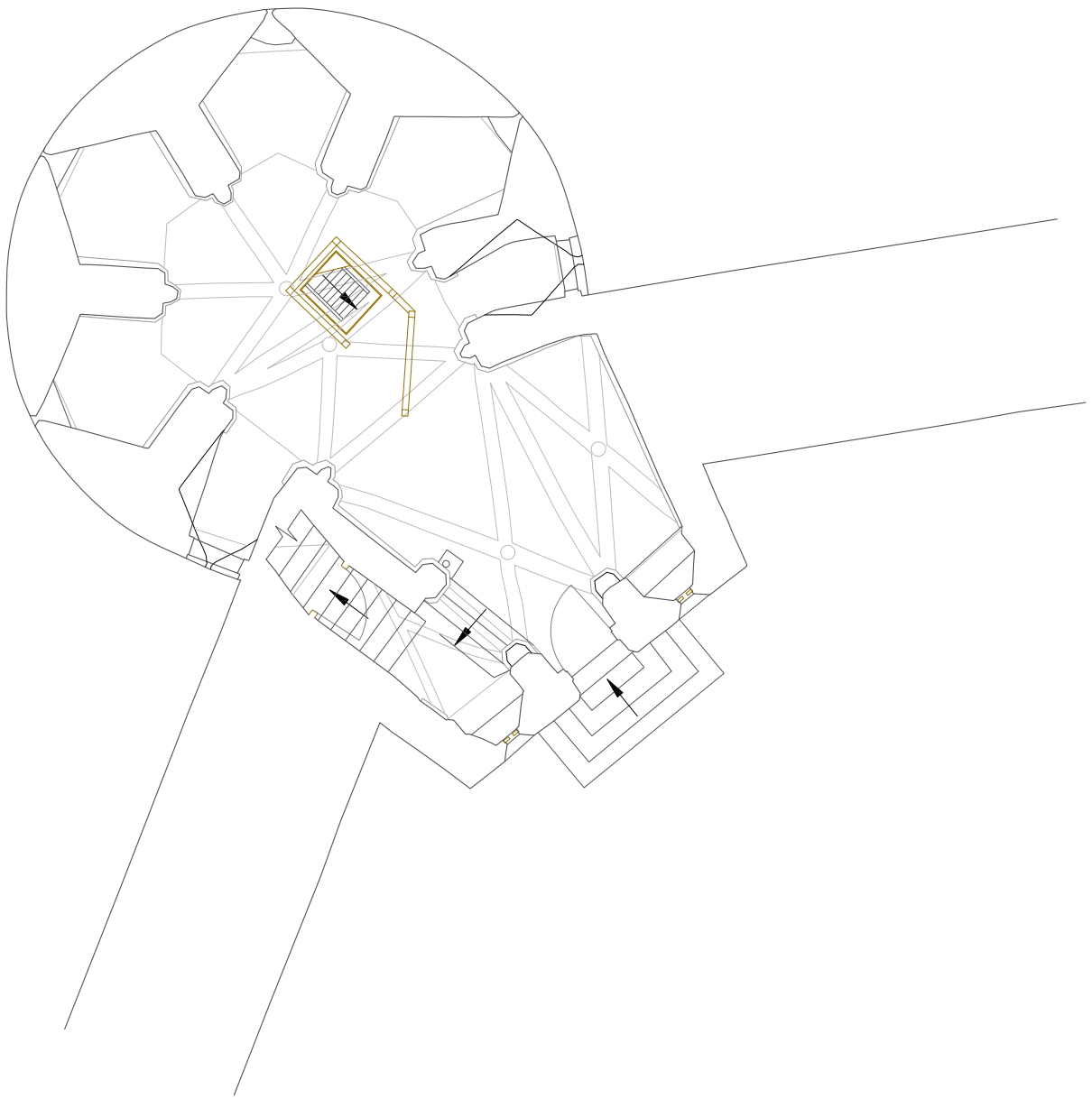
While the eastern bay is open to the central bay, the western bay is partly closed off by an arcade of two arches, the centre of the arcade supported upon a single pier. The northern arcade arch is blocked with reset medieval masonry, probably done when a stair was inserted within the western bay in the early 19th century.

The D-shaped front section of the tower is reached under a single arch which spans between the northwest and southeast walls. The central area is covered with a ribbed vault divided into two sections. The northern part has a vault that forms five segments, while that to the south is divided into four segments. The meeting point of the ribs is finished with a boss. From the central area there are six embrasures arranged around the room; each is provided with an arrow loop, apart from those to the west and south which have blocked door openings, noted externally. The door openings retain the iron pintles that would have hinged the doors to close the openings off, and there is evidence for a draw-bar hole in the south embrasure. Both door openings appear to be later cuttings into embrasures that were originally intended to contain arrow loops.

Basement floor

The basement is now reached through an opening in the floor of the ground floor; a feature which has clearly been cut into the rib vault that covers the basement room (see Figure 35). The vault divides the ceiling into six sections; the ribs spring from a chamfered stringcourse that runs around the room in the same manner as the ground floor and meet with a boss. There are three arrow loop

Ground floor



Basement

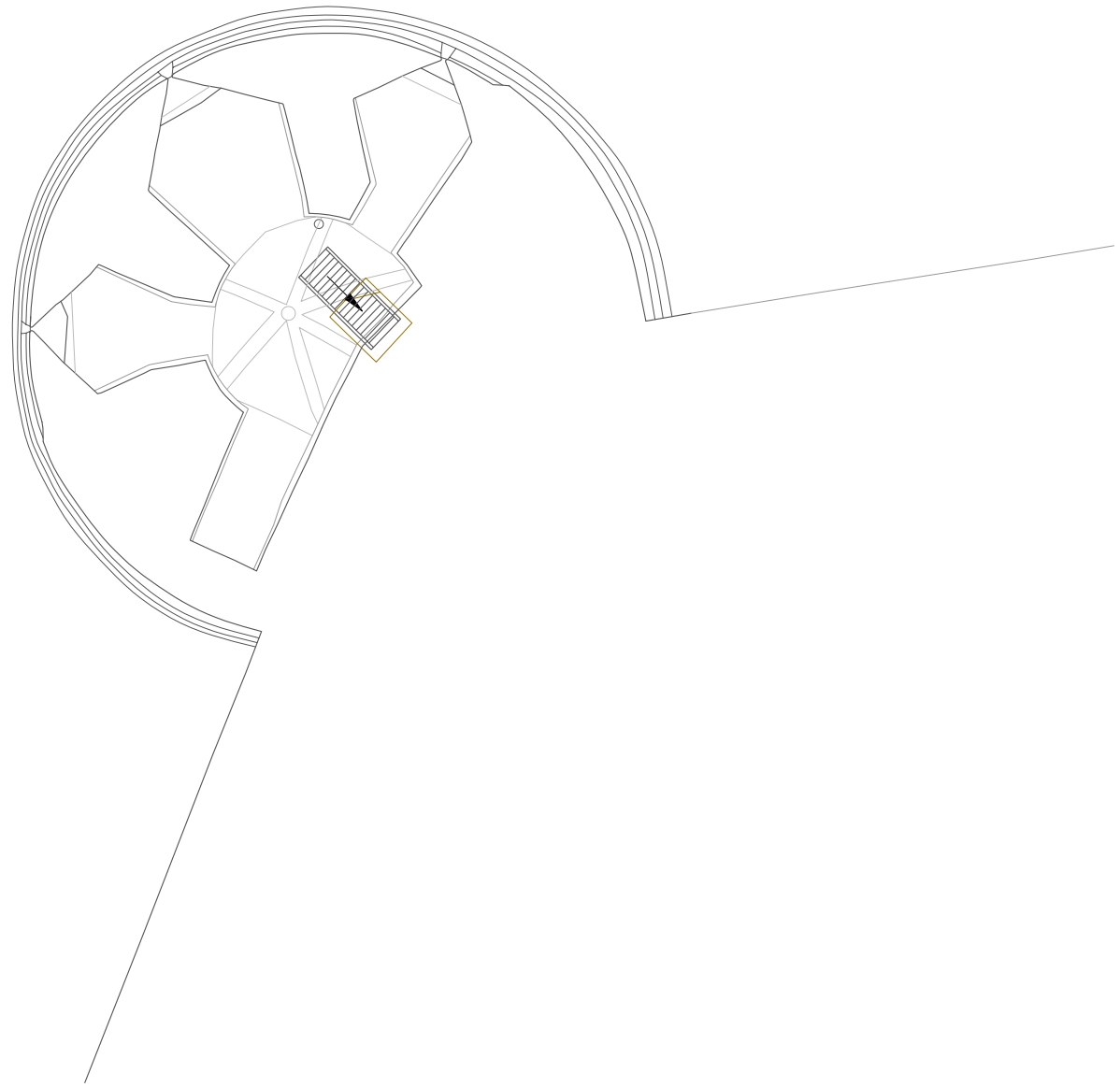


Figure 35

Scale 1:100

Cobb Hall, ground floor and basement plan

embrasures arranged off the central space and a passage in the western wall that must have led to the original stair.

Roof level
The roof is reached by a straight stair from ground-floor level which is entirely an insertion of early 19th-century date. The stair has been constructed from brick with stone risers. At roof level, access has been provided to the adjacent stretches of curtain wall which, with the parapet, is an entirely early 19th-century arrangement.

3.8.4 Watching brief

The roof of Cobb Hall underwent repair during restoration works. All of the resultant exposed fabric was of 19th-century date.

3.9 NORTH CURTAIN WALL

3.9.1 Documentary summary

Medieval
See section 3.1.1 for a description of medieval sources pertinent to the castle walls.

19th century
Like many parts of the castle, the north curtain wall received extensive attention from the 19th-century restorers. In 1840 Willson observed that:

> '.the battlements of part of the north side are the only antient ones that remain, a range of these was meanly rebuilt a few years back of very slight bad workmanship, between each the two embrasures was an opening like a scaffold hole cut through.'
> (Willson 786/G, 4).

The reconstruction appears to have taken place in 1809, Willson further notes that:

> '...this repair was imperfectly done, the battlements being made much lower than the old ones, and cut down into the substance of the main wall; nor were they coped at the top with anything but mortar spread over rough stones. The whole walls from the western gate to Cobb Hall were repaired, both inside and out, in 1839, when the northwest angle was rebuilt, and all the battlements were restored.' (Willson 786/G, 4)

Willson also provides details as to the extent of the medieval fabric and details of the battlements form:

1. length from west end to the remnants of ancient battlement	155' 0
2. length of the part of the battlements much broked	138' 0
3. length of that part of the battlements which was most perfect	126' 0
4. length of the modern battlements, up to Cobb Hall	119' 0

5. height of the old battlements on the north side (to the mound at that part of the wall)24'
6. height to the new battlements on the northwest quarter 22'

These [north] battlements had quoins of squared stones and the reste of their work was of hammer-shaped stones. They were so much perished by frost as to consist of shattered fragments, which were held together by the hardness of the mortar in which the stones are bedded. No fragments of the coping were found. These were the only remains of battlements that remained on any part of the castle walls. The others had been thrown down when the walls were repaired.' (Willson 786/G, 4).

Willson further noted that there was a vertical groove on the inward face of each battlement, with a hole at the base of each. This arrangement of fixtures would strongly suggest that the battlements were intended to have a timber *hourd* fixed to them. The medieval battlements are portrayed in a 1784 view by Grimm (Plate 25).

