

Discovery and Excavation in Scotland

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MAIN (NARRATIVE) DESCRIPTION: (May include information from other fields)	<p>A programme of standing building recording was undertaken on the roof of the Palace at Stirling Castle ahead of repair work to chimneys. It had been established that three of the chimneys were in such a poor state of repair that they would have to be partially taken down and rebuilt. A detailed photographic record was made of each chimney, and at least two sides (and usually all four sides) were drawn to scale and a plan was made of the chimney head. Fourteen chimneys were recorded in detail.</p> <p>Traces were seen of crowsteps within the uppermost reaches of the east range, suggesting the substantial survival of a pre Palace structure up to the roof line under much of the east range.</p>
PROPOSED FUTURE WORK:	
CAPTION(S) FOR ILLUSTRS:	
SPONSOR OR FUNDING BODY:	Historic Environment Scotland
ADDRESS OF MAIN CONTRIBUTOR:	4 Western Terrace, Edinburgh EH12 5QF
EMAIL ADDRESS:	g_ewart@hotmail.com
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HISTORIC ENVIRONEMNT SCOTLAND
PROPERTIES IN CARE
MINOR ARCHAEOLOGICAL WORKS 2016/2017

Stirling Castle • Standing Building Recording • November, 2016 – August, 2017

HES PIC Index Number: 90291 (PIC: 111)

SITE: Stirling Castle, Stirling.

N.G.R.: Centred c. NS 7900 9403

DESCRIPTION: Recording of chimneys on the Palace Block ahead of their repair.

PROJECT CODE: HSCO-90291-2017-01

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4 Western Terrace, Murrayfield, Edinburgh EH12 5QF

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INTRODUCTION

Under the terms of its PIC call-off contract with Historic Environment Scotland, Kirkdale Archaeology was asked to carry out a program of archaeological recording on the roof of the Palace Block at Stirling Castle, Stirling (Fig. 1).

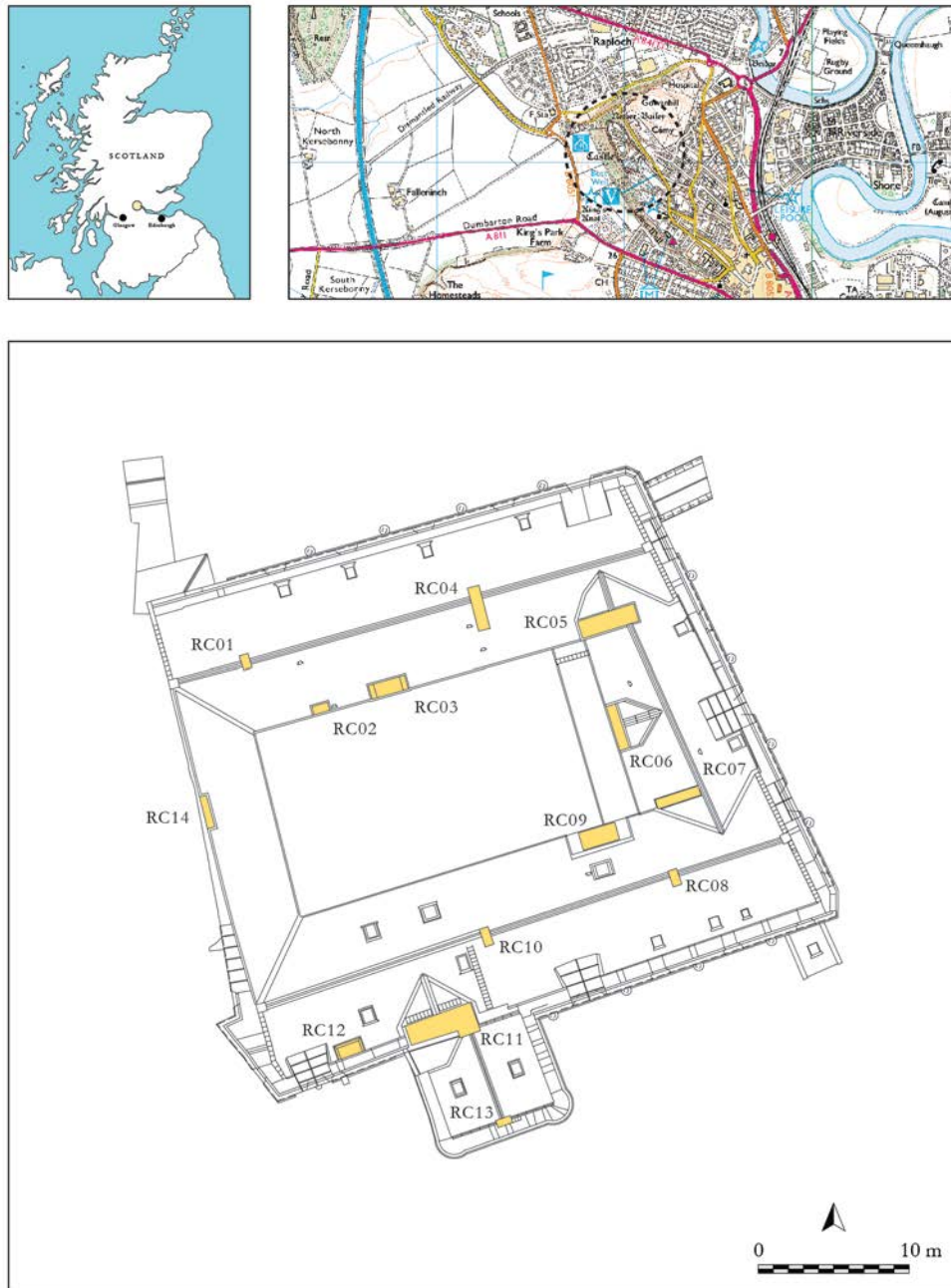


Figure 1: Plan showing the locations of the chimneys discussed in this report.

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Inspection of these chimneys by UAV had indicated that many of them were in a poor state and required repair. To this end HES arranged for contractor's to erect a major scaffolding structure, rising from the central courtyard of the palace (known as the Lion's Den) to its roof, with

walkways running from this out to individual chimneys.

Upon starting the program of archaeological recording it was obvious that three chimneys (RC01, RC02 and RC14) were in such a poor state of repair that they would have to be partially taken down and rebuilt.

A detailed photographic record was made of each chimney, and at least two sides (and usually all four sides) were drawn and a plan was made of the chimney head, all at an appropriate scale. Context numbers were assigned to all changes of build or additions to the chimney, these numbers were then marked on the drawings. *Pro forma* context sheets were used to give detailed written descriptions of the more significant contexts.

The work took place intermittently, from November, 2016 – August, 2017.

DESCRIPTION

CHIMNEY RC01

Chimney RC01 is located in the north-west corner of the Palace, towards the west end of the north range. It sits on the apex of the roof, above the unusually thick wall that separates P: 01 from P: 02 on the principal level. The only known fireplace that feeds into this is on the east side of this wall in the upper floor within component U: 04, this fireplace is thought to be inserted into the wall.

The chimney was rectangular, measuring 95cm N/S by 60cm E/W and standing up to 3m high. Two levels of scaffolding platforms allowed direct access to all but the base of the chimney.

Two different builds seemed to make up the bulk of the chimney. The lower, 001 consisted of 7 courses of ashlar masonry running around all four sides and standing up to 1.65m high. These courses are of somewhat variable height (18- 27cm high), while individual stones are typically 40-60cm long, although as little as 5cm was recorded. The short (N and S) sides are typically built with alternating orientation to the courses, so that a single stone runs E/W across the face, followed by a course of a single small central stone with longer N/S stones at either end.

The stones of 001 are heavily eroded, especially on the west side, on the best preserved east face evidence for what seems to be “pick dressing” is preserved. Most of the stones are fine grained pale grey sandstone; a few are coarser grained pale yellow sandstone.

Directly above 001 is build 002, 4 courses of ashlar masonry standing 1.1m high, with individual courses 23- 26cm high. These courses alternated on all four sides to have a single stone running along each face, below a stone running at right angles to the lower course. Although the stones were again typically 40- 60cm long, those that ran across the long sides are up to 95cm long.

While still weathered the stones of 002 were fresher than those of 001, preserving much evidence for fine vertical dressing, with 1 stone in the south face having deeper horizontal tool marks. All the stones seemed to be fine grained pale grey sandstone.

Above 002 build 003 comprised a single course of 4 stones that projects out some 4cm from 002 below and 015 above. 003 measured 68cm E/W by 1.05 m N/S and was 14cm high. A single stone ran across the north and south faces, with smaller ones in between. These were very weathered and lichen covered, but showed evidence for closely spaced vertical droving on their vertical faces, all seemed to be fine grained pale grey sandstone.

The top build of RC01 was 015, a single course of stones that returned back to the line of build 002, below the projecting 003. The west side of 015 was formed by a single stone that returned to the east at both ends, with 6 smaller stones making up the rest of the external faces. Although again weathered and lichen covered the sides displayed much evidence for fine vertical dressing, and the top, while more roughly finished was flat. There was a further course of stones running E/W behind the facing stones at the north and south ends. This left a rectangular flue 37cm N/S by 28cm E/W with roughly finished internal faces, and only minimal evidence for soot.

The ridge tiles (007 and 009) running along the top of the roof of the north range of the Palace are interrupted by RC01, although the exact junction is obscured by lead flashing 006. Both display a three quarters roll moulding running along their tops and sloping sides that these tiles display on all sides of the Palace, and seemed weathered enough to be original. It was noticeable that 007, the ridge tile to the west of RC01, lay some 10cm lower than 009 to the east.

A modern lightning conductor, 005 (not illustrated), runs down the south face, two copper alloy pins (012 and 013) on the east face of 001 sat either side of a scar (014), presumably from an earlier lightning conductor.

CHIMNEY RC01 INTERPRETATION

Chimney RC01 preserved evidence for two main builds: 001 at its base and 002 further up. These distinctions were based principally around the condition of the stones and their dressing, with 002 much fresher.

This chimney only seems to serve a single fireplace, itself an insertion. It seems likely that the lower build dates to the late 17th century roof alteration, or perhaps a little later. The condition of the upper build suggests that this is a 19th century repair.

The style of the top of the chimney, with a simple projecting course is the most common seen on any of the chimneys of the Palace. A similar arrangement can be seen on other buildings of the Castle, such as the Fort Major's House, that date to the 19th century.

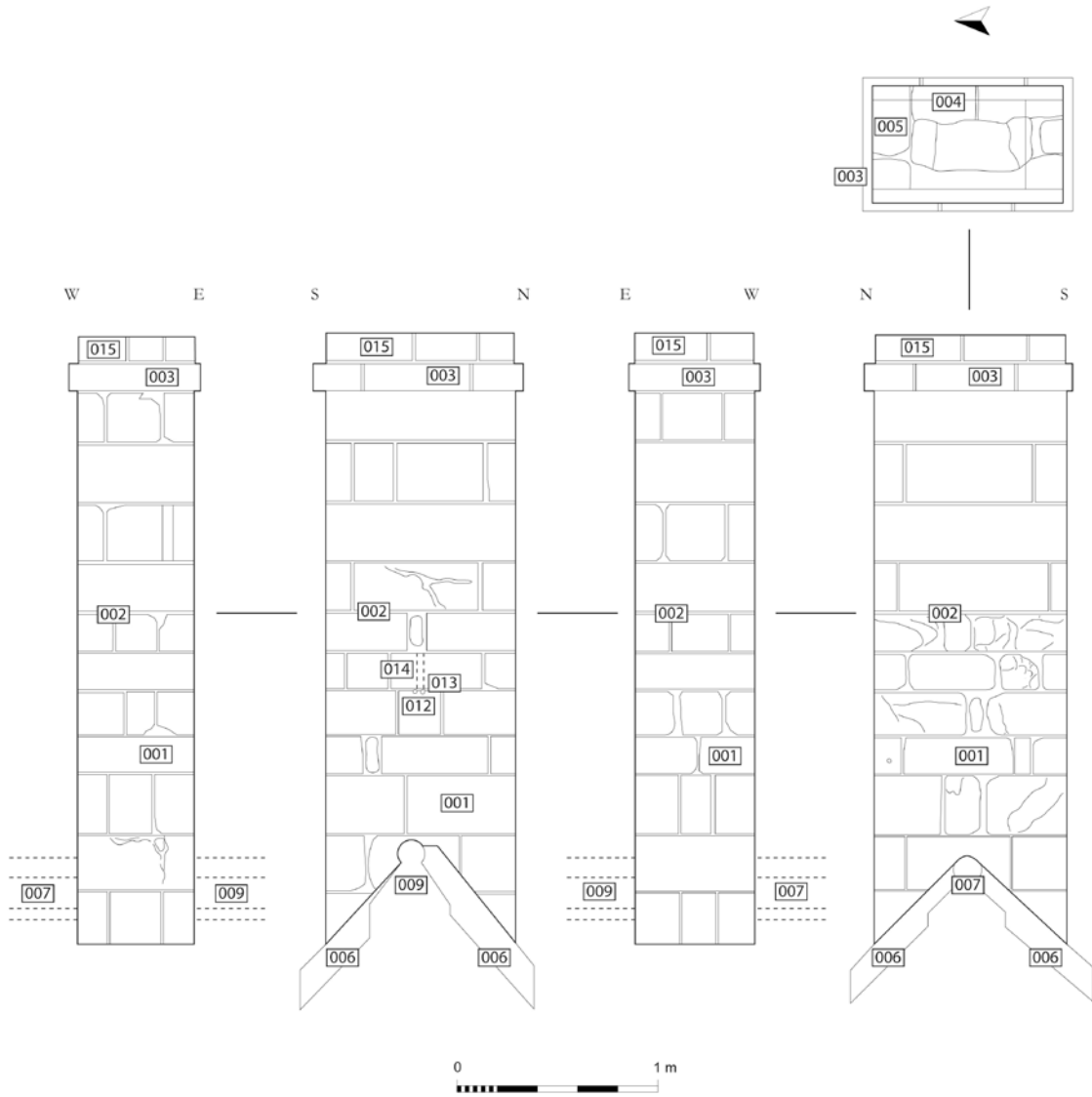


Figure 2: Chimney RC01, plan (top) and (left to right), southern, eastern, northern, and western elevations.