Plate 25 Lincoln Castle from the northwest by S.H.Grimm, dated 1784

The sallyport or postern gate, a small door through the north curtain wall located to the west of Cobb Hall, was unblocked in 1839 when Willson noted:

'Opened the postern, and walled it up again. It was blocked up before flush with the face of the wall. Hooks in one jamb for the door - pointed arch, rough inside' (Willson 786/G 80)

3.9.2 Exterior

As with the northern section of the east curtain wall the early 19th-century restorations and subsequent repairs in the 20th century have largely obliterated any medieval features in the facing masonry. The one certain medieval feature that remains is a small, blocked, postern gate provided with a two centre head. Unfortunately all of the dressed masonry forming the gate has been replaced and it is not clear whether this feature had been cut into the wall or formed part of its original design. During the current repair works it was evident that most of the face-work had been bedded in cement with only small areas of hard hydraulic lime work actually surviving; no areas of medieval bedding mortar survived.

A patch of herringbone masonry, visible towards the northwest corner, was the subject of repairs in 1988-9 and it was suggested that the herringbone was a blocking of a further gate or door opening, with the jambs still visible (Bunn, nd.). This does seem an unlikely location for a substantial gate, but might be the location for smaller secondary access onto the city wall to the north. Unfortunately no records of this discovery appear to have been made.

3.9.3 Interior

The interior face of the curtain wall has also been subject to considerable stone replacement, both in the 19th century and, more recently, in the 1980s. While some short courses of herringbone masonry are evident they now consist of entirely modern replacement masonry. Likewise an extensive pattern of putlog holes along the whole length of the curtain wall are now expressed in modern masonry. In view of the extensive stone replacement that has taken place the veracity of these features might be considered questionable. However, a set of survey photographs taken of a substantial section of the wall face by English Heritage in the early 1980s show these as medieval features that were largely copied in subsequent replacement stonework.

Putlog holes

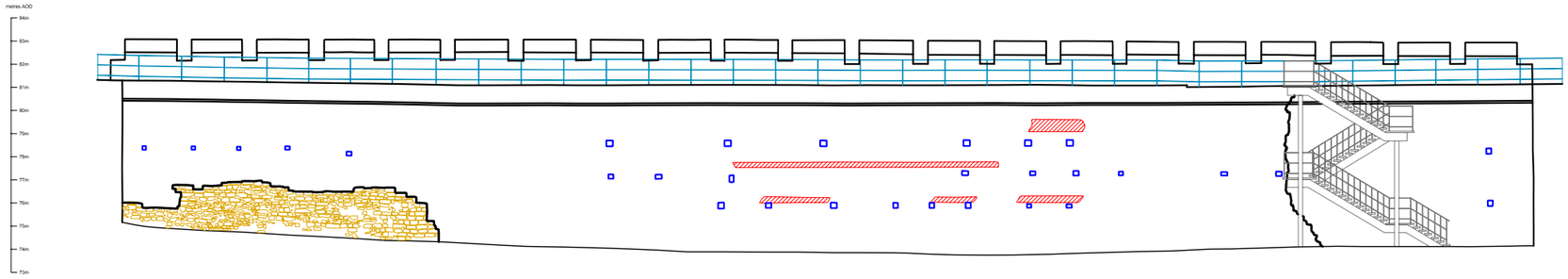
There are a sufficient number of medieval putlog holes surviving to understand the sequence of construction of the north curtain wall (Figure 36). The lowest row of putlog holes are set at a fairly uniform *c*.2m above the current ground level, the height of the holes reflecting the first scaffold lift and possibly the height of the first season's construction work. It is worth noting that the uniform height, in relation to the ground level, follows the topography of the rampart on which the wall is constructed, rising noticeably at the western end and more gradually towards the eastern (Cobb Hall) end. This would suggest that the rampart height had been established by the time the wall was constructed.

The second lift of putlog holes is set *c*.1.2m above the first, with the spacing between the second lift holes very closely mirroring those below. The height between the two lifts is insufficient to provide a working height and it is reasonable to assume that the lower timber platform was removed and reset at the second lift level. The third lift of putlog holes is also set *c*.1.2m above the second lift and it is also certain that the timber platform from the second lift was removed and reset when the work got to this stage. There are no further rows of putlog holes above the third lift which, in any case, would not have been required, the third lift being sufficient to provide a working height for the parapet walk of the curtain wall.

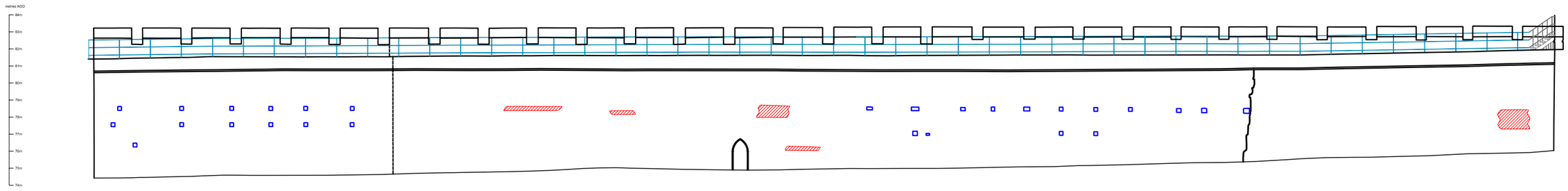
While there are several areas where the putlog hole pattern has been lost (particularly adjacent to Cobb Hall), the heights of the lifts and the spacing of the holes are consistent along the whole length of the wall. Assuming each lift represents a season's work (allowing sufficient time for the mortar to set in addition for the need to suspend work over the winter) the construction period is likely to be in the order of three to four years for the full height of the wall.

Herringbone masonry

Along the length of the north curtain wall there are several sections of surviving herringbone-laid masonry. Setting aside two larger patches at either end of the length of the wall, the surviving sections are in fairly uniform bands, the bands located just above the level of each row of putlog holes. While it is reasonable to suggest that this was an intentionally decorative feature, it is also possible that a consideration of the masons was to use stone that could not be readily dressed into blocks at the end of a season's work.



North curtain wall, west



North curtain wall, east

KEY

- CHANGE OF PLANE
- CUT
- LIMESTONE
- OUTLINE OF HERRINGBONE STONEWORK
- PUTLOG HOLE
- GROUND LEVEL

Internal elevations of the north curtain wall, east and west end

Scale 1:250

Figure 36

The western end of the north curtain wall has a much larger, roughly rectangular, patch of herringbone masonry which is also evident on the exterior of the curtain wall. From the comments made by the masons who worked on this part of the wall in the 1980s it is evident that this patch of herringbone masonry relates to the blocking of an opening. The section of curtain wall in question relates directly to the interface between the castle with the city wall and the westgate postern to the north. It is therefore highly likely that some further defensive feature would have been incorporated in the castle defences at this point. Whether the additional defensive feature consisted of a spur wall which headed north, from the curtain wall, down the castle rampart spanning the ditch and connecting with westgate postern, or perhaps a further tower, is a point of speculation.

A further patch of herringbone masonry adjacent to Cobb Hall also appears to be a blocking of a feature relating to Cobb Hall.

3.9.4 Watching brief

During repair works the modern wall-walk surface and some of its associated bedding material was removed. The depth of modern bedding material on much of the north curtain wall was such that the medieval core-work was only contacted where existing drains were replaced. However, at the western end, a greater depth of material was removed uncovering the top of the medieval core-work (Plate 26). In contrast to other stretches of the curtain wall circuit, the medieval core-work had been levelled and cut into by a significant degree by alterations undertaken in the late 20th century. The result was an up-stand of medieval fabric along the inner edge of the wall and, to a lesser degree, beneath the 19th-century parapet. The medieval core material observed was largely consistent with the composition of the wall-head core-work seen elsewhere on the curtain wall.

Plate 26 Medieval core-work exposed on north curtain wall

3.10 WEST CURTAIN WALL NORTH

3.10.1 Documentary summary

Medieval

See section 3.1.1 for a description of medieval sources pertinent to the castle walls.

19th century

Willson notes that the northwest corner has been rebuilt in 1816 when

> 'at which time the top of the mound on the outside was taken off, and reduced in height by three or four feet, in order to give advantage to the wall, and prevent the escape of prisoners.'

Willson also suggested that the '...high mount of the northwest angle had possibly a tower on it, though no foundations remain.' (Willson 786/G, 4). However, to date there has been no archaeological evidence to suggest the presence of a tower in this location. Further, a view by S. H. Grimm of the castle from the northwest, dated 1784, merely shows the curtain wall forming the angle as reflected in the 1816 rebuild of the corner.

3.10.2 Exterior

Several phases of development can be discerned in the exterior fabric of the curtain wall (Figure 37). The northern end of the wall has been totally refaced, probably part of the 1816 rebuilding of the northwest corner. From the refaced area, a series of replaced courses extend into earlier fabric forming strips through the earlier fabric. Excluding areas of patch repairs the remaining fabric falls into two main phases; the earliest phase represented by two sections each *c.*7m in length one section starting at the West Gate and, with a gap of *c.*4.5m, a further section to the north; a second phase represented by the fabric within the gap between the two phase one sections. The gap in the earliest fabric does not appear to extend down to the base of the wall, although vegetation in this area hampered detailed study of the lower part of the wall. The masonry used in this work is very distinctive consisting of a series of courses of small stones interspersed with the a number of wider courses of large stones. The masonry used in the second phase work is of much more mixed material suggesting an *ad hoc* gathering of material to either repair a breach in the wall or fill an opening.

The relationship between the curtain wall and the West Gate can be examined at their junction and it is evident that, in this location, the curtain wall post-dates the construction of the West Gate.

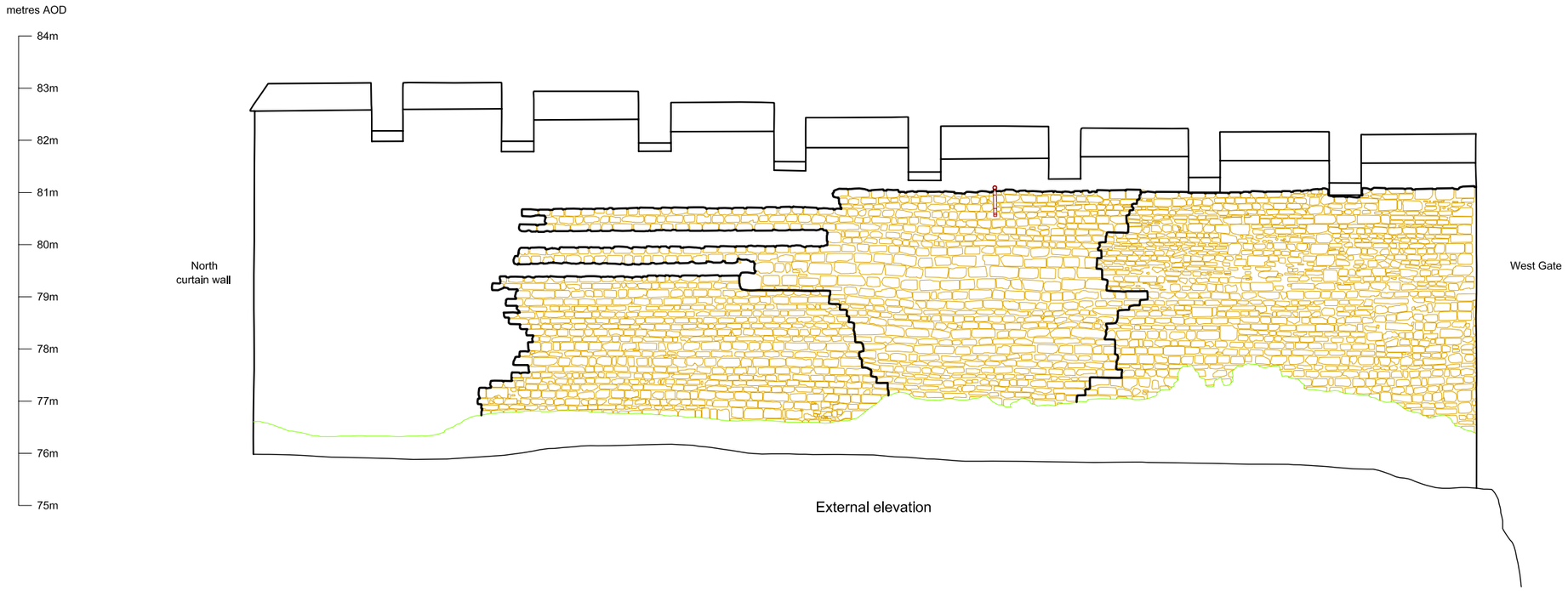
3.10.3 Interior

The north curtain wall between the West Gate and northwest corner of the castle underwent considerable repair in the 19th and late 20th century. However, the surviving areas of medieval masonry follow much the same pattern as the exterior with a secondary in-filled gap discernable between two areas of well executed medieval fabric (see Figure 37).

Unfortunately modern refacing has removed the relationship between the West Gate and curtain wall on the internal elevation.

3.10.4 Watching brief

During repair works the modern paving was removed from the parapet wall-walk subsequent, but the required levels did not reach medieval fabric. Nevertheless, judging by the external fabric, it seems reasonable to assume that a similar sequence of 19th and 20th century alteration to the wall head would have taken place as observed on the south and east curtain walls.



External and internal elevations of the west curtain wall, north

Scale 1:100

Figure 37

3.11 WEST GATE

3.11.1 Documentary summary

Medieval

The earliest possible reference to the gate concerns Bishop Bloet being granted a license by the king to make a gateway through the wall (*muro*) of his castle provided the wall be thereby not weakened; the license has been dated to the period 1101-1115 by Foster & Longley (1931, 20-21). The license has been interpreted in two ways; either referring to a gate being constructed in the current circuit of the curtain wall, as suggested by Michael Thompson (2004, 25) or as Vince and Stocker argued into any part of the Baile walls (1997, 223-33). Thompson argued that the West Gate was the subject of the license, although there are now known to have been three main gates and at least two postern gates within the circuit of the castle walls.

There are no certain references to the West Gate before the 13th century although the bailey of the castle was strengthened at a cost of £82 in 1192-93, the work undertaken by Gilbert Hurell and Miles the mason (PR 5 Richard 1, 37). It is possible that elements of the West Gate barbican formed part of the strengthening works.

In 1217-18 Nicholaa de la Haye received 40 marks for repairs to the castle and a further 60 marks for improvements (PR 2 Henry III, 94), while in the same year a further sum of 40 marks was to be paid by the Mayor and Provosts of Lincoln for repairs to the castle. In total Nicholaa de la Haye received the total sum of £130 for repairs in the period 1218 to 1220 (Brown *et al* 1963, 705). In 1224 the earl of Salisbury was to receive £374 15s. 0d. from the Exchequer for the money he had paid out by royal precept for the work on the castle and it is apparent from the Close Roll that this sum of money was a back payment for work in the period from 1216 to 1218. In summary, substantial works were underway at the castle in the period 1216 to 1220 which might have included alterations to the West Gate.

In 1233-34 the West Gate was close to collapse and was partly taken down and rebuilt at a cost of £54 6s. 4d. (Brown *et al* 1963, 705). Part of this work can be readily identified on the surviving structure such as the reinforcing inner arch. This is the first certain mention of the gate, and the last for nearly 100 years until the 1327 inquisition into the condition of the castle which states

> 'that a tower in the said castle called West Tower became ruinous in the time when Henry de Lacy, earl of Lincoln, was constable of the said castle, and when Walter de Hanvill of Lincoln was subconstable to the said Henry. The same Walter removed timber and lead from there, worth 60 s. They do not know whose fault this ruination was, but £100 are needed to repair it.' (translated from PRO E101/484/10).

The ruined tower in question could either be the west gate or the barbican tower attached to the north side of the barbican.

19th century

Willson provides a description of the earliest recorded excavations within the gate when:

> In 1825, the earth in front of the west gate was dug down to expose the floor of the gate, showing the floor and the foundation of the wall parallel to, and in front of the gate tower, nearly in the middle of the ditch. The walls terminated the two walls which formed the sides of the barbican or outward gate, in front of the main gate. The whole resembled the original form of the east gate of the Norman work. The ditch is filled up at present about 5 feet deep with earth and rubble from the banks. When the earth was dug down within this gate, about the time the County Hall was begun in 1823, parts of the wide walls of the passage leading (between the slopes of the mounds) to this gate were discovered.
>
> Width of outer gate 16'
> Height from cill to spring of the arch 11'
> Width between wings, or walls advancing forward - 20''
> (Willson 786/G, 89)

In 1838 Willson noted his extensive work on the West Gate in which he

> Repaired sallyport, and western gate, rebuilding great portion of the upper part the front. Opened great arch and ...the wall which stops it up within the arch, it having been flush with the line of the front before. Removed the modern roof and part built within side of the gate tower (Willson 786/G 80).

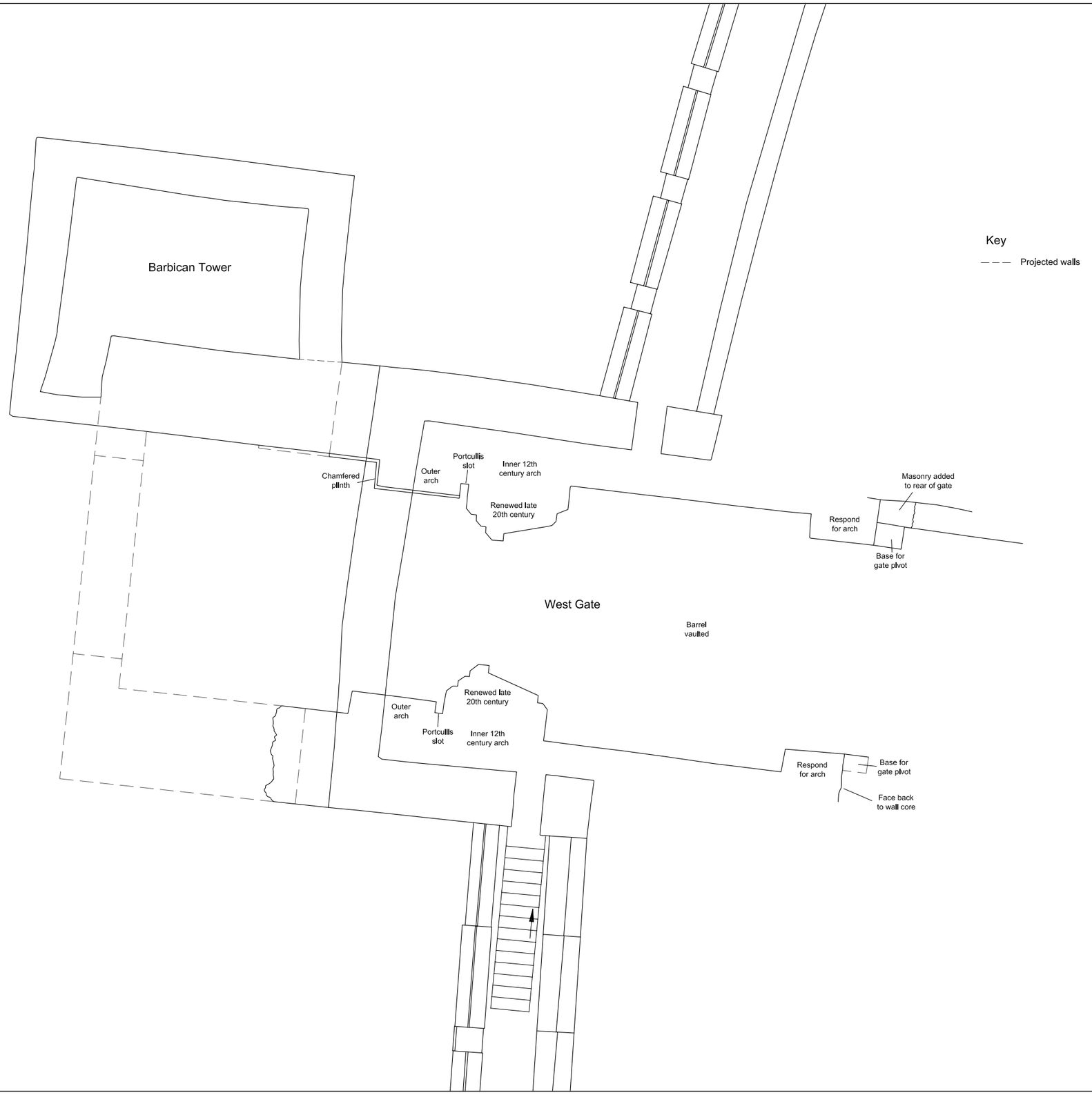
Modern excavations

The West Gate was the subject of archaeological investigation in 1982-3 and again in 1986-1992. The excavations await full publication, but Lisa Donel provided a summary of the results (Donel and Jones 2004). The work was undertaken as part of a plan to reopen the gate and to undertake repairs to the gate structure. Excavation within the gate passage removed *c*.3.0m of modern dumping, beneath which the Norman road surface was discovered. Beneath the road surface, the Roman wall was identified during excavation of a pit which had exposed its fabric (Donel and Jones 2004, 44). The full width of the medieval road surface was exposed to the east of the main gate structure, in addition to the buildings either side of the road. On the south side of the road, a masonry building was encountered, with a loop that overlooked the road, thought to be contemporary with the main gate. Two phases of passage walls were discovered to the east of the gate, which extended the gate passage by a further *c*.12.0m. In the Norman period the road dipped as it came through the east gate, as Lisa Donel suggests, probably reflecting the profile of the rampart.

3.11.2 Barbican tower

Exterior

The barbican tower is a rectangular structure on the north side of the approach to the west gate. Externally the structure measures *c*.7.6m west-east and *c*.6.7m south-north (Figure 38). The external faces of the east and north walls are largely buried within the castle rampart, while the south wall forms an extension to the West Gate barbican structure. Where the external masonry is exposed it



West Gate, ground floor plan | Scale 1:100 | Figure 38

consists mainly of small, roughly squared, dressed stones with slightly larger stones employed to form the quoins. The use of such small stones for facing is not really seen elsewhere in the medieval work on the castle (other than parts of the Observatory Tower) and the impression gained is that perhaps the stone had been robbed from a convenient local source, rather than having been purpose cut.

South elevation

Analysis of the external south elevation shows that the tower was added to the barbican wall with a clear, roughly vertical, cut-line running through the fabric (Figure 39). On the south elevation it can be seen that the bottom *c.*2.3m of the towers fabric forms a fairly homogenous campaign of construction, incorporating a single large putlog hole. At *c.*2.3m there appears to have been a hiatus in construction with a clear horizontal break line. Above the break line, the character of fabric is fairly similar to that below. Two putlog holes are visible within the masonry, one above the other, spaced vertically at *c.*1.2m; the same spacing has been employed between the large putlog hole in the lower part of the elevation and the lower of the two putlog holes above. The only other feature of note is a reused piece of moulded stone, part of a cusped window head, in the upper of the elevation; unfortunately the latter is not useful for dating purposes having been set in position in the course of 19th-century repairs. Despite the height of the elevation, with at least *c.*5.5m in a relatively good state of preservation, there is no evidence of any openings.

West elevation

The west elevation follows much the same pattern and character as the south elevation except that cutting back of the castle rampart has resulted in the exposure of the original wall footing and a subsequent, 19th-century, stone revetting wall (Figure 40). Within the original fabric very small stones have been employed as the main facing material while a row of five putlog holes remain, two of which have been blocked. As with the south elevation there is no evidence to suggest an opening into the interior.