CHIMNEY RC02

Chimney RC02 was built on the south wall of the north range towards its west end, where a single fireplace in the south wall of U: 04 feeds into it. It was rectangular in plan, orientated E/W and measured 1.08 m E/W by 60cm N/S. The chimney reached a maximum height of 4.2 m, only just putting it over the top of the roof of the north range, like RC03 to the immediate east of RC02.

The main body of RC02 consisted of 12 courses (at maximum) in which three different builds were identified: 001 at the base, 005 above this and 002 at the top. All three builds were in very similar style, and the distinctions were made through analysis of the weathering and geological source of the differing builds. All three used large well shaped rectangular sandstone blocks, and all carried evidence for deep horizontal droving, and an incised vertical margin 5cm from each corner.

Context 001 made up the basal 9 courses and was the most eroded of all. The courses varied from 30-32cm high, and all were coarse grained pale yellow sandstone. 005 above this consisted of 2 courses on all but the south face, where there was only a single one. Both courses were 30cm high, and all the stones were finer grained pale grey sandstone. Above 005 were the two courses of 002, the upper 38cm high, the lower 30 centimetres. This build was much fresher than 001 or 005, preserving crisp tool marks, the stones were all fine grained sandstones, a mix of pale grey and pale yellow.

At the top of these three vertical builds 003 was a single course of stones that projected out some 5cm from 002 below and 004 above. Three stones made up each face and altogether they measured 1.2m E/W by 72cm high and were 12cm high. All the stones were very weathered and lichen covered, but they had well finished outer edges, which often retained traces of vertical tool marks. All seemed to be fine grained sandstones.

The final course of RC02, below modern capping was 004. This was a single course of stones 22cm high that returned to the line of the builds below 003. It consisted of 8 stones all placed on their edges and very eroded and lichen covered but clearly once well shaped, with cruder internal dressing.

Once the modern flagstone capping 015 was removed a single flue 35cm N/S by 45cm E/W was exposed. Two crude concrete bonded walls (012 and 013) lined the inner east and west faces of 004 to form this void. A series of five small sockets were recorded cut into the top surface of 004, one of which held the remains of a lead fitting.

CHIMNEY RC02 INTERPRETATION

Three builds were identified in RC02, but it is possible that the lower two (001 and 005) are a single build using different coloured stones. The horizontal droving on these might suggest an 18th or early 19th century date for this work. The freshness of the top courses, 002, indicates that this is a twentieth century repair.

The capping of RC02, a simple projecting course (003) is the most common form that this takes on the Palace chimneys. As noted for RC01 this is a probably 18th or 19th century style, and as 003 seems more eroded than the build below 002, this was probably taken down and reinstalled when 002 was added.

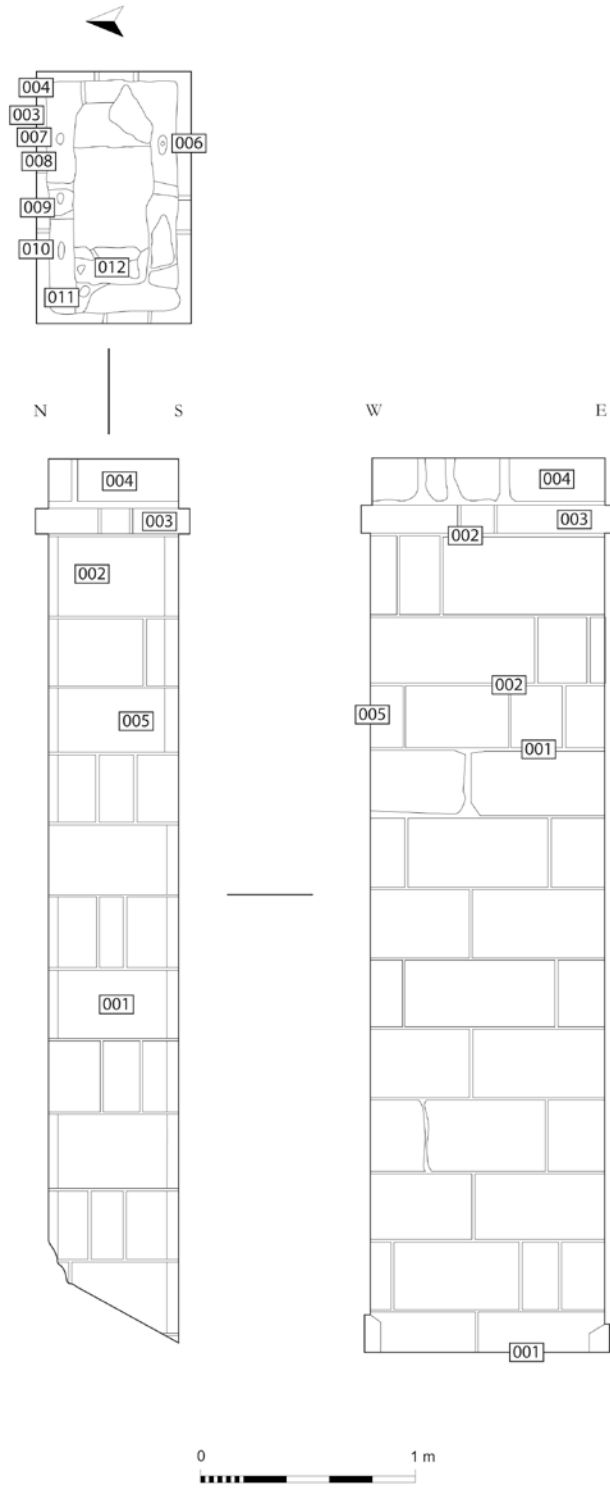


Figure 3: Chimney RC02, plan (top), western elevation (left), and southern elevation.

CHIMNEY RC03

This chimney was located on the top of the south wall of the north range, towards its west end and just to the east of RC02. RC03 stands 5.25m high, meaning that it is only just taller than the ridge of the Palace roof to the immediate N; along with RC02 this chimney seems particularly low.

RC03 was rectangular in plan; measuring 95cm N/S by 2.5m E/W. The chimney stepped in at matching points on its east and west faces and at a slightly lower point on its north face changing these dimensions as it rose. These meant that for its top 1.55m it was only 85cm N/S and for the final 1.1m it was reduced to 1.85m E/W.

RC03 serves a major fireplace in the south wall of the King's Outer Hall (P: 02), the largest in the Palace along with that in the Queen's Outer Hall (P: 11). Two upper floor fireplaces probably also use this chimney, in U: 04 and U: 06, both in the south wall of their respective rooms.

The majority of the chimney was of a single build 003; ashlar masonry that stood 16 courses (4.4 meters) high on the south face. This ran around three sides of RC03, but on the north face it only formed the quoins, being replaced by rubble builds 025 and 027.

003 had been formed by very well shaped rectangular blocks laid in courses 25- 27cm high, with individual stones typically 50- 60cm long. All the stones were uniform pale yellow fine grained sandstone, and display copious evidence for fresh vertical narrow tool marks.

The 'shoulders' of RC03 were reflected in the build of 003, altering its shape as the chimney rises. Those on the east and west sides (008 and 009) were very similar, consisting of two courses of wedge shaped stones that slope away gently from the chimney. All of the masonry of both shoulders is weathered and lichen covered, but these were clearly well shaped blocks of medium grained pale yellow sandstones.

The north face of RC03 was inaccessible and only visible at an oblique angle, but a similar narrower step in occurred on this side, a course lower than the shoulders on the short sides. This step was covered by eight wedge shaped sandstone blocks, 013, narrowing to their N, all were eroded and lichen covered but clearly well shaped. All the stones of 013 seemed to be sandstone.

The shoulders on the north face separated the two builds on this side with 025 below and 027 above them. Both were inaccessible, but were both random rubble builds, rich in sandstone, that seemed contemporary with 003 at the east and west ends of the north face.

A further area of different build, numbered 010, was recorded low down on the east face, and crossed this to just appear in the north and south faces as well. This comprised up to 3 courses of ashlar masonry, eroded and lichen covered but clearly well shaped blocks of medium grained pale grey sandstone. Unlike 003 a number of small chunks of stone and 6 fragments of slate were used as 'pinners' to level courses. The stones of 010 were laid in alternating directions at the south-east corner, in 'in band- out band' style. Only the top course crossed the east face (a distance of 96 centimetres), those below were removed by cut 028 (described below).

Three cuts ran across the east face of 010: 014, 015 and 028. 014 was a deeply incised vertical cut running down the bottom two courses of 010 (62cm high) near the south end of their east face. This had not damaged 003 below, but also had left no mark on the top course of 010, in spite of running right up to it.

The north edge of 014 seemed slightly disjointed, stepping out to the north so that it was 12 ½cm wide on the lower stone and only 11cm on the upper course. This north edge also seemed slightly splayed, while the south edge was vertical and ran down straight through both courses. 014 had a wide, slightly curved base up to 8cm deep, and displayed evidence for coarse tool marks.

Adjacent to 014, but not physically connected to it was a further cut 015. This was a horizontal cut along the bottom of the top course of stones of 010, whose base had been removed by a later cut 028. What survived seemed to have a downwards facing chamfer 64cm long at the top, and with the remains of a chamfered reprise at each end, with its width reduced to 55cm at the base of the chamfer.

This base of this cut and much of the east face of 010 had been removed by cut 028, which was then infilled by rubble 011. Although differing from 003's ashlar build, 011 may well be contemporary, with freshness to the stonework that suggested no great antiquity.

The base of the east face of RC03 was another area where some older masonry survived. Directly below 003 was build 021, two courses of inaccessible masonry below the lowest scaffolding platform. It was made of well-shaped rectangular blocks of coarse grained yellow sandstone.

Context 021 had been built over 023, again inaccessible, but a single horizontal course of well-shaped blocks of fine grained pale grey sandstone. These have a short vertical face before curving inwards gently at the base of their south face. This course can be traced around the Lion's Den which has been crudely clawed back in all areas, except those where it passes under a chimney (chimneys RC03; RC06 and RC09) where this curve survives. Below 023 was the south wall of the north range of the Palace, 024.

At the very top of RC03 were two further builds: 001 and 002. 002 was a single course of stones 20cm high laid over the top of 003. This features a vertical lower face with a 3cm roll mould at the top of this connecting the outer and upper faces. Often formed using large stones which were highly eroded and lichen covered but seemed to have all been fine grained pale grey sandstone.

The top build of RC03, 001, was a further horizontal course of 8 very finely shaped stones some 15cm high. Although again highly weathered and lichen covered these were carefully worked stones whose outer edges feature flat faces on three different planes, with a roll moulding at the top connecting the top and the sides. All the stones were fine grained pale grey sandstones, some bore faint traces of horizontal droving.

The top of build 001 had a flue 1.35m E/W by 35cm N/S running through it. This was further subdivided by two crude N/S cross walls, 006 and 007. These created 20cm long flues at either end, with a central opening 65cm long. 006 and 007 appeared to be cement bonded, at least at their upper build. A series of small cuts (all numbered 004) were recorded in the upper face of 001, surrounding the flues.

CHIMNEY RC03 INTERPRETATION

This chimney seems to have seen a major rebuild represented by 003, the freshness of which suggests a late 19th or even early twentieth century date. An attempt has been made however to reuse some stones from an older, and presumably the original, chimney. This is probably conscious antiquarianism, part of the realisation that the castle is an ancient monument that should be treated with respect. This decision allows us to make at least some observations about the earlier chimney.

The fireplace in P: 02 is certainly original to the Palace, so there must have been a chimney in this location. This is backed up at the base of RC03, where the bottom two courses of the chimney (021) seem original. These sit over 023, the moulded string course that runs around the Lion's Den, itself over 024, the south wall of the north range of the Palace. The string course has been clawed back along most of its length, surviving only on the east range, and under the chimneys. This seems to be in Situ 1540 masonry.

Above this areas of older masonry survive, but they must have been taken down and rebuilt when build 003 was installed. The fact that all three 'shoulders' (008; 009 and 013) seem to be older masonry gives us confidence in assuming that the basic shape of RC03 has stayed the same. It is possible that the height has been altered, with more or less courses built when 003 was added however.