North and east elevations

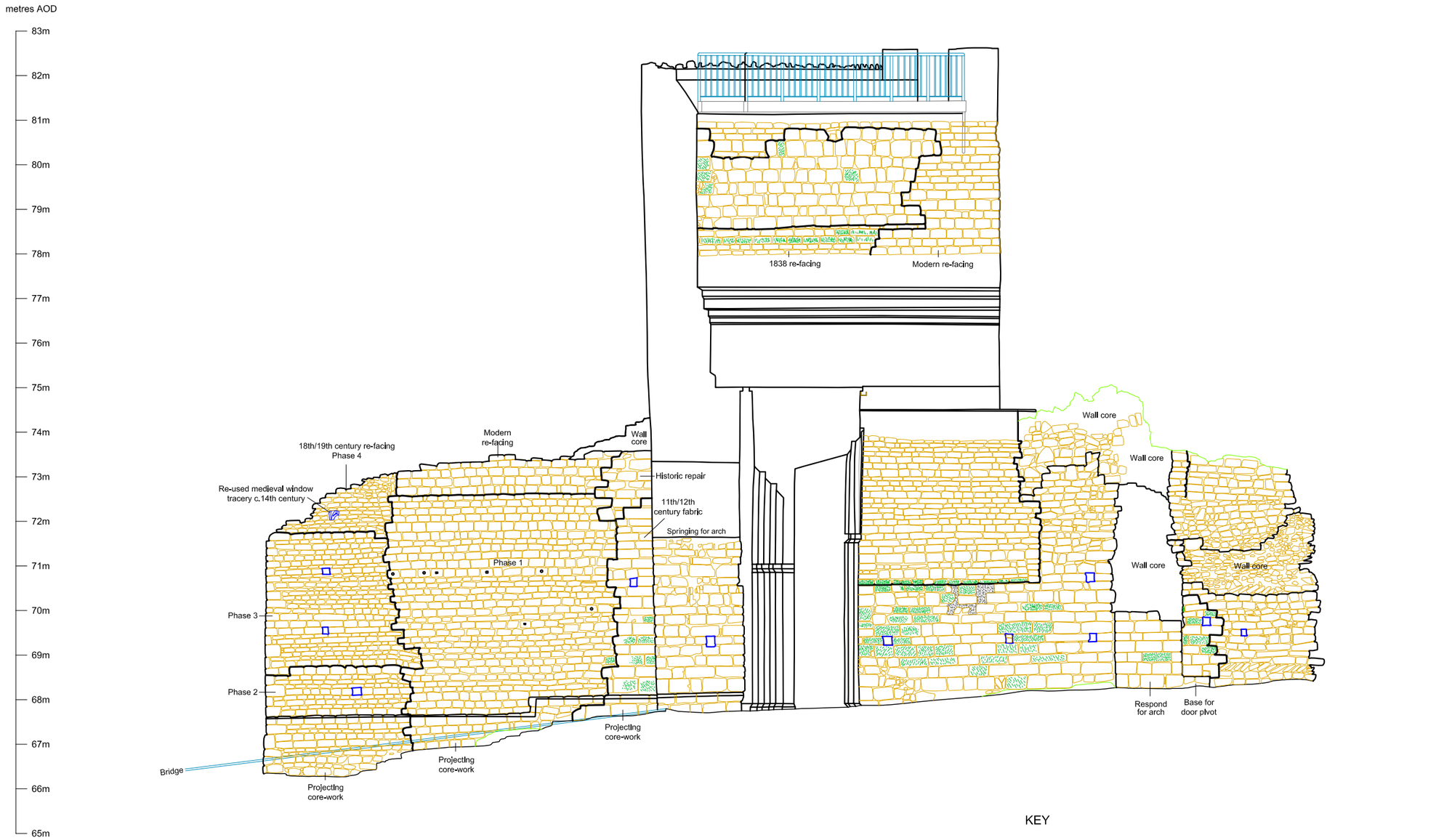
Only a low section of the north elevation is exposed, the remainder either buried within the rampart, or lost. Of what remains exposed it is evident that the masonry is similar in character to the south and west elevations. The exterior of the east elevation is largely covered by the castle rampart.

Internal west elevation

The internal west elevation is a relatively intact, unmodified, section of fabric (see Figure 40). It is faced in similar stonework to the exterior of the wall with rows of putlog holes set at *c.*1.2m interval heights. A single wider course of stones probably represents close to original internal ground floor level, confirmed by the fact that there is a pronounced offset in the wall just below this level.

Internal north elevation

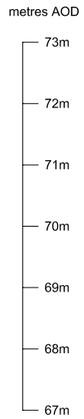
In height, only a small section of the internal north elevation is exposed (see Figure 40). The lower half of the elevation consists of exposed rubble foundation, increasing in depth to the west, suggesting that the internal floor level within the structure has been lowered or dug out. Above the rubble

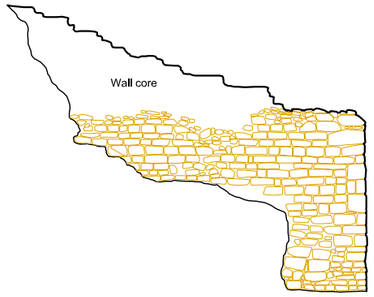


West Gate, south-facing sectional elevation

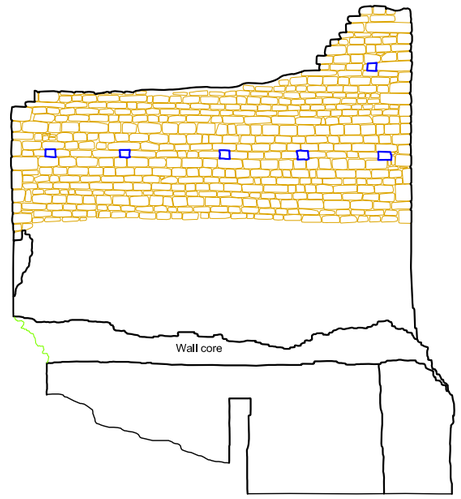
Scale 1:100

Figure 39

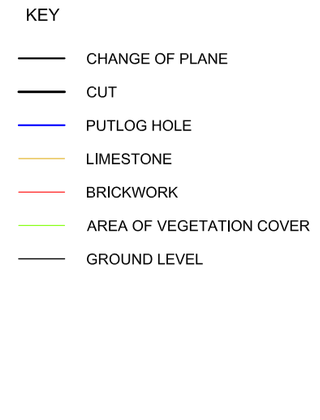


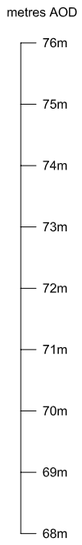


North external elevation

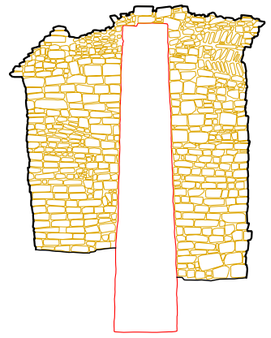


West external elevation

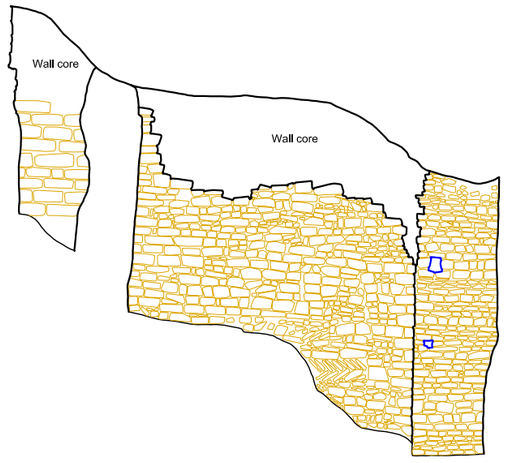




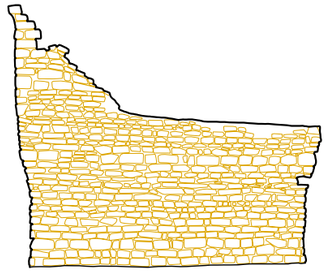
North internal elevation



East internal elevation



South internal elevation



West internal elevation

External and internal elevations of the barbican tower

Scale 1:100

Figure 40

foundation is a section of herringbone masonry, consisting of two courses, probably also representing footing level and not intended to be exposed.

Internal east elevation

The internal east elevation has a centrally positioned, raking brick buttress of 19th- or early 20th-century date (see Figure 40). The buttress was evidently installed to prevent the wall collapsing. With all the mass of the castle rampart to the east of it, the wall has clearly suffered partial failure on numerous occasions and has evidently had several phases of repair. The main area of surviving original fabric is in the bottom half of the elevation, executed in small regular blocks of stone; in contrast to the exterior facing the stone blocks employed are generally of slightly greater size. The upper half of the elevation appears to have been largely refaced.

Internal south elevation

The earliest phase of masonry on the internal south elevation is at its western end where it retains evidence for the original north face of the Norman buttress of the West Gate (see Figure 40). Nine courses of large dressed stones remain, of identical character to those forming the south side of the buttress, forming a strip of masonry *c*.1.2m wide. The upper part of the facing has been lost and taken back to wall-core, while the western edge of the facing, where the expected return for the buttress should be, is masked by the east wall of the barbican tower.

To the west of the east wall of the tower, the south elevation continues with face-work of smaller, but still regularly coursed stones for *c*.4.5m when it returns to the south, although with large areas of repair and patching evident. This area of facing would have formed the original external face of the barbican, a second phase added to the West Gate during the 12th century. Small areas of herringbone masonry evident towards the bottom of the elevation appear to represent exposed wall footing. The final strip of masonry, employing a mixture of thin and wider courses of stonework, represents a final main phase of development when the barbican tower was added to the barbican probably in the period 1216-20. Two putlog holes are evident in the fabric set at height intervals of *c*.1.3m, but there are no other features of note.

3.11.3 Barbican

To either side of the approach to the gate are flanking walls forming a barbican. That to the south remains as a stub of walling which, judging from its exposed rubble core, must have extended further to the west. That to the north extends *c*.7.0m from the face of the gatehouse and exhibits several phases of construction (see Figure 39). Originally the wall appears to have been little more than a pilaster buttress against the west face of the gatehouse. A chamfered course within the gate passage can be seen to run *c.*0.5m before returning to the north, the remainder buried within the flanking wall. The rough junction associated with this can be seen immediately above the chamfer. This would indicate that the north flanking wall must be an addition to the west face of the gatehouse.

The second phase of the wall, forming the main central section of the north flanking wall, is of regularly coursed masonry employing well squared blocks of stone. Surprisingly, there is little

evidence for putlog holes in this section of the masonry although, as the wall effectively forms a revetment wall to the castle rampart and is thus supported to the rear, a full scaffold might not have been required. A horizontal offset at the base of the wall, now above the level of the current sloping bridge deck, probably reflects the original intended floor level within the barbican.

The second phase masonry terminates in an irregular vertical joint with the third phase masonry (part of the barbican tower) to the west. It is evident that, rather than the third phase masonry being built against the second phase, a certain amount of fabric of the second phase material was removed in order to tie the later fabric into it. Comparison between the surviving extent of the facing masonry of the barbican at its western end, on both external and internal elevations, would suggest that a *c*.1.5m strip of facing has been removed on the internal (south) elevation. This strip might represent the covering over of a wall scar for a returning wall which formed a respond for an outer barbican gate arch. This arrangement has been suggested in several reconstruction drawings of the West Gate including that in the 1984 guide book (Elliott and Stocker 1984, 25).