The patch of masonry 010 in the east face of RC03, with its two cuts (014 and 015), also seem to be a recycled older element. The vertical cut 014 is curiously disjointed, as if there are missing stones from

between the two it currently runs across. The horizontal cut 015 is very close to 014, but not quite connected, it has a chamfer on its underside, which itself has been truncated.

These two cuts are hard to make sense of, and it seems probable that there are missing elements here that were not replaced- presumably because they were judged too poorly preserved. On the assumption that these really are from RC03, partly rebuilt when 003 was constructed, then there must have been some sort of feature here originally.

The chamfered underside to 015 suggests some sort of aperture, perhaps an inspection hatch in the side of the chimney, but too little remains to be certain. A similar, but not identical, feature was recorded in the west face of RC09, in the sense of a deep vertical and horizontal cut in close proximity in the side of a chimney. In the case of RC09 however there were two parallel horizontal cuts, neither of which bore a chamfer, and there was solid masonry around these, with no trace of an aperture.

The top of this chimney carries a unique series of mouldings across two courses of stonework (001 and 002). Tool marks visible on these suggest that they are not Palace period, yet seem to predate 003. A 17th or 18th century date might seem appropriate for these.

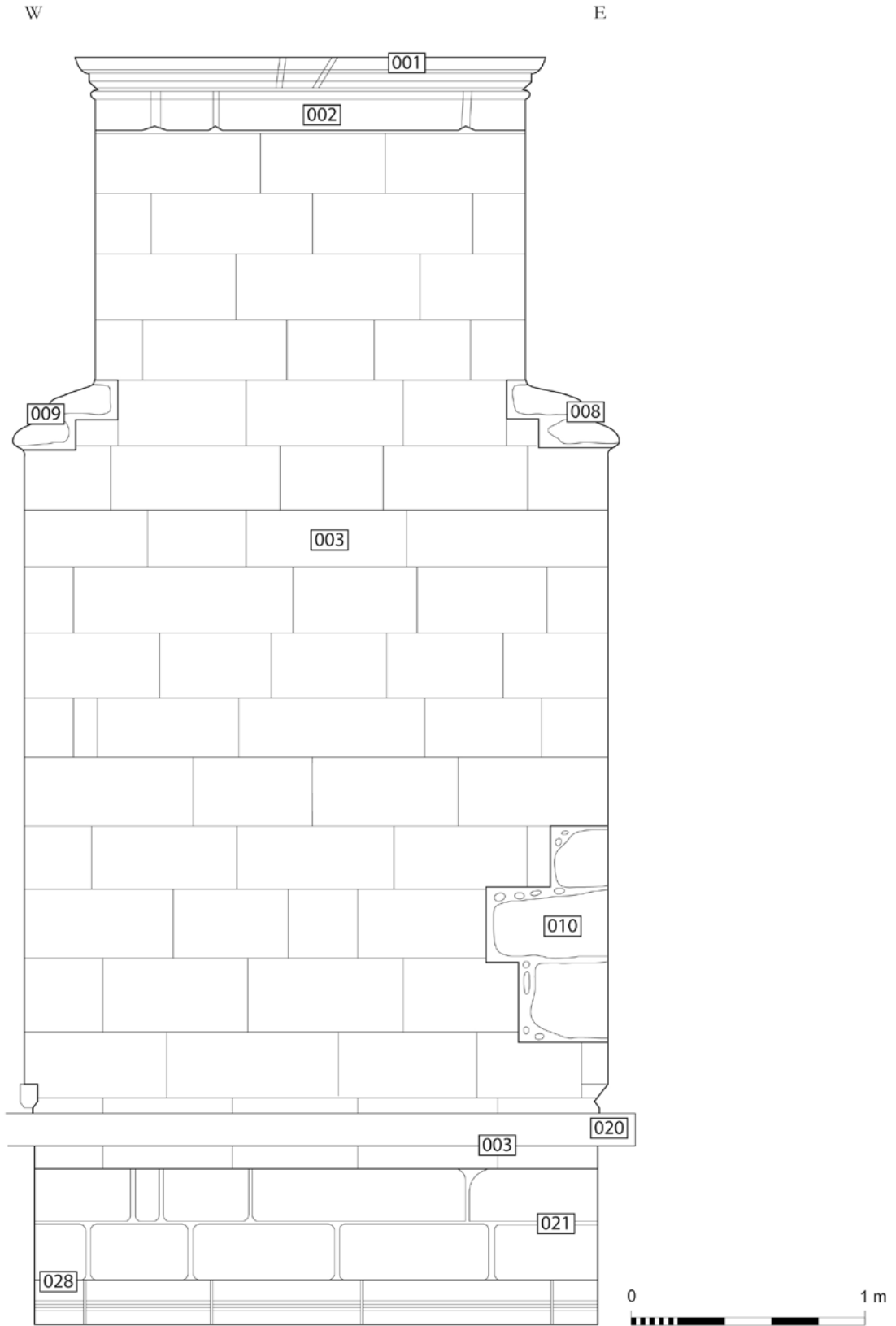


Figure 4: Chimney RC03, southern elevation.

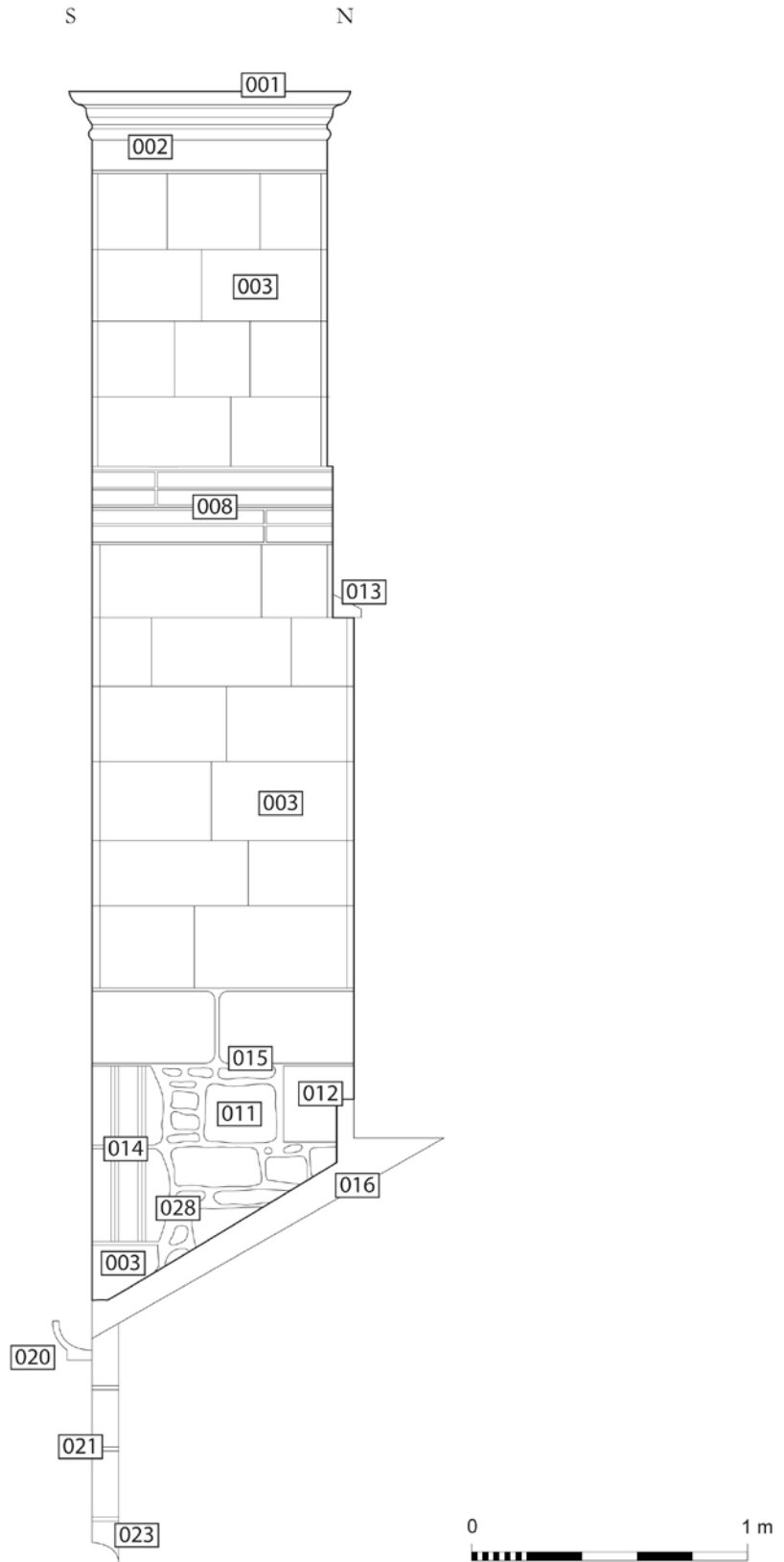


Figure 5: Chimney RC03, eastern elevation.

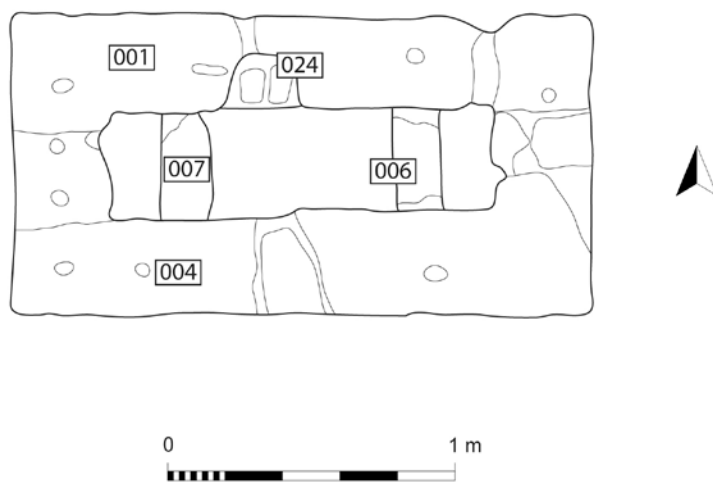


Figure 6: Chimney RC03, plan.

CHIMNEY RC04

This chimney was located on the north range of the Palace, towards its east end, and ran N/S across the ridge of the roof, although off centre to the south. Three levels of scaffolding platforms allowed access to all but the very base of the E, south and west sides, the north face could only be accessed on the upper two platforms. It measured 2.9m N/S by 80cm E/W and stood 3m high on its south face.

RC04 sat above the dividing wall in the north range that separates the King's Outer Hall (PO: 02) from the King's Inner Hall (PO: 03). This wall has no fireplaces in it on the principal level, while on the Upper Floor they are known on either side; in UO: 08 to the west and UO: 09 to the east. As with all upper floor fireplaces it is not known if these are original to the Palace or are later inserts.

A total of five major builds were recognised in the main body of RC04, along with some minor repairs. The lowest of these, 001, was represented by a single block of pale yellow coarse grained sandstone crossing the south face. This was heavily weathered, and may simply be a more eroded version of the build above.

Context 002 began directly above 001, and consisted of four courses of ashlar masonry standing to 1.15 meters, with each course consistently 28cm high. On the south (narrow) face the courses alternated orientation such that a stone crossed the face every second course, with colour banding so that every block that crossed this face was pale yellow, while the other courses were of pale grey stone. On the east face only a single stone of 002 was present on the top course, at the south end, to the north of this was 003.

All the stones of 002 were fine grained sandstone, and clearly well shaped with copious evidence surviving for their dressing. This took the form of closely spaced vertical droving, with some of the corner stones of 002 preserving evidence for a 5cm wide margin at the corners infilled by horizontal tooling.

The build above 002, 003, was very similar in style, but used coarser grained sandstone blocks, all of which were grey, and it was more weathered. This meant that only faint traces of tool marks were noted all of which seemed vertical with no trace of margins.

Context 003 stood to three courses, except on the east face where most of a lower fourth course survived. These courses were all a consistent 29cm high, with the same alternating orientations on the south side as noted for 002 (although not the colour banding this build shows), on the long sides stones up to 1.1 m long were recorded, although they were more typically 60- 90cm long.

Above 003 was build 004, a single course of six stones laid horizontally around the chimney. This stood 18cm high and consisted of carefully dressed stones with an outwards curve along their bases, capped by a 5cm high vertical face. This meant that the top of the course projects some 10cm from build 005 above, this top sloped up gently towards 005.

A single stone of 004 crossed both short (N and S) faces, a maximum of 99 centimetres, while two other stones (up to 1.07m long) between these made up the longer sides. The stones were all weathered coarse grained sandstone, a mix of pale yellow and pale grey, clearly carefully dressed, but with no tool marks seen.

The uppermost build of the main body of RC04, 005, returned to the line of the builds below the projecting course 004. It comprised 7 courses of high quality ashlar masonry 2.18m high, with individual courses 29- 30cm high. The shorter north and south sides alternated orientations on each course, but didn't display the colour banding noted for build 002 below them. The blocks making up the longer sides varied from 45cm to 1.18 m long.

The stones of 005 were in relatively good condition, although suffering some physical and much chemical erosion, most noticeable on the west face. There was a single fine grained stone in the east face; all the others are a mix of pale grey and pale yellow coarse grained sandstone. Many stones displayed traces of vertical tool marks. A single stone crossing the south face displayed different broad shallow vertical tooling, changing to horizontal on its east and west faces. This was interpreted as a replaced block and numbered separately as 006.

Above 005 was a single course of carefully shaped stones numbered 008. This stood 16cm high and projected out from builds 005 below and 009 above, giving a maximum size of 1.04m E/W by 3.17m N/S. The outer face of 008 displayed two courses of small (8- 9cm long and 4cm high) chequerboard moulding.

A single stone of 008 crossed each short side, with 5 others making up each of the longer faces, the longest here being 98 centimetres. The stones were physically and chemically weathered, but all seemed to be coarse grained pale grey sandstone. No tool marks were recorded on 008, although clearly the stones were skilfully carved.

The top course of the chimney 009 consisted of 6 large well shaped blocks standing 35cm high. The base of each stone consisted of a short (5cm high) vertical face above which the stones sloped inwards almost to the top of the course. This is capped by a small curved projection 6cm high and 3cm wide which comes to a flat top on the upper side. The top of 009 was a flat area 60cm E/W by 2.77m N/S. The

stones were eroded and lichen covered but the stones were clearly carefully shaped, all seemed to be coarse grained pale grey sandstone.

Cut through the upper surface of 009 were two oval holes (both 30cm E/W by 32cm N/S), both of which fed through two different stones. The north example had a slight raised lip, 9cm wide and 3- 4 millimetres high running round it, with faint traces of a similar feature around the south flue. A lining of handmade bricks was visible inside each flue (011 to the north and 012 to the S) starting below 009. Although inaccessible these both seemed to form square shafts 32cm square.

The ridge tiles of the roof of the north range ran up to both long sides of RC04: 015 to the west and 017 to the east. These were both of typical style, with sloping sides and a broad three quarters roll mould along their tops. While 015 is weathered and lichen covered (and has a cement repair 016 at its east end) 017 was much fresher with much evidence for heavy diagonal tool marks. A lightning conductor 013 ran down the south face of RC04, and a single square section copper pin 018 in the east face presumably marks the site of an earlier version.

CHIMNEY RC04 INTERPRETATION

This chimney seems to be of a single principal build, with a phase of repair represented low down by 002 (and possibly 001). This is based around the colour banding and more especially the dressing displayed by 002. The enhancement of the corners by horizontal droving might suggest an 18th or 19th century date for this repair.

The main build of RC04 is unique for two major reasons. Firstly the outwards curving wash course 004 is not repeated elsewhere. Secondly the large size of the chimney, unique for one that only serves upper floor fireplaces, and also the only one of this size to be built on a spine wall, not an outer wall of the Palace.

The style of the masonry of RC04, in terms of geology and treatment seems similar to that on other fireplaces thought to be of 17th or 18th century date, such as RC14. The elaborate chequerboard moulding, with projections simply too small to see from the ground, is matched in two other chimneys: RC07 and RC14. While RC07 serves a Palace period fireplace, it is suggested that this is a later capping. RC14 is in the west range of the Palace and its fireplaces can be seen to be inserted, and this is thought to have been in the 18th century.

RC04 then might be an exceptionally large and elaborate chimney constructed in the 18th century. The style and scale suggest rather more high status occupation than the simple barracks block that the Palace was to become. This chimney then saw a phase of repair, probably in the 19th century.

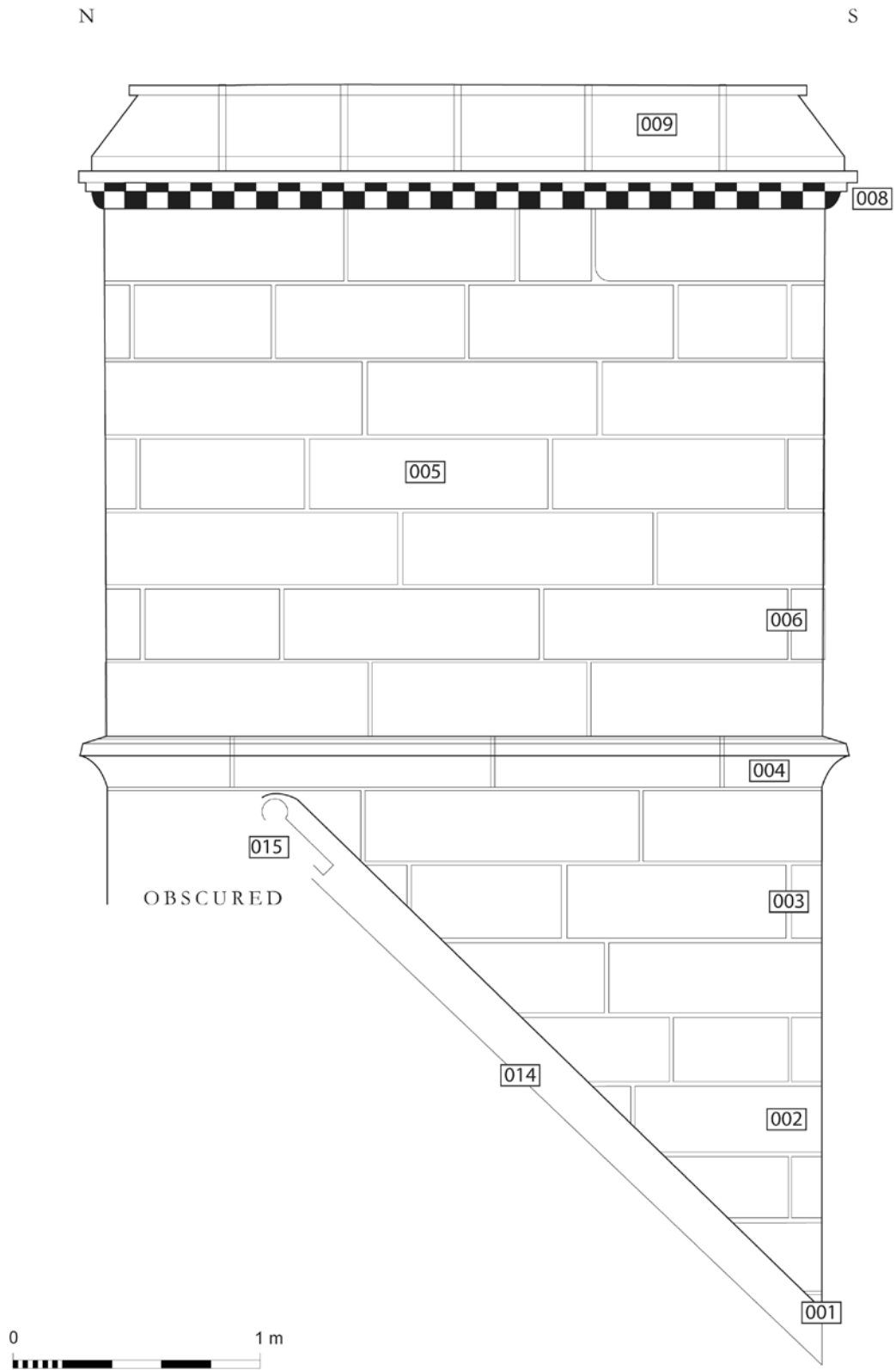


Figure 7: Chimney RC04, western elevation.

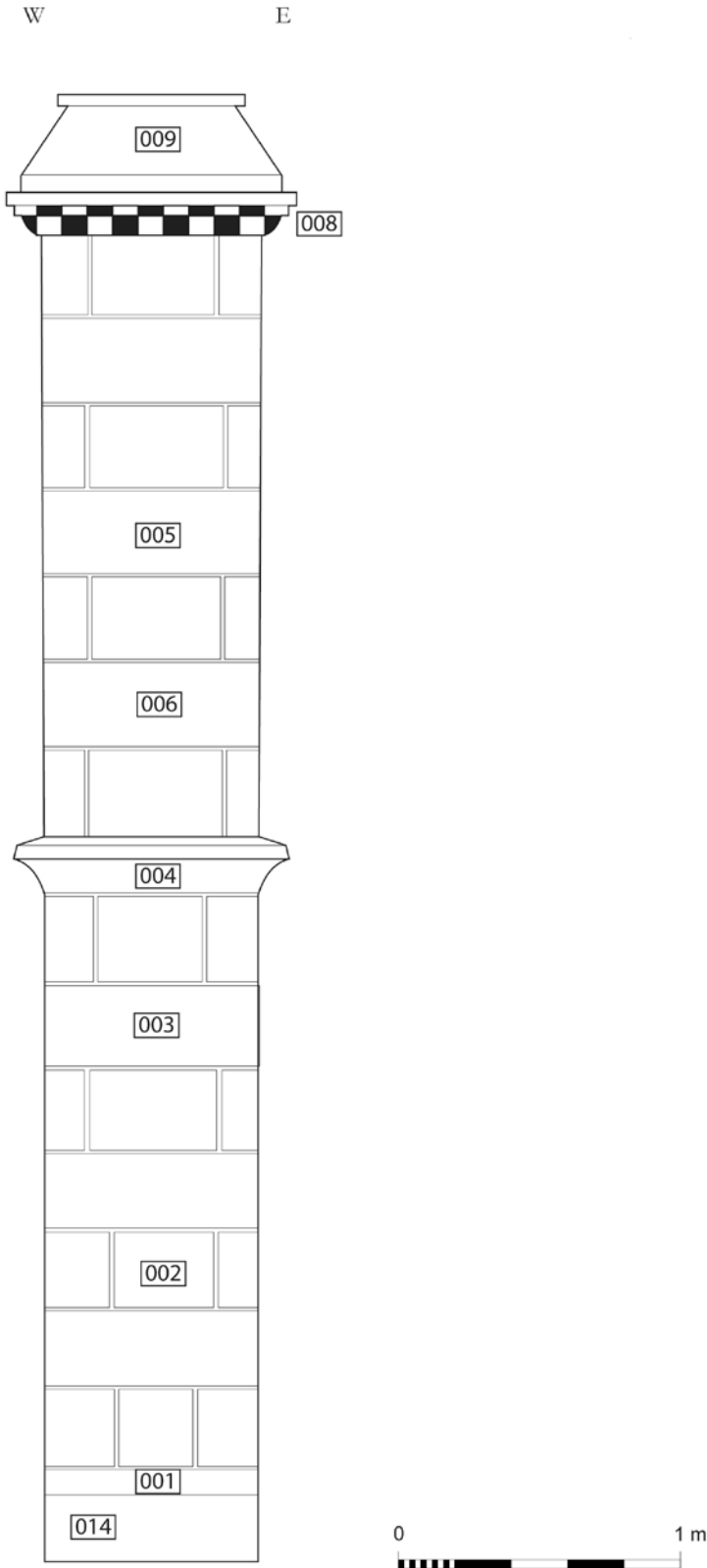


Figure 8: Chimney RC04, southern elevation.

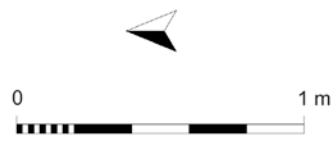
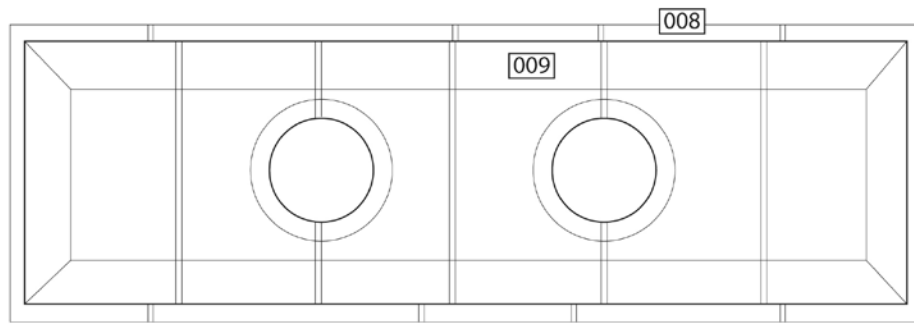


Figure 9: Chimney RC04, plan.

CHIMNEY RC05

Chimney RC05 was situated at the junction of the east and north ranges, effectively at the north end of the east range. It is off centre to the east range however, sitting with its west side on the line of the west wall of the main east range, not the lower range that runs up the west side of the east range. To the east RC05 crosses the roof ridge of the east range, but stops well short of the east wall of the range.

RC05 was tallest to the S, reaching a maximum height of 7.8 meters. At the base it measured 3.8m E/W by 1.25m N/S, but 5.4m up it has 'shoulders' sloping in to both the east and W, reducing its length to 2m E/W for the top.

There is a substantial fireplace near the east end of the south wall of the King's Inner Hall (P: 03), thought to be original to the Palace's construction. On the Upper Floor fireplaces are known on both north and south sides of this wall, in U: 10 and U: 12. That to the north in U: 10 has a fine late 17th century fire surround, as is usual for the upper floor of the Palace little is known about the history of these fireplaces.

Six levels of scaffolding platforms gave varying access to RC05. Almost all of the south face and much of the west and north faces were fully accessible. On the east side only the uppermost area, above the sloping shoulders was within reach. The rest of the east face was examined from ground level.

A potentially early build 001 was identified at the base of the west side of the south face of RC05. This took the form of a series of 12 rectangular sandstone blocks placed in ascending order, with the lowest to the W, so that each successive stone is above and slightly to the east of the previous one. Altogether they rose some 3.45m over a distance of 2.6 meters.