3.11.4 West gate exterior

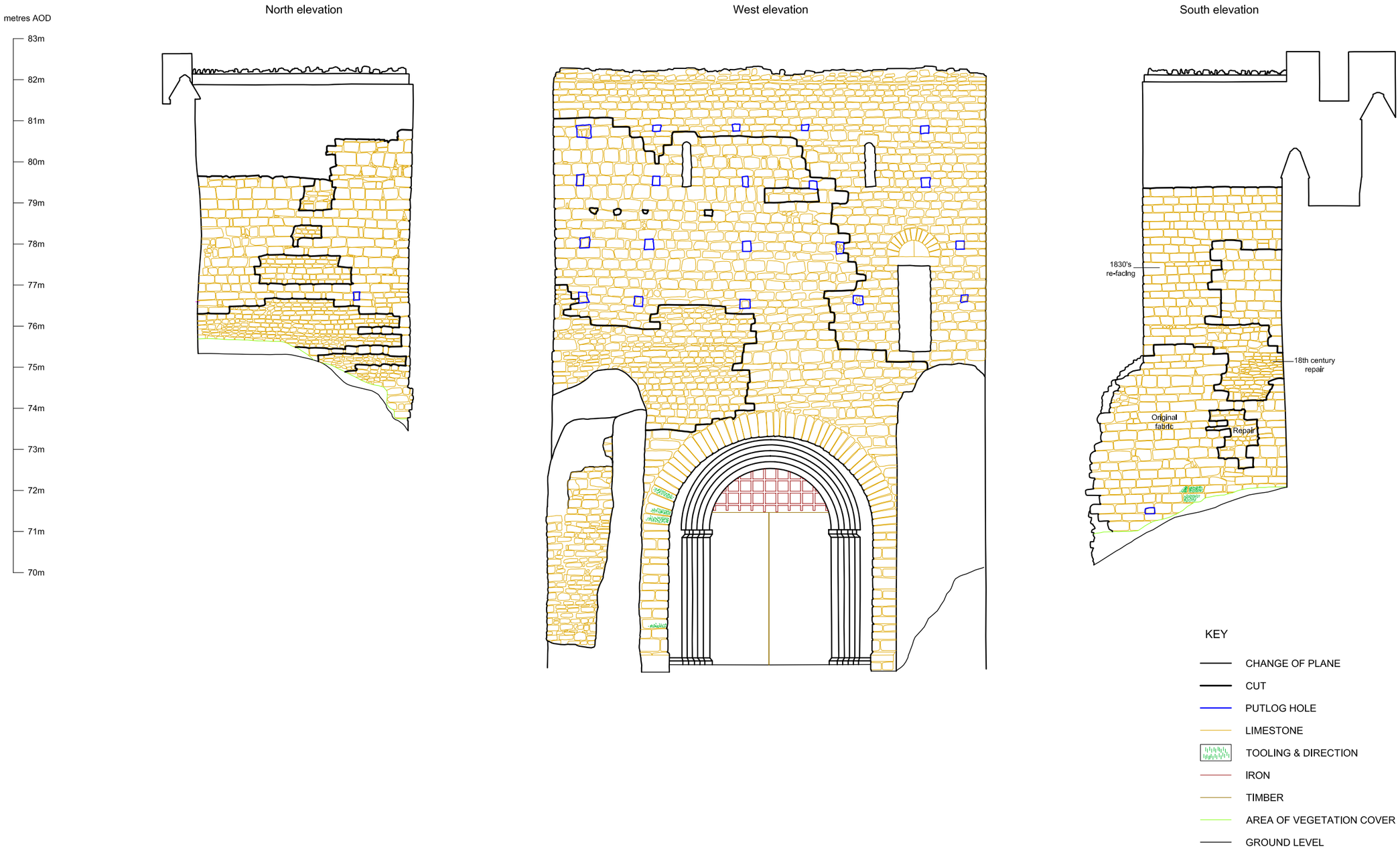
West elevation

Externally the gatehouse is now approached by a modern bridge which spans the site of the castle ditch. The west elevation of the gate has two small loop windows set high at first-floor level and a doorway with a round-headed relieving arch beneath them (Figure 41). The main gate arch is round headed and formed of a single row of voussoir stones. To the north of the approach is a substantial flanking wall which incorporates a rectangular structure at its western end, presumed to be a tower. There are remains of a further flanking wall to the south. Both flanking walls and tower are thought to form a barbican defending the approach to the gate; a later enhancement to the defences.

Examination of the west elevation reveals three main phases of repair/development. The earliest surviving facework consists of the gate arch, a section of masonry through the centre of the elevation and a substantial portion of the northern half of the elevation. The earliest fabric is of regularly coursed large well squared blocks with, where they survive, short oblique chisel marks; no masons' marks were observed. A regular pattern of putlog holes can be discerned set at *c*.1.5m lifts. The lift intervals contrast with those observed on the early phases of the curtain walls which start with a *c*.2m lift, with subsequent lifts of *c*.1m. In view of the contrasting masonry and difference in putlog heights it is clear that the curtain walls and West Gate were executed as different projects.

The second phase is a repair located above the gate arch on the north side, a roughly rectangular area of smaller stones. A view by S. H. Grimm of the castle from the northwest, thought to date to 1784, shows a large aperture on the gatehouse in this position (see Plate 25), and the patching is likely to date to between 1785 and 1838, the latter year being when Willson undertook a major restoration of the gatehouse.

The final phase is represented by the extensive refacing/rebuilding that is evident along the north side of the elevation. Given that the extent of these repairs can be traced internally it is likely that this was



West Gate, north, west and south elevations

Scale 1:100

Figure 41

all part of Willson's rebuilding of the upper part of the gatehouse in 1838. A close examination of the fabric forming the final phase work revealed characteristic 19th-century tooling and the use of hydraulic lime as the bonding agent.

Judging from a view by S. H. Grimm, and others, there appears to have been joist holes set at sill level to the first floor doorway, which would have seated timbers to support a platform or gallery across the front of the elevation of the gatehouse (Plate 27). Repairs have obscured these features and it is not now clear whether they were cut into the fabric of the building or were primary features.

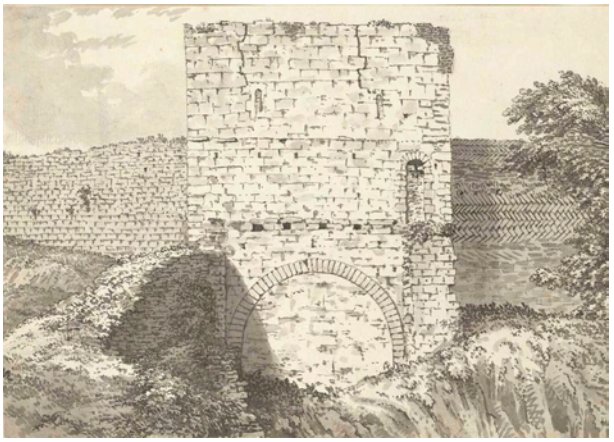


Plate 27 Lincoln Castle West Gate by S.H.Grimm

South elevation

The surviving Norman work on the south elevation is mainly concentrated towards the bottom half of the elevation with a further substantial section extending higher adjacent to the west curtain wall (see Figure 41). Despite some patching in smaller stones the general character of the Norman masonry is identical to that on the west elevation with some small areas of oblique short chisel tooling remaining on the lower stones. A putlog hole less than *c*.0.4m above the current rampart level indicates the rampart bank has been heaped against the masonry of the gate after the gatehouse's construction. It is notable that the Norman masonry courses through into the stub of the southern flanking wall, or buttress, indicating a contemporary date and thus part of the original design.

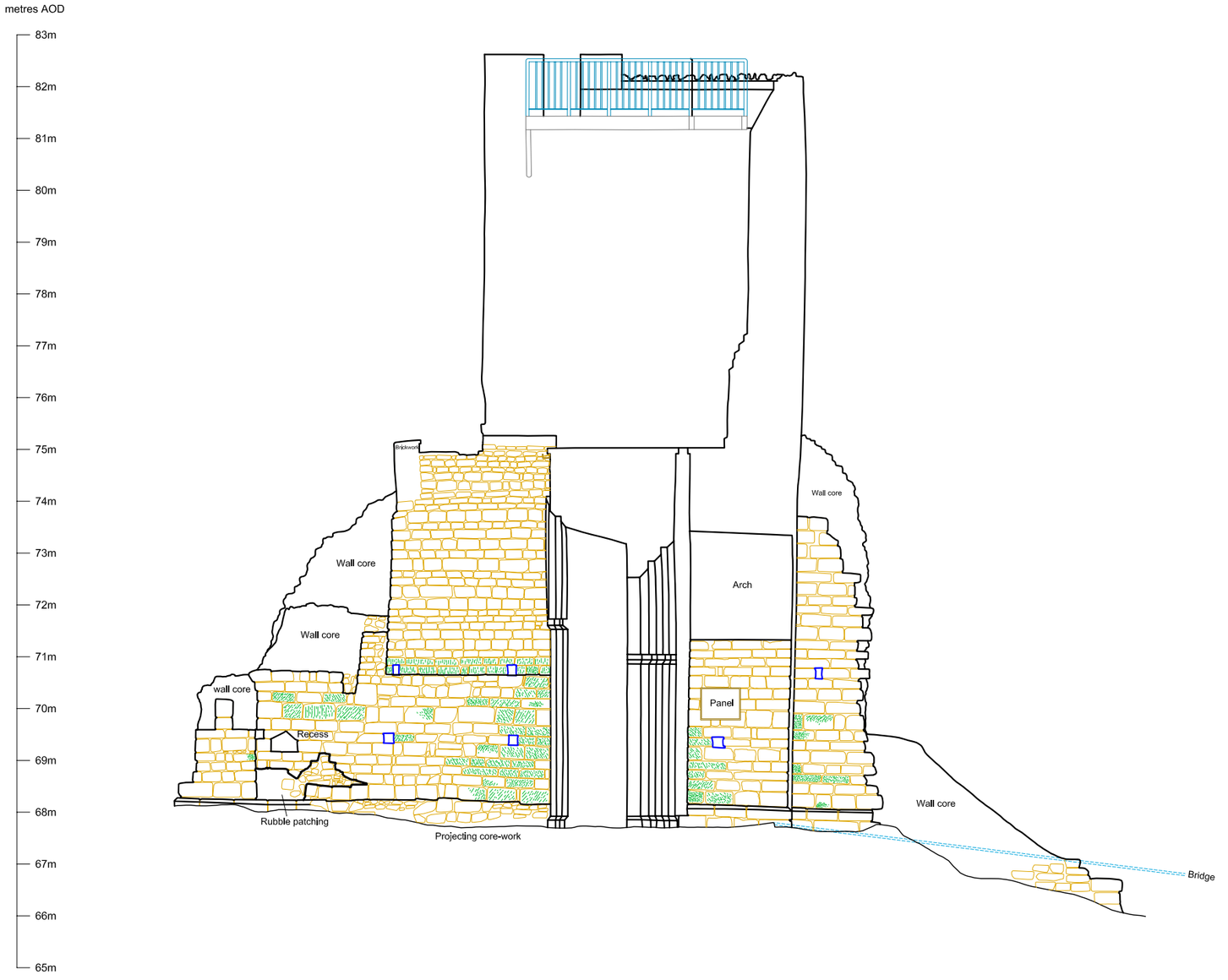
North elevation

The north elevation retains a significant amount of Norman facing masonry, although much patched with repairs executed using small stones similar to the work on the west elevation of the period 1785-1838 (see Figure 41). The relationship between the facework of the west curtain wall and the north elevation of the gatehouse would suggest that the curtain wall postdates the construction of the gatehouse. The Norman facing stones of the gatehouse can be seen to pass beneath the facing stones of the west curtain wall.

The upper part of the elevation has undergone reconstruction probably part of Willson's 1838 works to the gatehouse. Other than a surviving putlog hole in the Norman work there are no other features of note.