All the stones of 001 were set back 15- 22cm from the one below, the smallest was 20cm high and they averaged 28 to 30 centimetres. The blocks ran behind lead flashing 011, but the most exposed (top) one was at least 35cm long. 001 was heavily eroded, but its stones were all coarse grained sandstone, mostly pale yellow in colour, but some were banded with darker yellow.

Above 001 on the S, west and north faces was a series of three builds thought to be contemporary, themselves cut away (described below) at the east ends of the long sides. Directly above 001 was 004, random rubble build occupying an area roughly 2.3m E/W by 4.9m high, although it was hard to differentiate from 073 that had replaced it to its east.

The stones of 004 varied considerably in size, but even more in terms of geology. While coarse grained pale yellow sandstones were the most common a wide variety of textures and colours, and some dolerite was recorded, increasing in frequency towards the top of the build. Although eroded some stones (especially lower down) have coarse tool marks on them.

On the north face of RC05 the equivalent to 004 seemed to be 013. Again this was a random rubble build using a wide variety (although less varied than 004) of sandstones and some dolerite chunks in its makeup. Here there was a clear break with 014 to its E, 013 was up to 3m E/W by 3.2m high.

Connecting these two sides on the west face and providing the quoins for the south-west and north-west corners was ashlar masonry 003. This was 16 courses of very badly eroded rectangular sandstone blocks standing 4.16m high. The height of individual courses varied considerably (from 18 to 30 centimetres), while individual stones were typically 30 to 40cm long, but reached up to 60 centimetres.

The stones of 003 were among the most eroded seen on any chimney, with a presumably water worn channel running down the south side of the face. No tool marks survived, but the individual blocks were originally well shaped. They were all coarse grained sandstones, some very coarse, and were typically pale yellow in colour, but sometimes banded with darker yellow.

On the north side the evidence for 014 being a later build at the east end was more compelling than was the case for the south side. While both 013 and 014 were random rubble builds, they could be clearly differentiated on geological grounds. 014 included a higher proportion of dolerite, and while still principally sandstone it was a distinctive pale grey colour (similar to that used in the east face build 007, which it is thought to be contemporary with).

On the south side the geological distinctions were subtle between 004 and its assumed rebuilt east end 073. On both north and south sides a strip perhaps 1.2m wide had been rebuilt, with ashlar masonry 007 connecting them on the east end. This ashlar formed the quoins of the north-east and south-east corner and was inaccessible. It stood 9 courses (2.4 meters) high, with evident variability in the heights of individual courses. All the stones of 007 were medium grained pale grey sandstone.

On the south face one of the courses of the quoins of 007 was continued by a second stone to the west. This was numbered separately as 005. These two stones projected out 12 to 13cm south of the line of 007/ 073, and had a carefully shaped gently sloping top over this projection. Below this the face continues down on this new line, and while the east face is flat itself, this small shoulder is reflected in a slight widening of the length of the face below it.

Sitting above all this masonry are the shoulders of the chimney RC05, three courses numbered as four discrete parts, although doubtless contemporary: 020 for the west shoulders; 021 for the east ones; 022 for the connecting masonry of the south face and 023 for that of the north face. All these were ashlar masonry made from often massive blocks built in courses of variable heights. The stones were the same pale grey sandstone as used in build 007 below them. The stones were weathered, but faint traces of

vertical tool marks were often evident.

Above these a single build 024 ran around all four sides of the reduced chimney. This was 5 (variable height) courses, 1.2 meters, high, and was built using identical stones to the builds directly below. On top of 024 was a single course of stones 025 that projected out 6cm in all directions. This stood 14cm high, and although badly weathered, seemed similar in build to 024.

The top course 026 was again a single course of stones that returned to the line of build 024. It consisted of 8 stones standing 15cm high. Although eroded and lichen covered these seemed to be coarse grained sandstones, and preserved evidence for vertical tool marks on their edges, and peck marks on their flat top.

Central to this flat top was a rectangular void, 1.35m E/W by 60cm N/S. This was lined internally by a single skin of handmade bricks 048, and two N/S dividing walls (also of handmade brick), 049 and 050, subdivided this into three separate flues. The westernmost had a circular metal tube (051) feeding into it.

Numerous small cuts were recorded in the top surface of 026, some with lead fittings still in situ. Two larger cuts were recorded in the long sides of this build: 046 in the south face and 047 in the north. Both were some 20cm long, ran the height of the course, and cut back the projecting part of 026 until it was flush with the builds above and below.

At the west end of the south face the top of the south wall of the north range of the Palace, 028, was recorded. This was a dolerite rich build and was thought to be contemporary with wash course 029/ 030 above it. Stone 029 to the west had been fully clawed back (by 031), and while the west end of stone 030 had also been cut back the East end hadn't, indicating that this was the original end of this moulding. Build 032 above 029/ 030 was a low section of walling, indicating the raising of the wall head on this side.

A modern lightning conductor 033 runs up the south face of the north range of the Palace, then up the west face of RC05. A copper alloy pin 071 in the north face indicates the route of an earlier lightning conductor. A small round hollow 075 in the east face of 007 may be caused by a musket ball.

CHIMNEY RC05 INTERPRETATION

RC05 seems to provide evidence for three major phases, with the possibility of the rebuilding of the very top as a final fourth phase. The earliest is represented by 001, the crow steps fossilised within the south face. As the bulk of the chimney sits over these they presumably predates it. As the chimney serves a Palace period fireplace then these crow steps must be older than 1540.

The implications of this are quite profound. Early pre- palace phases were recognised in both the Vaults and the Principal level, but 001 show that these reached to the top of the building, at least at the west side of the north end of the main block. Possible crow steps were recorded at the south end of this range adjacent to RC09, and these could mark the south end of the same building, although these examples were little seen, and are not as convincing.

As the east end was cut away we do not know the full original extent of 001. It is possible that they rose higher than the current roof, and they may have extended further to the east. The north end of a building in this position would provide ample room between it and the south-west corner of the Great Hall, allowing easy access to the Upper Square of the Castle.

In the second phase the bulk of RC05 was built over the phase one crow steps, this presumably dates to 1540. Considerable care has gone into the west face, visible from the Lion's Den, while the north and south faces, blocked from view by the roof lines of the north and east ranges, are random rubble. The east face was removed in phase three, but likely matched the west face.

Phase three then saw the removal of the most visible east face, and its replacement by pale grey sandstone ashlar masonry. This build then continues up across both the shoulders and into the build above. This seems most likely to date to the late 17th century, when the major work on the roof was undertaken.

This indicates the scale of work undertaken at this time, as not just the timber elements of the roof were replaced, but also areas of stonework were rebuilt. This presumably was done to provide a matching style for the new look of the Palace. Very similar shoulders are also found on RC09, another prominent large chimney.

In the final phase of work the very top of RC05 was replaced. The simple projecting course is matched in many other chimneys at the castle, and seems to indicate a 19th century date. The metal flue may well have been installed at this time.

W

E

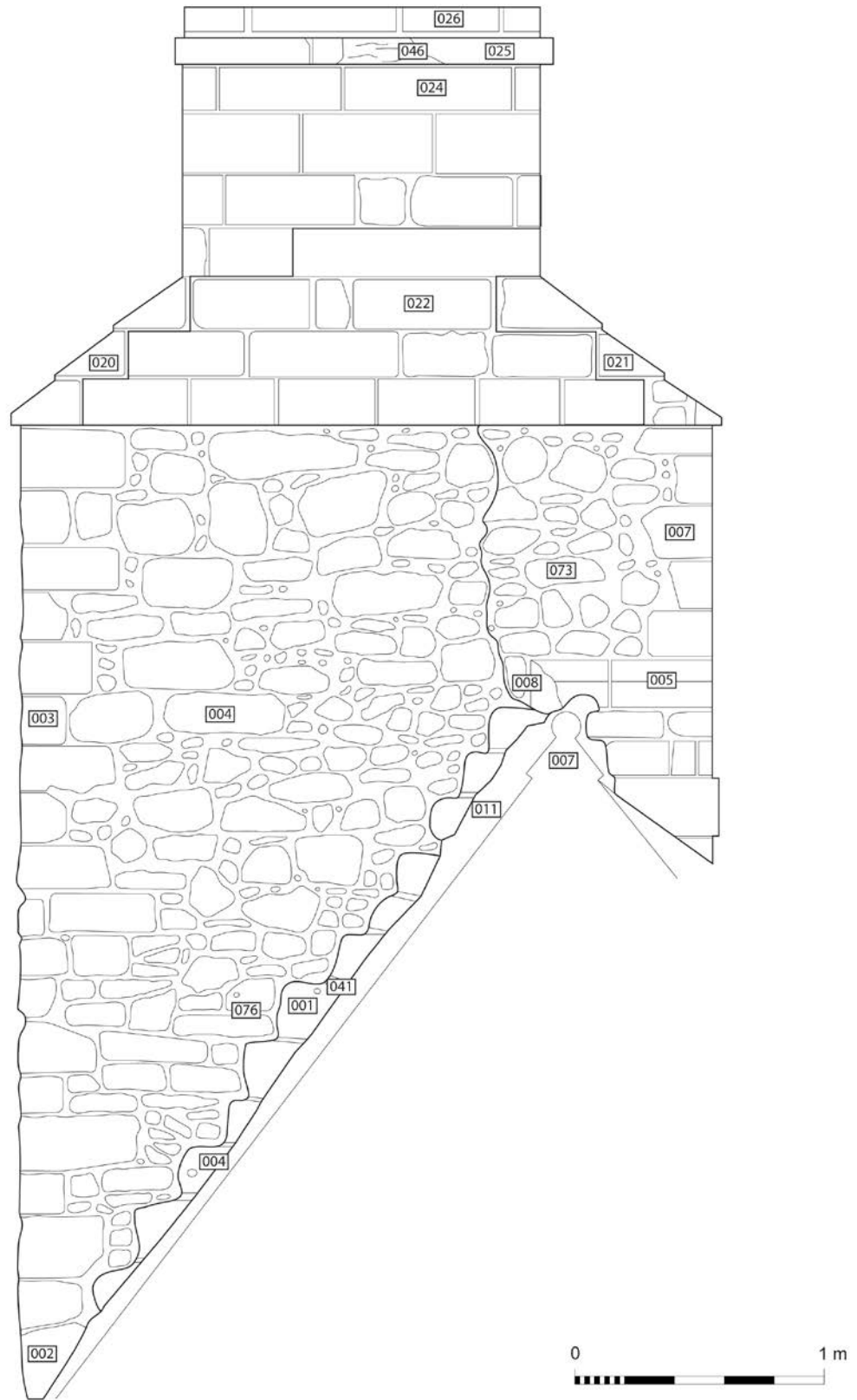


Figure 10: Chimney RC05, southern elevation.

E

W

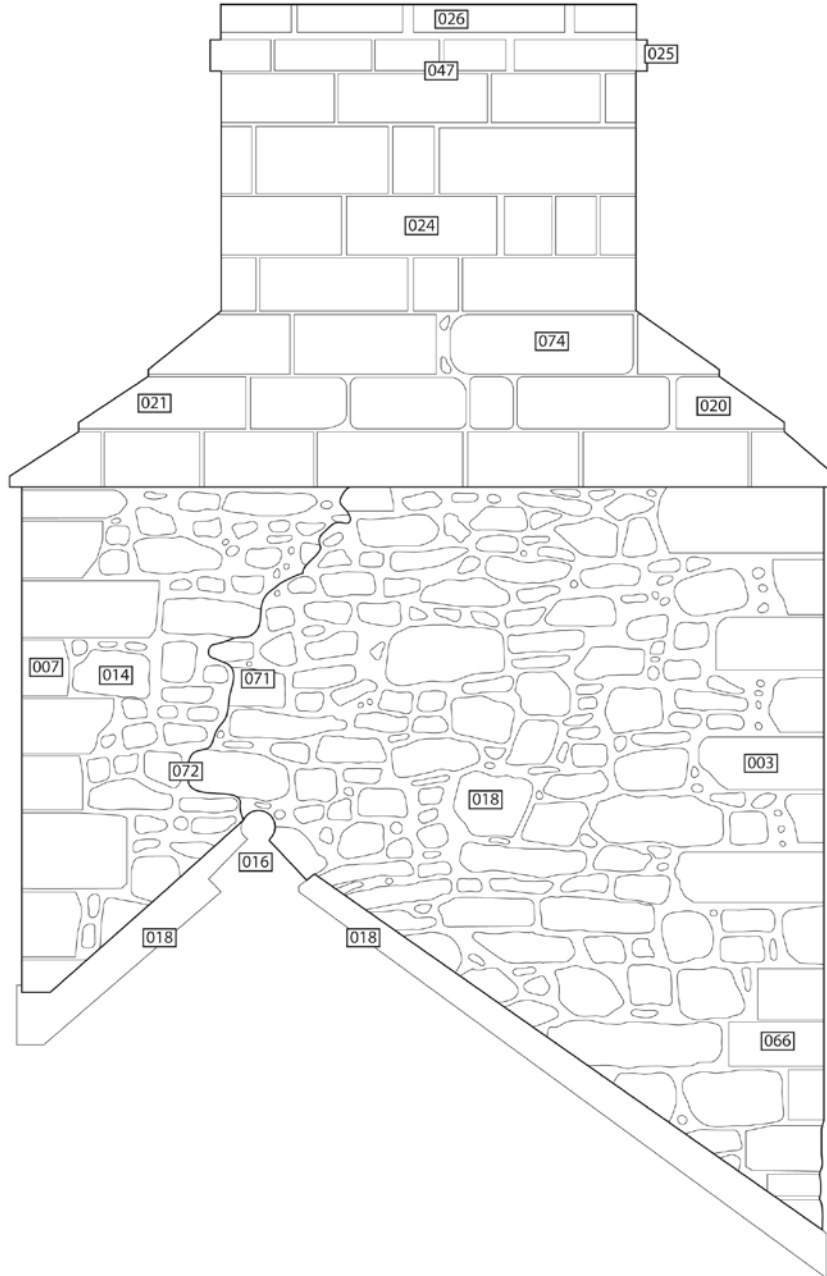


Figure 11: Chimney RC05, northern elevation.