3.11.5 West Gate interior

The gate passage retains its Norman outer arch which has a chamfered course in its lower part - a similar arrangement is seen on the east gate (see Figure 39 and Figure 42). Also, as seen on the east gate, there appears to have been a further gate arch, reformed in the early 13th century with chamfered jambs, but retaining the Norman round-headed form. Further work to this arch in recent



West Gate, north-facing sectional elevation

Scale 1:100

Figure 42

years has removed virtually all original masonry. Between the two gate arches is provision for a portcullis in the form of slot. To the east of the two gate arches is the main gatehouse passage. It has often been suggested that the passage was vaulted although there is actually little evidence to suggest this was the case. However, there does appear to have been a further inner gate arch terminating the passage *c*.7.0m from the east face of the surviving west wall. The first floor of the gatehouse was largely of timber and supported on an offset built into the walls.

The internal upper walls have been the subject of considerable refacing which has only left relatively small areas of the medieval fabric exposed.

Upper north elevation
A substantial area of Norman facing work remains on the western side of the elevation, in characteristic large blocks of masonry with traces of oblique chisel tooling (see Figure 39). There two in-filled rectangular features towards the top of this fabric which might relate to the original roof structure. The eastern corner was completely refaced in the 19th century covering any evidence in this area, while below the surviving area of Norman work the elevation has also been refaced with small stones.

Upper east elevation
An area of Norman masonry survives on the northern half of the elevation, which includes one of two arched window embrasures and two putlog holes (Figure 43). The window embrasure retains traces of a chamfer on the openings arris. To the south the elevation has been completely refaced/rebuilt by Willson including the second window opening. The refacing has been sufficiently extensive that the first floor door opening visible on the west elevation is now completely hidden.

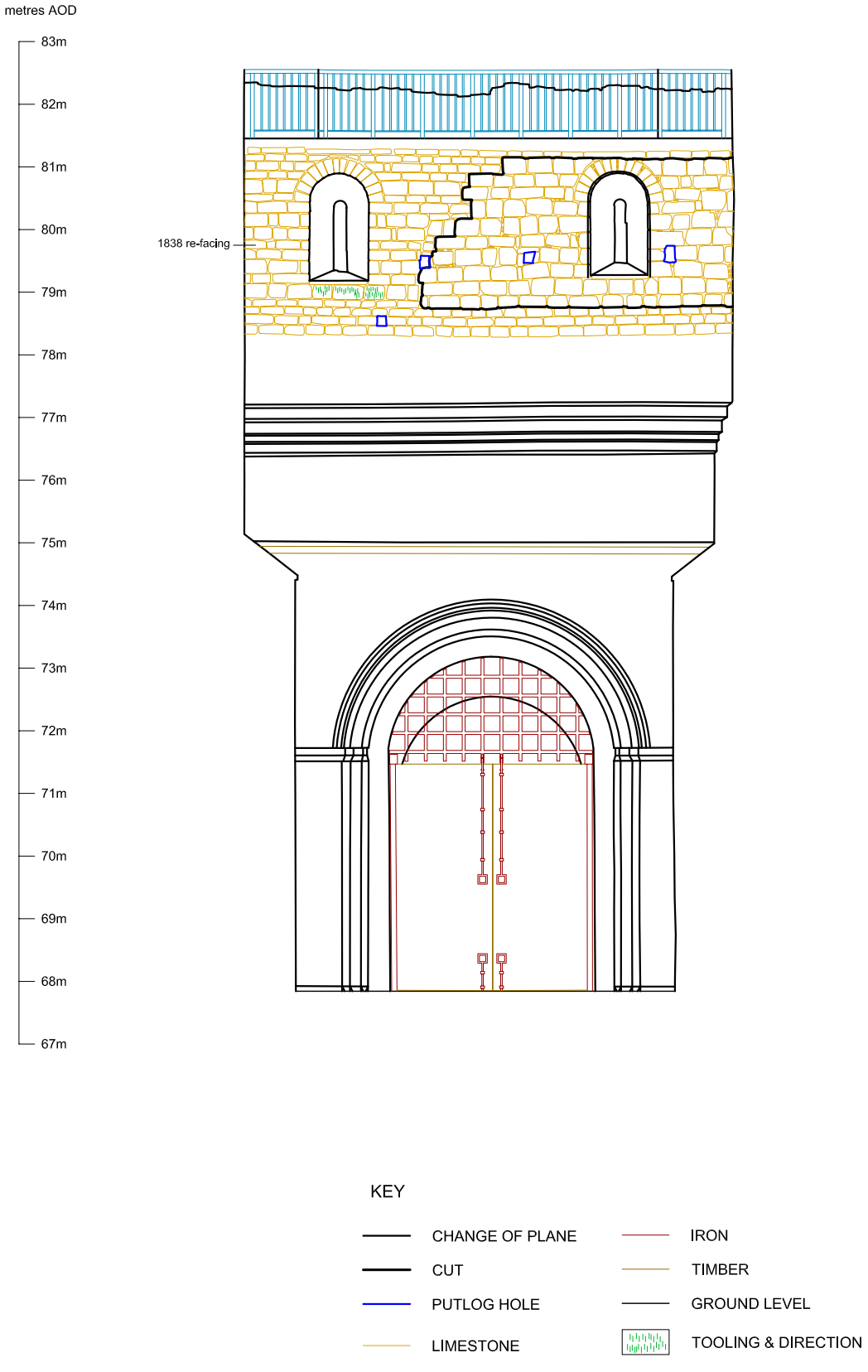
Upper south elevation
The upper south elevation now consists of face work entirely dating to Willson's repair works in 1838 and there are no features of note.

3.12 WEST CURTAIN WALL SOUTH

3.12.1 Documentary summary

Medieval
See section 3.1.1 for a description of medieval sources pertinent to the castle walls.

19th century
Willson made a fleeting reference to the west curtain wall and the works undertaken in 1838 in which he 'repaired West wall and completed battlements from S end to west gate' (Willson 786/G 80).



West Gate, internal east elevation | Scale 1:100 | Figure 43

3.12.2 Exterior

Only a fairly small area of the exterior of the west curtain wall south retains medieval face-work which has not been the subject of extensive repair and replacement. The main area of interest is adjacent to the West Gate where a small area of original herringbone work survives (Figure 44). The slightly irregular form of the herringbone compares with that which is visible on the interior of the wall. Fortunately, the relationship between the West Gate fabric and the curtain wall is relatively clear and indicates that the gatehouse was constructed before the curtain wall.

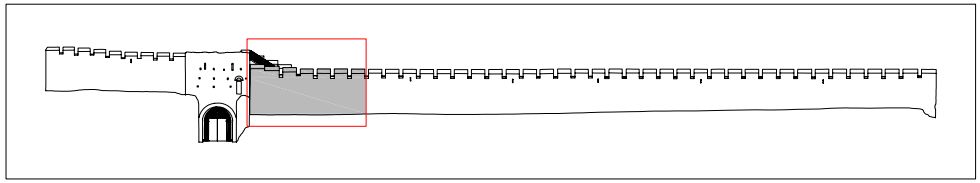
The remaining more extensive area of herringbone work has unfortunately been subject to modern repair and its medieval characteristics are now uncertain.

3.12.3 Interior

Like the exterior, the interior of the west curtain wall south has also undergone several cycles of refacing and repair, while several areas have totally lost their face-work (Figure 45). The southern half is now largely devoid of any original detail, but the northern half, up to the West Gate has an interesting pattern of features. The pattern of putlog holes suggests the wall was constructed in four lifts, each of the upper lifts amounting to *c.*1m in height. The bottom lift is now less than *c.*0.5m off the current ground surface indicating that the bottom of the wall has been buried since its original construction. If, as with the north curtain wall, the bottom lift was double height at *c.*2m, this would indicate a significant ground build up particularly towards the West Gate end at *c.*3.3m. In contrast the southern end of the wall is exposed close to its original full height. The reason for this build up in ground level appears to have been to level over a range of masonry buildings that were located against the curtain wall to the south of the West Gate. Elements of the buildings were excavated between 1986 and 1989, while the northern gable wall of the range remains exposed.

The northern end of the wall, adjacent to the West Gate, retains a large area of medieval masonry with a considerable area of herringbone masonry. Surprisingly, there are evidently three phases of herringbone masonry. The earliest herringbone, more correctly described as pitched, is in the lower part of the elevation and contemporary with much of the horizontally laid stonework evident in the lowest *c.*1.6m of the wall. The herringbone, or pitched stonework, is not of the highest quality and has not been laid in a regular alternating pattern. This section of early fabric is terminated to the south by a trapped corner, the quoin stones forming a well-defined vertical feature. To the south of the corner there is a further area of fabric incorporating herringbone laid in alternating pitched courses but still not of the highest quality and probably representing an early second phase to the fabric to the north. The third phase is represented by a further area of herringbone of much higher quality work, evidently added as both a repair and heightening of the original wall.

In summary it would appear that the earliest phase of herringbone masonry related to the construction of a building, aligned north-south, which might have predated the construction of the west curtain wall. The second phase work appears to have been the construction of the curtain wall to the south of the original building, while the third phase was the repair and heightening of the curtain wall.



KEY

- CHANGE OF PLANE
- LIMESTONE
- VEGETATION
- HERRINGBONE STONEWORK
- GROUND LEVEL

metres AOD

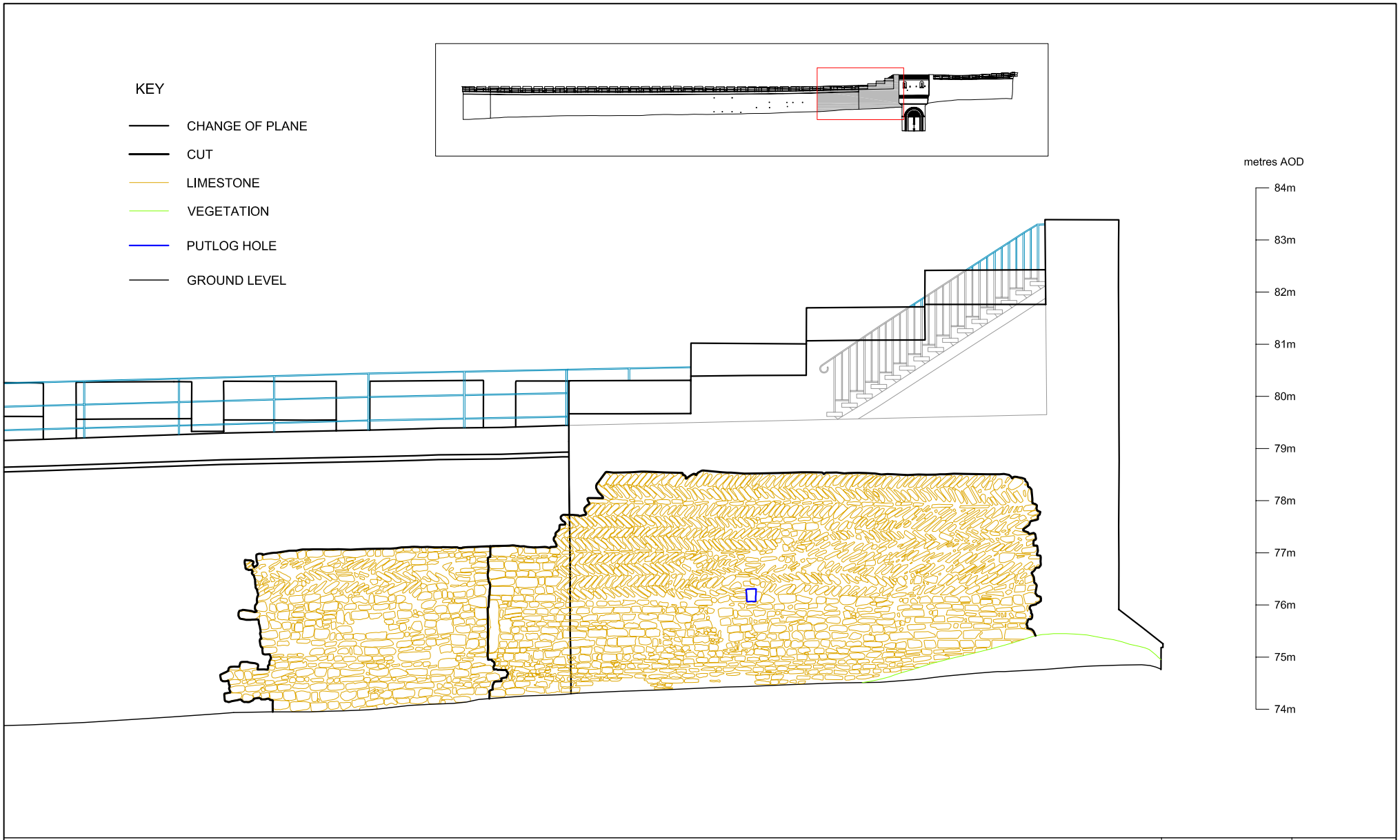
83m
82m
81m
80m
79m
78m
77m
76m
75m
74m
73m
72m