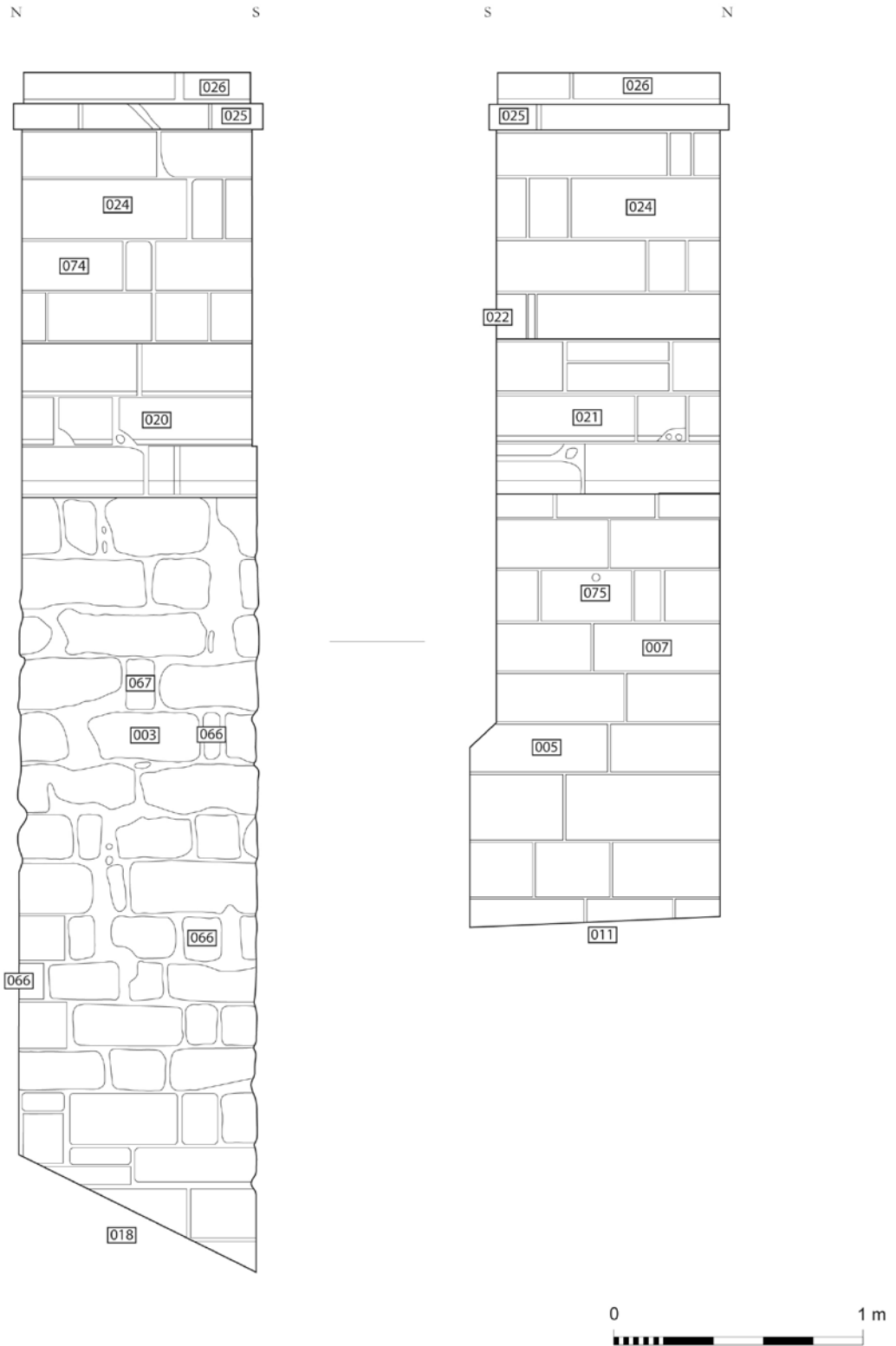


Figure 12: Chimney RC05, western elevation (left) and eastern elevation.

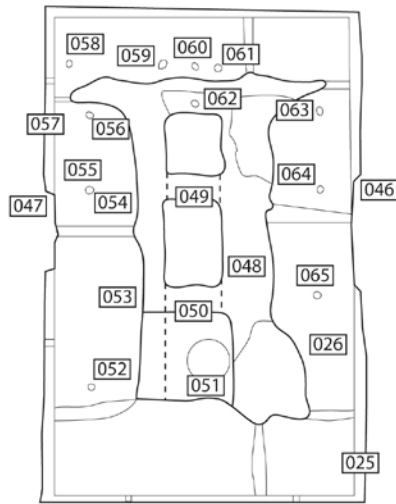


Figure 13: Chimney RC05, plan.

CHIMNEY RC06

This was a large chimney orientated N/S situated centrally to the wall that makes up the west side of the King's Bedchamber (P: 04). There is a further low narrow range to the west of this room, but RC06 starts above the roof of this additional range, on the wall head to its E

RC06 measured 6.95m high and was 65cm E/W by 3.05m N/S. A small roof ridge ran west from the main east range roof to run into the back (E) side of the chimney. Although lower than the main east range roof line this features the same stone ridge tiles and is slated.

There is a fireplace in the west wall of the King's bedchamber (P: 04), and a further example in the Upper Floor (U:14) which both presumably use this chimney. While that in the royal bedchamber is original to the Palace it is again unknown if the Upper floor hearth is original or not.

The bulk of RC06 is a single build 001 which, apart from minor repairs covers almost all of the S, west and north faces and much of the east. It consisted of up to 20 courses of high quality ashlar masonry, standing up to 6.4m high. On the east face however it made up only the top 6 courses (1.94m tall), below which was walling 002 (described below), although 001 continued to provide the quoins for the full height of this side.

The courses of 001 varied from 29 to 33cm in height, while individual stones were typically 1 meter long (in the long sides), but varied from 15cm to 1.3 meters. At the short north and south ends the courses were laid in alternating directions, so a single stone crossed the entire face every second course.

The masonry of 001 was weathered by both chemical and physical action, but some stones still preserved faint traces of vertical droving. All were coarse grained sandstones, a mix of pale grey and pale yellow in colour, but with a tendency to use more yellow stones lower down in the west face.

On the east face of RC06 below the top 6 courses of 001 there was a build 002 that was unique to this side. The roof ridge connecting this face to the east range roof ran up against this face, obscuring much of 002. While the courses of 001 were maintained by 002 they were rougher, with individual stones crudely finished.

The majority of the stones used in 002 were large (e.g. 55 by 30 centimetres) blocks of coarse grained pale yellow or pale grey sandstone, however some small sandstone chips and at least 2 slates were used as pinnars. One slate measured 32cm long by 8 millimetres thick. Although weathered and chemically blackened coarse tool marks were often visible across stones.

A series of stones were thought to be replacements of the original ones, defined by their crisp dressing and well preserved shape. These were divided into two types, each of which was given a single context number to describe all examples across RC06.

014 consisted of two very well squared blocks both of which had the date '1991' carved into them. One of these was in the west face of 001, while the other was within 002. 015 consisted of 14 replaced stones across all faces of 001, these were of a finer grained stone than that used for 001, and carried clear evidence for vertical dressing.

At the base of the west face of 001 was 007, a single horizontal course of moulded stones that continued to north and south beyond the area of RC06. These all had a short (8cm high) vertical face at their tops, below which they curved inwards to the east for some 6cm over a height of 8 centimetres. The stones of 007 were all fine pale yellow sandstone, and while highly eroded they were clearly well shaped.

Below 007 was masonry 008, the wall forming the west side of the east range of the Palace. In the area below RC06 this was almost entirely made of dolerite, either split or with no sign of dressing. This formed a rough west face.

At the top of 001 was a single course of stones, 003, 14cm high and projecting out some 10cm from the line of 001 below. The external face of 003 featured a vertical face at the top, above two $\frac{1}{4}$ roll moulds both 5cm high and separated by a right angle arris.

The stones of 003 were somewhat weathered and carried much evidence for chemical blackening but were very finely dressed and preserved much evidence for fine vertical tool marks. All were fine grained pale grey sandstone.

Above 003 was a series of 9 large blocks numbered 004. These were all set back slightly (6 to 9 centimetres) from 003, and featured 9cm high vertical strip around their bases, above which they sloped inwards for their top 21 centimetres.

The masonry of 004 was highly weathered and covered in lichens, but could be seen to be made up of coarse grained sandstones, some carried traces of fine vertical tool marks. As chimney RC06 is still in use as a vent the modern capping (005 and 006) was not removed, so the flues within it have not been seen.

The roof ridge running into the east face of RC06 was capped by a stone ridge tile numbered 011. This was in the usual style for the Palace, with a $\frac{3}{4}$ roll mould 15cm wide along their top, and sides sloping away at 45 degrees from this. At the base of the slates under 011 two small areas of E/W walling were noted, built against the east face of 001. These were numbered 009 to the north and 010 to the south.

CHIMNEY RC06 INTERPRETATION

The bulk of this chimney is a single build, and there seems no reason to doubt that this is Palace period masonry. Its masonry has survived in better condition than RC05, RC09 and RC11, but RC06 must be the most sheltered of the major early chimneys. RC07 seems to be comparable in terms of preservation, again explained by its sheltered location. Some repairs have been carried out to RC06 (most recently in 1991), but these are just minor patching.

Like the other Palace period chimneys there is a certain economy to the quality of the masonry employed. The base of the east face, which is hidden behind the roof of the east range, is much rougher than the ashlar build used elsewhere.

The top of the chimney is elaborately moulded, and seemingly very similar to that on RC11, although here it is so weathered that its details can be indistinct. In the case of RC11 it will be argued that this is a genuine Palace period chimney capping, however the example on RC06 seems too fresh, with tool marks preserved. This is likely a copy, perhaps of the 19th century, of what was here before. This may indicate that this was a Palace style of chimney capping, perhaps once more widespread.

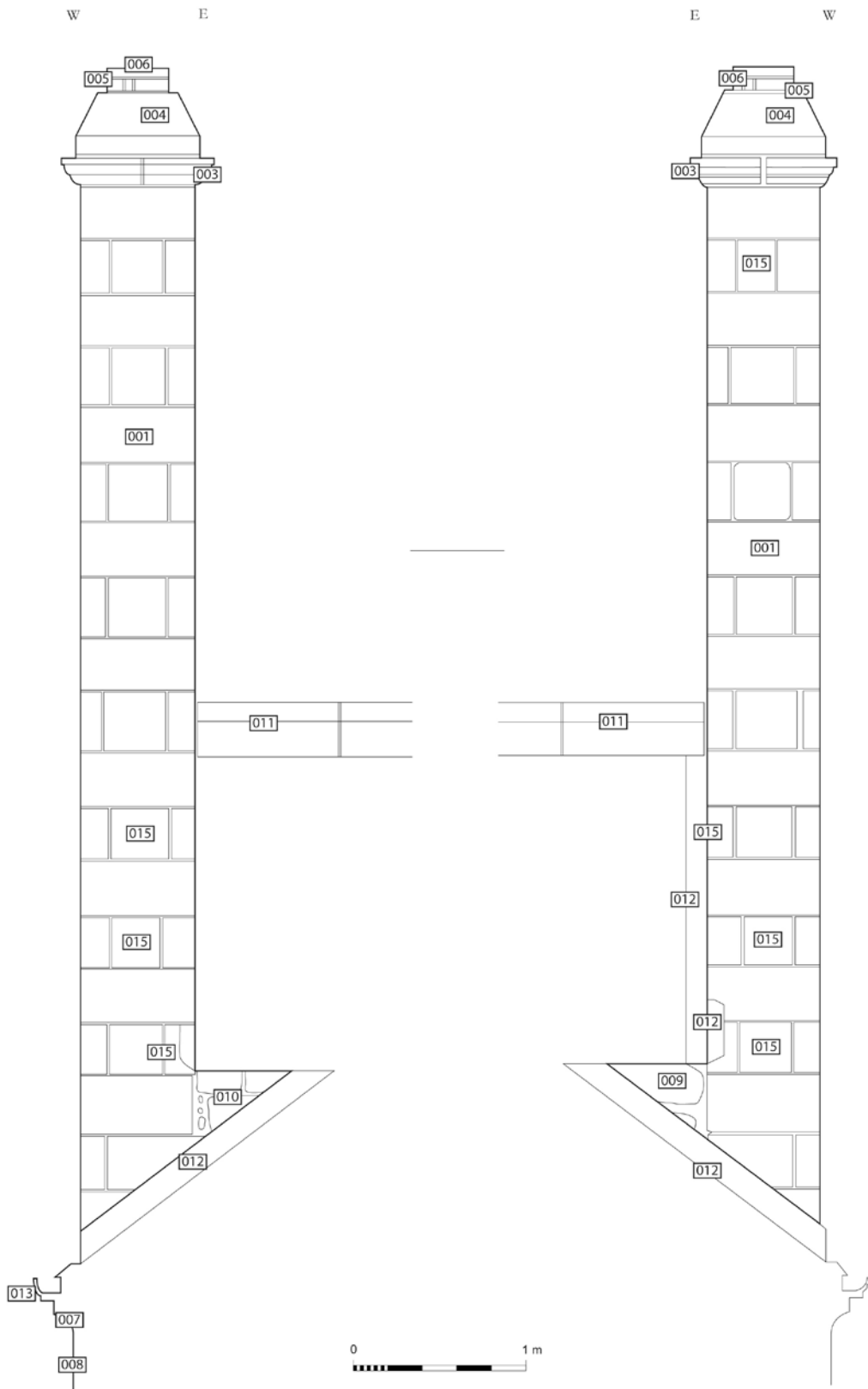


Figure 14: Chimney RC06, southern elevation (left), and northern elevation.