Area of reconstructed herringbone stonework

External elevation of the west curtain wall, south, north end

Scale 1:100

Figure 44



Internal elevation of the west curtain wall, south, north end

Scale 1:100

Figure 45

3.12.4 Watching brief

As with the other sections of the curtain wall the modern wall-walk covering was removed in addition to some of the modern bedding material associated with it. The depth of material removed was relatively shallow although, from observations made on the other sections of the curtain wall, should have been of sufficient depth to expose medieval core-work. However, in contrast to the other sections of the curtain wall, no identifiable medieval fabric was encountered. All of the fabric seen was of either of 19th-century or modern date. This observation would tend to confirm the suggestion that the curtain wall has actually been heightened slightly along the whole length.

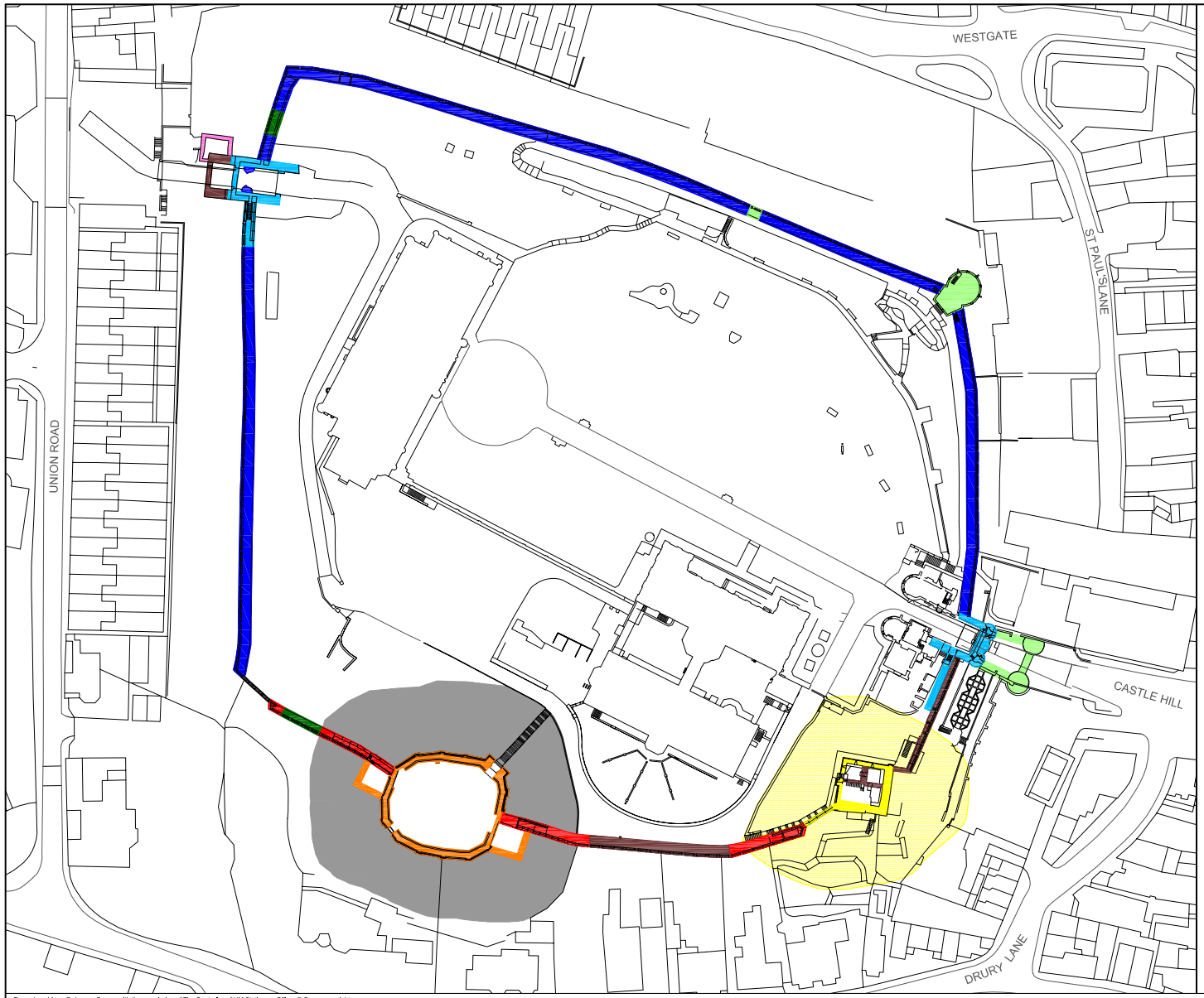
4.0 DISCUSSION

4.1 PHASING AND FEATURES

4.1.1 Constraints

The current archaeological work on the fabric of the castle has provided a comprehensive understanding of the relative chronology of its development, alteration and subsequent repair. However, the dating of the various phases identified is inevitably highly dependant on the sparse documentary references that are available and likely architectural parallels. Inevitably, where the fabric of the castle has been the subject of considerable repair and alteration in the past 200 years, phasing and dating of the earlier phases of the fabric is more tentative.

The development of the medieval castle fabric can be described in nine phases defined by the sequence of construction visible archaeologically and by the accompanying documentary record (Table 1; Figure 46). The nine phases aid the presentation of the complexities of the archaeological evidence, but in overview however the chronology can be viewed quite differently. The first castle of 1068 witnessed the start of a short period of intense activity and development which probably belongs to a timeframe of as little as seven decades of building. It is argued here that the East and West Gates originate in the closing decades of the 11th century, probably the 1080s. They were followed perhaps within a season or two by significant ranges of buildings to the south of the gate. Having initially formed the castle perimeter themselves they were rapidly subsumed into the stone enceinte which survives today which had probably been completed by 1105. The Lucy Tower was built *c.*1129-38 followed fast by the Observatory Tower *c.*1138-54 initially a tower converted soon after into a custom-built gaol. The south curtain wall was the longest to settle taking its current position by the late 12th century and its own evolutionary story is particularly fascinating incorporating a vanished south gate, south postern gate and lost chamber blocks to either side of the Lucy Tower. Beyond this rapid period of the early stone castle a distinct phase of refortification can be assigned to the addition of Cobb Hall and the East Gate barbican. Once the castle had reached this form, little by way of significant additions were made to the medieval defences.



Key

- Phase 1 - c.1068 - c.1080
- Phase 2a - c.1080 - c.1105
- Phase 2b - c.1080 - c.1105
- Phase 3 - c.1105 - c.1115
- Phase 4 - c.1129 - c.1138
- Phase 5 - c.1138 - c.1154
- Phase 6 - c.1154 - c.1199
- Phase 7 - c.1199 - c.1223
- Phase 8 - c.1224 - c.1272
- Phase 9 - c.1272 - c.1642
- Uncertain / modern

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Phased plan of Lincoln Castle walls and towers

Scale 1:1500

Figure 46

Table 1 Summary of phasing

Phase	Date	Summary description
1	*c.*1068 to *c.*1080	Motte and timber tower; timber bailey defences; reuse of Roman defences
2	*c.*1080 to *c.*1105	East and West Gate and associated ranges, ramparts and stone curtain wall
3	*c.*1105 to *c.*1115	New south curtain wall and gate
4	*c.*1129 to *c.*1138	Lucy Tower and chamber blocks
5	*c.*1138 to *c.*1154	Observatory Tower mound and tower
6	*c.*1154 to *c.*1199	Observatory Tower developed as gaol, east curtain wall added to east range, construction of West Gate barbican
7	*c.*1199 to *c.*1223	Repair to Observatory Tower and east range, probable construction of West Gate barbican tower, repairs to curtain walls
8	*c.*1223 to *c.*1272	Refurbishing East and West Gate, East Gate barbican and Cobb Hall constructed
9	*c.*1272 to *c.*1642	General repairs to existing walls, towers and gates

4.1.2 Phase 1 - *c.*1068 to *c.*1080

Lucy Tower motte

It is generally assumed that the construction of the Lucy Tower motte represents one of the earliest components of the castle that remains visible. It is also assumed that a largely timber tower was constructed upon the motte. The excavated evidence from other castle mottes, particularly from sites where there has been longevity of use, consistently indicates that mottes were subject to considerable alteration, particularly where timber structures were replaced with masonry. For example, the motte of York Castle, now crowned by the mid-13th-century masonry Clifford's Tower, has been shown to have a sequence of heightening and enlargement to accommodate successive towers on the mound (Benson and Platnauer 1903); the final masonry tower is supported upon a substantial clay capping with simple raft foundation. Assuming that the Lucy Tower motte was established in *c.*1068, it is quite likely that its current height and circumference is rather larger as a result of the construction of the current masonry shell keep.

Inner bailey defences

It is likely that the approximate line of the current bailey of the castle roughly follows that established in *c.*1068. At this early date it is probably more accurate to describe the current area enclosed as the inner bailey with perhaps an outer bailey encompassing the full extent of the Roman Upper City or Old Bail; a slight modification of David Stocker's view (Elliott and Stocker 1984; Vince and Stocker 1997; Stocker 2004).

The existing Roman defences appear to have been utilised along the west side of the castle, perhaps including the Roman west gate. Likewise the existing Roman defensive line along the south side of the castle was also probably utilised. The north and east inner bailey defences were probably established as slighter earthworks with timber defences.

4.1.3 Phase 2 - *c.*1080 to *c.*1105

Early gates and walls

This second phase marks the timber defences being replaced sequentially with masonry structures. The East and West Gates appear to have been constructed early in the sequence (assigned Phase 2a on Figure 46), with additional stone buildings to the south of both gates established either contemporary with or shortly thereafter. The constructional relationships with the adjacent stretches of curtain wall, with both gates and buildings indicate that the main curtain walls are later, although not necessarily by any significant length of time (the former are assigned Phase 2b on Figure 46).

Following the construction of gates and associated buildings earthworks were formed over Roman wall/defences along the west side and a masonry curtain wall constructed using the Roman wall as a foundation. The northern rampart was also heightened to incorporate a timber foundation with a masonry wall constructed over; the same technique appears to have been employed for the north section of the east curtain wall. Judging by the number of scaffold lifts involved in the north and west curtain walls the work appears to have been completed within a few years.

Early castle buildings

Shortly after the construction of the East and West Gates extensive ranges of masonry buildings were built adjacent. The east range, abutting the south side of the East Gate appears to have extended beneath the Observatory Tower and terminated on the line of the current south curtain wall. It is possible that an associated range of buildings, consisting of a timber hall on stone footings and constructed on a parallel alignment to the west (encountered in the Eastern Courtyard excavations) might have been built at this time (FAS forthcoming).