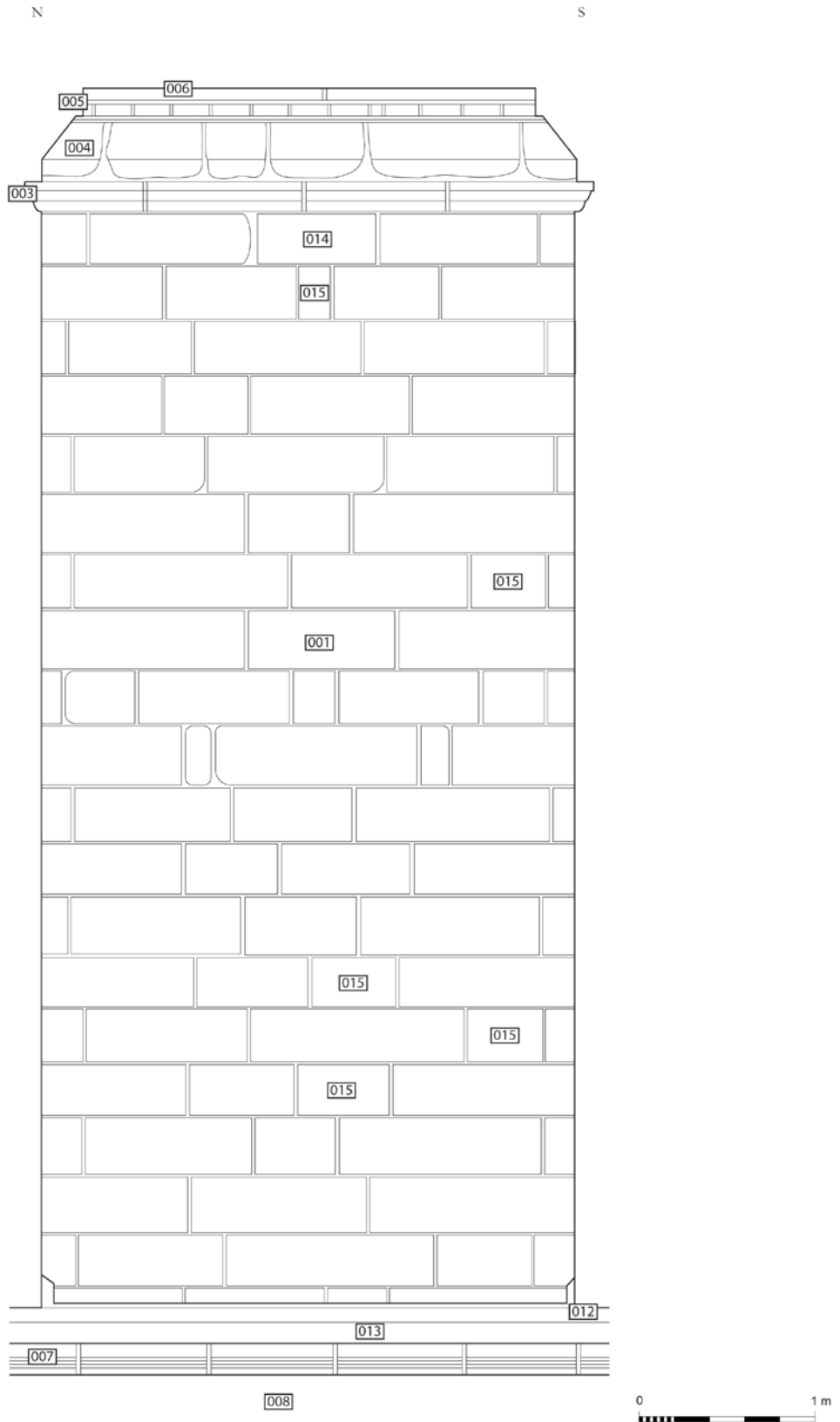


Figure 15: Chimney RC06, western elevation.

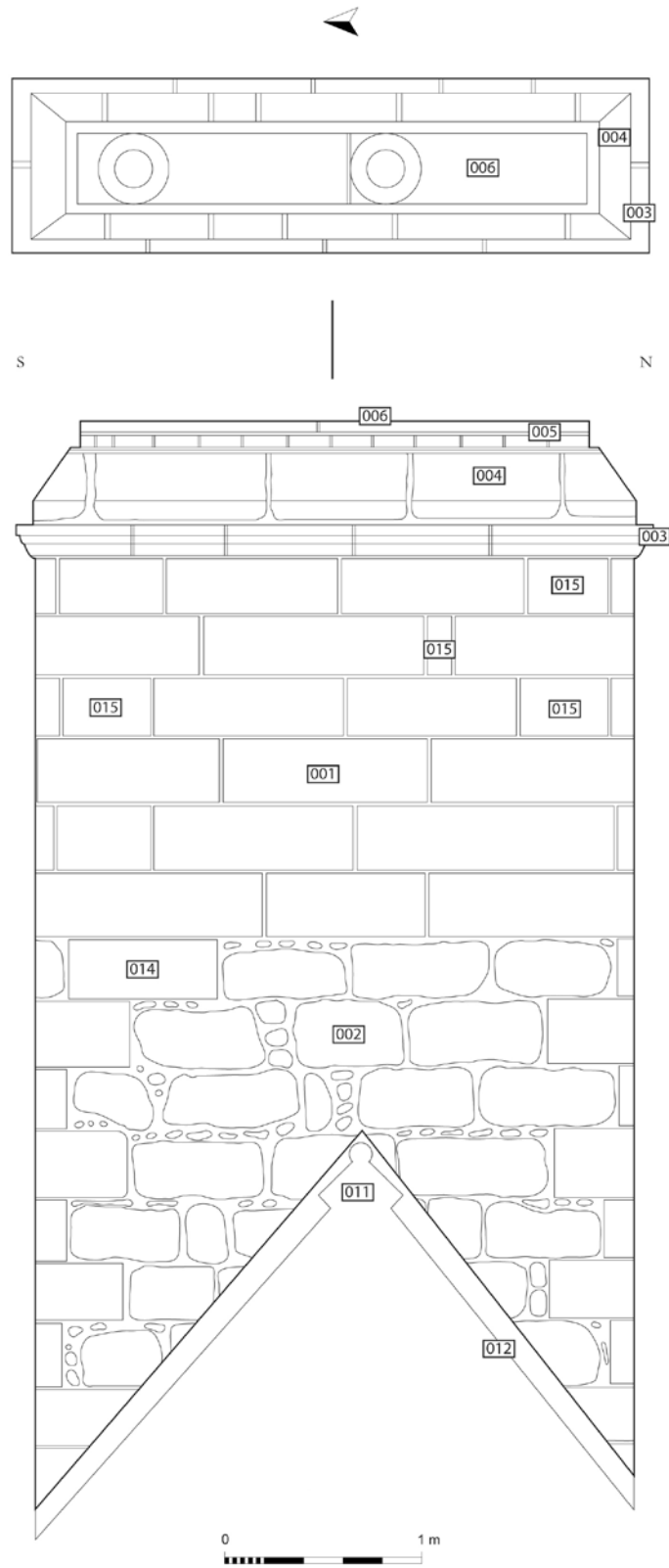


Figure 16: Chimney RC06 plan (top), and eastern elevation.

CHIMNEY RC07

This chimney was located at the junction of the east and south ranges of the Palace. It was orientated E/W and rose up to the west of the main roof line of the east range, meaning that the pitch of the roof rises to the east making the west face of RC07 the tallest. It reached a maximum height on this side of 6 meters, and measured 65cm N/S by 3.05m E/W.

There were four levels of scaffolding platforms built around RC07, but these varied in their extent. Only the top level allowed access to all four sides of the chimney, with the two below this not running around the east end. The bottom platform only allowed access to the west face. Only the south and west faces of RC07 were drawn.

There is a single fireplace on the Principal level of the Palace that uses RC07 as its flue. This is located in the Queen's Bedchamber (P: 07), towards the west end of the north wall of the room. Based on its orientation this wall is thought to be a relic of an older structure recycled into the Palace's build. Little of this wall can be seen, so it is unknown if this fireplace also predates the Palace or is inserted during its construction, but the Queen's Bedchamber surely had a fire within it, so it must at least date to c. 1540.

On the Upper floor of the Palace fireplaces are known to exist on either side of the wall that RC07 rises from. The room to the north is U: 15, while that to the south is U: 20. Due to the presence of historic surfaces across the walls of these rooms their fabric has not been examined meaning that it is unknown if these fireplaces are original or later inserts.

Two builds made up the bulk of RC07: rougher masonry 001 and ashlar blocks 002. 001 occupied the bottom 2.85m of the south face of RC07, the equivalent of the basal 9 courses of 002 (which continue to provide the quoins at the west end of the south face)

All the stones of 001 were sandstone, mostly coarse grained and a mix of pale yellow and pale grey in colour (some were banded to include both colours). There was only very rough coursing to the stones, yet they still formed a good south face. Most were roughly shaped rectangles in a variety of sizes, often carrying evidence for coarse tool marks on them. One fine grained pale grey block within this build was well finished.

Above 001 on the south side of the chimney, and making up the bulk of its build elsewhere was 002. This consisted of up to 16 courses of high quality ashlar masonry standing 5.15m high (and this could be seen to stand to a total of 5.4m behind lead flashing 007 at its base).

The individual courses of this build averaged 30cm in height, while there was considerable variety in the

length of stones. At the shorter east and west ends the stones of different courses alternated orientation, so that every second course a single stone crossed the face. In the longer sides the stones were typically 70- 90cm long, but as little as 15cm and as long as 1.05m was recorded.

The masonry of 002 was blackened through chemical weathering, and was fairly eroded, but all were coarse grained sandstone blocks. These were either pale yellow or pale grey, with a tendency to use more yellow stone lower down the chimney, most obvious on the north face. Faint traces of diagonal tooling were preserved on some blocks, and they were clearly all well shaped.

Capping 002 was 003, a single course of moulded stones 14cm high that projected out some 12cm in all directions. Running around the external face of this build was 'chequerboard' moulding consisting of two levels of raised bosses with curved undersides. Each boss was 8cm wide and 4cm high, separated by a gap of the same width. At the top of these was a short (3cm high) vertical face, above which was a flat upper surface that build 004 sat directly on.

The stones of 003 were much blackened through chemical deposition, but were relatively free of erosion and lichen, and all could be seen to be fine grained pale grey sandstone. Much evidence for fine vertical tool marks was noted across their faces.

In two discrete areas of the south side of 003 stones were awarded different context numbers as there seemed to be small, but significant differences in their treatment and preservation. 014 to the west comprised two short (20 and 21cm long) stones, while 015 was a single longer (5 centimetres) one.

While the individual bosses of 003 were consistently 8cm wide in both 014 and 015 they varied from 6- 8 centimetres. As a consequence of this individual bosses often do not exactly match the spacing of those below. As well as the blackening of the stones noted for 003 these three stones were more eroded and lichen covered. No traces of tool marks were noted on them either, although geologically they seem similar to the stones of 003.

Above 003 was a single course of large blocks 004 set back slightly (7 centimetres) from 003's line. This comprised 17 stones 32cm high, whose basal 8cm is vertical, above which they sloped inwards towards their tops. All were weathered (chemically and physically) so didn't preserve any tooling, but clearly they had been carefully shaped. All the stones of 003 seemed to be coarse grained pale grey sandstone.

The fireplace in the Queen's Bedchamber is still open (although not functioning as a hearth) and the room is fully open to the public. As a consequence of this at the time of writing the upper modern builds (bricks 005 and Caithness flagstones 006) have not been removed as this would entail closing off part of the Palace. This means that the flues presumed to run through 004 have not been examined.