The building range to the south of the West Gate was also established, but there has been little archaeological excavation of its interior. Nevertheless, the west wall of the building range remains fossilized in the west curtain wall and it is evident that herringbone masonry was employed extensively in its construction.

Discussion of dating

There has been some previous discussion regarding the original construction date of the East and West Gates with Marshall favouring *c.*1100 or earlier (Marshall 2004, 58-59) and Vince and Stocker suggesting a *c.*1125 date (Vince and Stocker 1997, 223-33). It is notoriously difficult to date early castle structures on the basis of architectural style. The Lincoln Castle gatehouses could be as early as that at Exeter Castle, thought to date shortly after the taking of the city by the Normans in 1067, from the 1080s with examples such as Richmond Castle (in terms of its architectural detailing a very close parallel) and numerous later examples. It is probably more useful to note that the masonry employed in the Lincoln Castle gatehouses (large, well-squared blocks with oblique claw tooling), is very similar to that which can be seen in the remaining Remigius work to the West Front of Lincoln Cathedral, dated to Remigius' appointment as Bishop of Lincoln in 1072 until his death in 1093.

There is little doubt that the upgrading of the Lincoln Castle defences in masonry would have been an ambitious undertaking and required a significant investment. There are several historical contexts in which the upgrading of the castle defences might have been an imperative. Other than the immediate Conquest period, when numerous castles were established, the constant threat of invasion of England by Cnut of Demark in the period 1081 to 1087, led to William I establishing further castles along the eastern seaboard of England (such as Colchester started in 1083) while upgrading others such as at London with the construction of the White Tower. The crowning of William Rufus in 1087 and rebellion in the following year by several Norman lords, might have provided an impetus for William II's new regime to underpin its grip on the country through the upgrading of royal castles. While the 1090s saw several Norman campaigns into Scotland, following King Malcolm III's invasion of England in 1091, with Lincoln perhaps being seen as both a campaign military base and part of the means of securing the north against further incursions. Finally, the crowning of King Henry I in 1100 led to conflict with his brother, Robert Curthouse, an attempted invasion by Robert in 1101 and a subsequent policy, by Henry, of taking action against the barons who had supported Robert. Perhaps of particular relevance to Lincoln was Henry's various actions against Robert Bellême and his brothers, which included besieging Bellême's castle of Tickhill. Lincoln Castle would have been an important royal base in the campaign which, with its strategic value underscored, could have led to a subsequent upgrading of its defences.

Given the historical and architectural context the Phase 2 works are placed in the period *c.*1080 to *c.*1105.

4.1.4 Phase 3 - *c.*1105 to *c.*1115

Early wing walls on the Lucy Tower motte

During Phase 3 a new southern defensive wall was established, to the north of the southern Roman defences, which included a southern gate to the west of the Lucy Tower. A masonry wing wall was built from the west curtain wall, spanning the former Lucy Tower ditch and incorporating a south gate, extending up to the timber tower on the motte. The east side of the Lucy Tower motte also appears to have received a wing wall at this time, but only extending as far as the base of the motte. The Bishop of Lincoln was licensed to insert a new gate into wall of the castle in *c.*1105 to 1115, which might be the postern gate adjacent to the Observatory Tower mound, or the south gate on the west side of the Lucy Tower motte.

Terminating this phase abruptly the former timber tower on the Lucy Tower motte may have been damaged or destroyed by a fire in 1113.

4.1.5 Phase 4 - *c.*1129 to *c.*1138

Lucy Tower

Had there been a timber tower which was destroyed by the fire of 1113 there does not appear to have been an immediate impetus to construct a replacement tower. The construction of the stone Lucy Tower can be dated between 1129 and 1138 based on documentary references. In addition, the Lucy

Tower is one of a group of masonry shell keeps constructed upon existing mottes in the 1120s and 1130s the group including Carisbrooke, Durham, Kilpeck, Burton-in-Lonsdale, Wiston and Lewes. At all the named sites the decision to build a masonry shell-keep appears to have been entirely dictated by the presence of an existing motte which had been in existence for a sufficient period time to be stable enough (with an additional capping) to build on.

At the same time, the Phase 3 masonry wing walls on the motte were incorporated into the design of a pair of chamber blocks to either side of the Lucy Tower and contemporary with it.

4.1.6 Phase 5 - *c*.1138 to *c*.1154

Observatory Tower mound

Phase 5 includes the major remodelling of the southeastern corner of the bailey consisting of the construction of the Observatory Tower mound, within a substantial masonry revetment, with the mound incorporating a rectangular keep tower on its summit. The south end of the Phase 2 east range was disused and covered over during this operation. The masonry revetment wall will be reported as part of the results of the Mason's Yard investigations (FAS forthcoming).

Of the rectangular keep, constructed in ashlar masonry, only the base appears to remain. The tower has been inevitably linked to a charter, dated either 1146 or 1149, that gave Ranulph the right to fortify a tower in the castle. Ranulph appears to have died in 1154 providing a possible construction date between 1146 and 1154.

4.1.7 Phase 6 - *c*.1154 to *c*.1199

Establishment of the gaol

With the Assize of Clarendon in 1166, sheriffs were given the responsibility for the erection of county gaols, the cost met by the crown. At Lincoln the £4 was spent on the construction of the gaol in the year 1167-8. Such a modest sum would suggest that this was the conversion or upgrading of an existing building or buildings. Further substantial repairs are recorded in 1187-8 when Reginald, son of Eilsi of Wigford, and William of Parish supervised the repair of the gaol in the castle (CPR 34 Henry II, 67; Hill 1948, 385). Later documentary evidence would place the gaol within the range of buildings against the east curtain wall and in the Observatory Tower, presumably now redundant from their original purpose. The remaining upstanding medieval fabric of the Observatory Tower would readily fit into this period.

Observatory Tower as the Gaol Tower

A study of the fabric of the Observatory Tower reveals that the upstanding medieval fabric does not conform to the usual arrangements of a keep tower of the 12th or 13th centuries. The ground floor is heavily compartmentalised with crude arched openings between the compartments lacking any evidence for rebates in order to fit doors. The only evidence for a rebate is seen on the shouldered door opening that leads into the ground floor from the former lobby entrance (at the bottom of the stairs to the first floor). Significantly the remains of the rebate are on the exterior, lobby side, of the

door opening, indicating that the door was secured from that side, effectively isolating the majority of the ground floor. Further, there is a notable lack of original medieval window openings at ground-floor level, or features such as fireplaces. The only possible facility is a drain through the east wall which might have served a garderobe. Unfortunately alterations at first-floor level have obscured much of the original layout but sufficient remains to indicate that there would have been rather more impressive rooms, or room, occupying the southern half of the tower.

The 19th-century refacing of the exterior of the tower in ashlar work has further obscured the character of the building, but it is evident that at least the east elevation was of relatively crude construction employing coursed rubble. Thus in terms of the tower's plan form and architectural treatment it is markedly different to what would normally be expected of a keep tower of the 12th century and alternative parallels need to be sought.

For comparative purposes there are few purpose-built medieval gaol towers that survive in England, particularly early examples from the 12th or 13th century, although some are known from archaeological excavation, particularly in London. Lydford Castle, Devon, retains an upstanding purpose-built gaol tower. The Lydford gaol tower was originally built in 1194-5 at a cost of £74 (Renn 1968, 235) and subsequently heightened in the 13th century with the original ground floor buried in a mound. It was originally surrounded by its own ditch and its external appearance is very austere. In its 13th-century form it had a largely unlit basement (the 1190s ground floor), a ground floor which was entered by a door opening into a lobby from which a stair also led to the first floor. The ground floor was divided into three compartments for the holding of prisoners (who were provided with a single latrine). Of two rooms on the first floor the smaller provided accommodation for the gaoler, while the larger was used as a court room; the basement was probably used as additional prisoner accommodation. The form and planning of the Lydford tower has striking similarities with the Observatory Tower, albeit on a slightly larger scale.

Bailey defences

In the year 1192-93 the Pipe Roll has an entry for the bailey of the castle being strengthened at a cost of £82, the work undertaken by Gilbert Hurell and Miles the mason (PR 5 Richard 1, 37). From this period the construction of the southern section of the east curtain wall, around the existing east range of buildings, ascending the Observatory Tower mound can be identified. Much of the south curtain wall, between the Lucy Tower and Observatory Tower, also appears to have been built in this period, perhaps marking a retrenchment from the southern (Roman) enclosure south of the Lucy Tower motte.

Finally, the parallel walls of the barbican at the West Gate appear to date from this period. There is sufficient evidence in the fabric to suggest that the western end of the walls might have been closed off by a further gate arch.

4.1.8 Phase 7 - *c*.1199 to *c*.1223

In 1199-1200 the constable spent £20 on the repair of the 'new tower' and gaol (PR 2 John, 64) and it is likely that the works involved the Observatory Tower, now converted into a gaol, and the remaining buildings of the east range.

The various works between 1216-20 that were undertaken by Nicholaa de la Haye, the Mayor and Provosts of Lincoln and the earl of Salisbury probably included the West Gate barbican tower and repairs to several sections of the curtain wall which is the principal work assigned to Phase 7.

4.1.9 Phase 8 - *c*.1224 to *c*.1272

Phase 8 marks the last major medieval period of construction at Lincoln Castle. Several works can be identified in this period. Between 1224 to 1229 the re-fronting of the East Gate and construction of the associated barbican was undertaken, while repairs to the Lucy Tower appear to have included the abandonment of the eastern turret.

Cobb Hall and West Gate
In 1233 the '*Cusdam Turris'* was under construction with oak timbers being obtained probably for the construction of the roof; this building can be equated with Cobb Hall. At around the same time, in 1233-4, the remodelling of the interior of the West Gate was being undertaken.

North postern gate
The creation of the small gate in the north curtain wall has been assigned to this phase since its arch opening is of a typical 13th-century form.

Castle Chapel
Finally, in 1269-70, repairs to the castle chapel were undertaken which might have been located at first-floor level within the East Gate.

4.1.10 Phase 9 - *c*.1272 to *c*.1642

Few additions can be traced to the castle fabric in this period, while most documented repairs relate to either the administrative buildings such as the hall, or gaol, it seems likely that there would have been ongoing maintenance and repairs to the castle enceinte and its gates and towers.

The blocking and removal of south gate, through the south curtain wall, can be tentatively dated to around the Civil War period. It apparently still existed when Speed made his survey of Lincoln in 1607, but had vanished by the earliest 18th-century illustrations of the castle. It might have been blocked when the castle was fortified at the outbreak of hostilities, or, more likely, was damaged during fighting and subsequently the remains of the gate structure removed and the aperture blocked.

5.0 ASSESSMENT AND CONCLUSION

The detailed recording of extant medieval fabric at Lincoln Castle was a prerequisite of consent for the repairs and adaptations of the Lincoln Revealed Project which oversaw the most comprehensive conservation of the monument since that of Edward Willson. This programme of repairs thus created the opportunity to provide a stone-by-stone record of the surviving medieval fabric and this has resulted in a holistic understanding of the relative chronology of the extant fabric and has also presented a fresh appraisal of the date of these developments. Coupled with detailed examination of Willson's records a greater understanding of the effects of previous programmes of repair has also been achieved. In addition, the recording programme has resulted in a large number of newly identified elements of the castle among which can be listed the south gate, the complex evolution of the south curtain wall and contraction of the south side of the bailey, the chamber blocks of the Lucy Tower, the gaol in the Observatory Tower and the east range buildings.

6.0 ARCHIVE

The paper and digital archive for the archaeological investigation will be deposited at The Collection under Intervention 24 (Site Code LCRP '11-14, Accession no LCNCC:2012.157). Paper and electronic copies of this report will also be deposited with the Lincolnshire Historic Environment Record and sent to Historic England. A digital version will be made available online *via* the OASIS grey literature library.

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