A lightning conductor (017) ran down the west face of RC07, and three small iron hoops (011; 012 and 013) of unknown function were recorded near the top of the chimney. A small area of damage (009) and its infill (010) were noted in the eastern of the two stones making up 014.

CHIMNEY RC07 INTERPRETATION

The majority of RC07 is a single build that seems likely to be original to the Palace's construction. Like other Palace period chimneys high quality ashlar masonry has been used for the visible faces, while low down in the south face, hidden by the south range, lower quality masonry is used.

The capping to the chimney suggests two phases of repair to the top. The form of chequerboard moulding employed is also seen in chimneys RC04 and RC14, where it is suggested to be 18th century in date. This suggests that this most exposed area was repaired some two hundred years after the chimney was built.

The freshness of most of the decoration at the top of RC07, with tool marks still visible suggests that this in turn has been repaired. A 19th or perhaps early twentieth century date seems most likely for this.

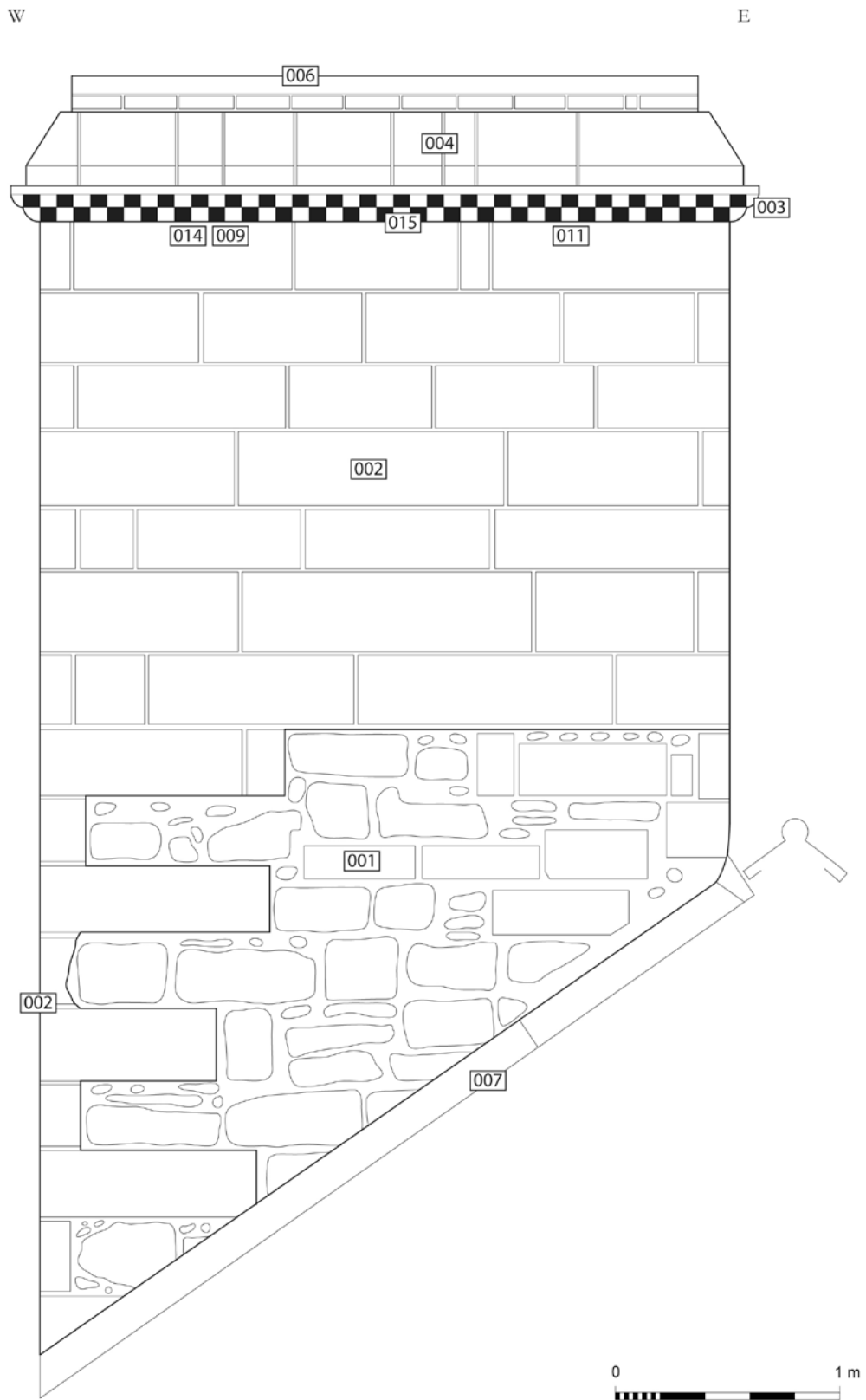


Figure 17: Chimney RC07, southern elevation.

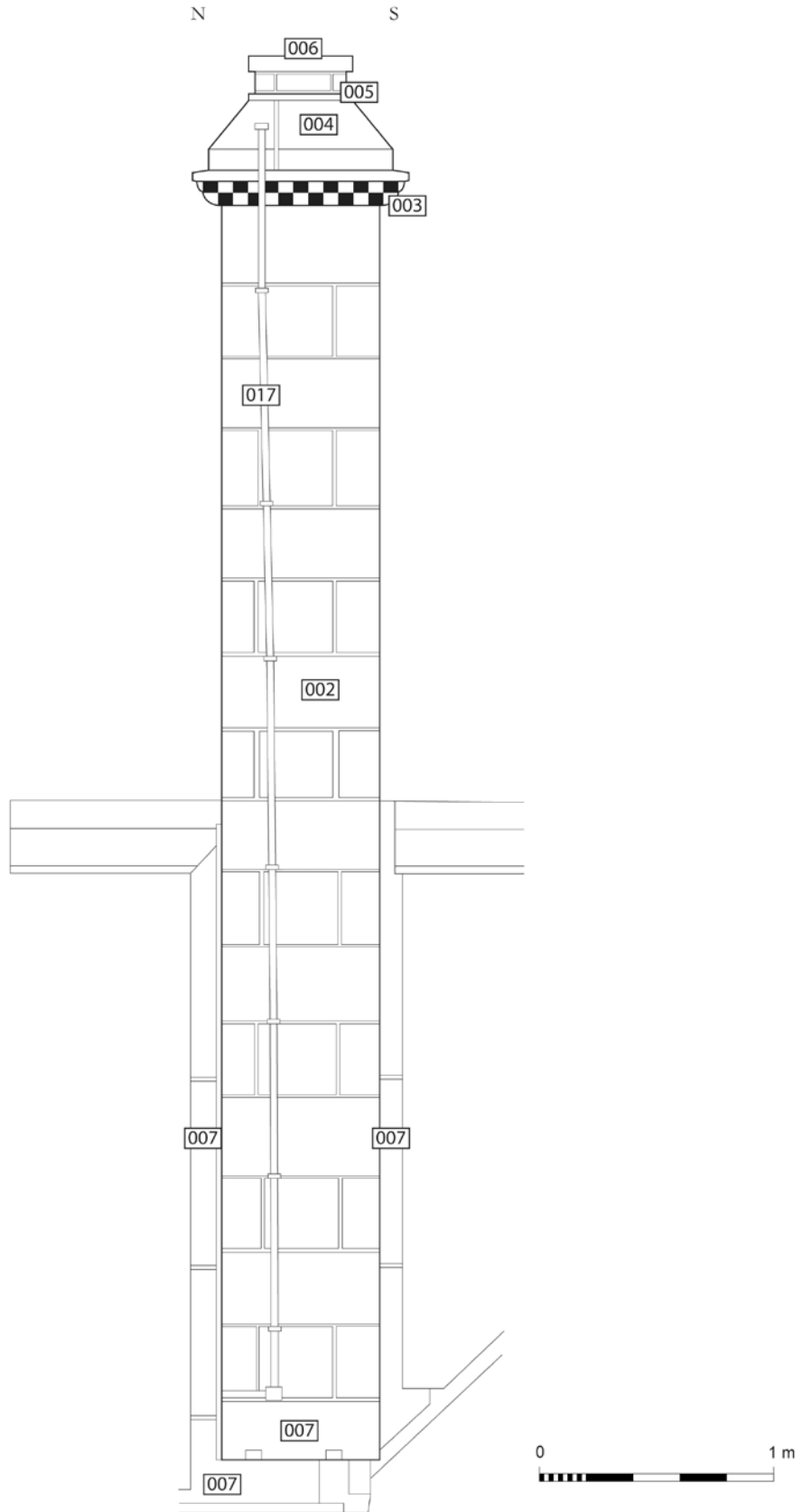


Figure 18: Chimney RC07, western elevation.

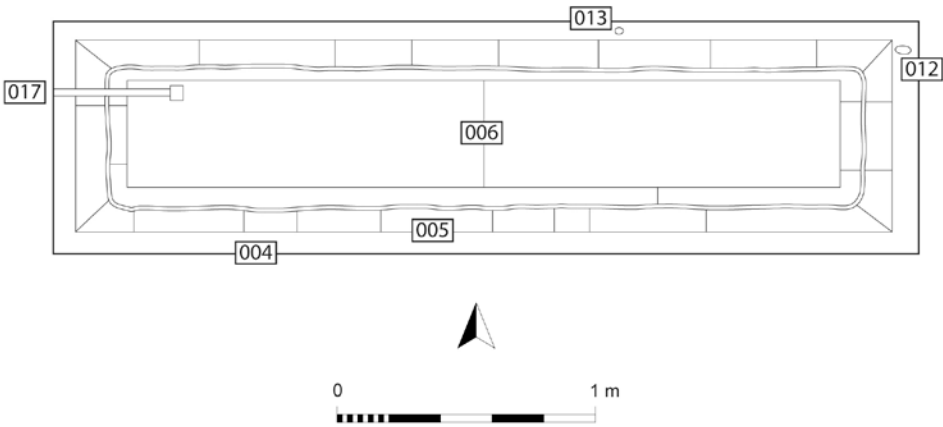


Figure 19: Chimney RC07 plan.

CHIMNEY RC08

This chimney was situated towards the east end of the south range of the Palace, slightly off centre to the south of the ridge tiles that mark the apex of this roof. It measured 3.15m high and was 60cm E/W by 1.2m N/S. Two levels of scaffolding platforms allowed full access to most of RC08, only the very base was hard to examine, but still accessible.

RC08 rises from the wall separating the Queen's Bedchamber (P: 07) from the Queen's Inner Hall (P: 09) on the principal level of the Palace. There are no fireplaces in this wall on this floor, but it is thought to be a recycled part of a building pre-dating the Palace. On the upper floor there is a fireplace known on the west side of this wall, in room U: 04.

A single build, 001, made up the bulk of all four sides of RC08. This consisted of high quality ashlar masonry standing 8 courses (7 in the north face), some 2.9m (and 3.2m including the area behind lead flashing 009) high. The courses varied from 29- 31cm in height, and individual stones went from 32cm to 1.20m in length, some were as little as 15cm thick.

The stones of 001 were all weathered, physically and chemically, but evidence for coarse diagonal tool marks were preserved on some of them. All were coarse grained sandstones; mostly pale yellow but including two pale grey blocks; both of these were small stones in the short ends of 001.

The masonry of this build was laid in alternating orientations such that a single stone crossed both long faces above a course where one crossed the shorter ends. This was only interrupted low down in the long sides where two stones on each face stood out and are possibly replacements; 002 to the east and 003 to the west.

As well as deviating from the coursing of the main build both 001 and 002 were noticeably taller at 38cm high and consisted of pale grey finer grained sandstones. Finally the evidence for tool marks was much clearer and more abundant on them than was the case for 001.

At the top of build 001 was a projecting course 004 that stood 15cm tall and measured 75cm E/W by 1.35m N/S. This meant that it projected out some 7cm in all directions from the line of the masonry above and below it.

004 was made up of 4 heavily weathered (chemically and physically) stones that were obscured by the growth of lichen and moss across them. Traces of fine droving survived on the underside of the projection of 004, all the stones were pale grey coarse grained sandstone.

Over the top of 004 was a single course 005 that returned to the line of the main chimney build 001. This consisted of 2 stones 14cm high that were heavily eroded and lichen covered, but clearly well shaped originally. Both were coarse grained pale grey sandstone blocks.

At the time of writing the modern Caithness flagstone capping 007 and its support 006 had not been removed from the top of 005. This means that the flue or flues within RC08 have not been examined.

The ridge tiles running along the top of the south range of the Palace ran up against the longer sides of RC08, these were numbered 010 to the east and 019 to the west. While both were typical examples of the type, with a $\frac{3}{4}$ roll moulding along their tops and sloping sides, the freshness of the stones and deep broad diagonal tool marks indicated that these were replacement stones.

A lightning conductor 008 ran down both the east and west faces of RC08. Small broken off copper pins were noted adjacent to 007: two (012 and 013) in the east face and three (015, 016 and 017) on the west side of the chimney. Narrow linear 'scars', visible in the chemically derived blackening of the stones of RC08 ran between these pins (014 to the east and 018 to the west.)

CHIMNEY RC08 INTERPRETATION

Chimney RC08 seems to be basically of a single phase, with some later limited repair work. This chimney is not depicted in Slezer's illustrations of the castle, yet is shown in a view by Paul Sandby from 1753. This might suggest an early 18th century date for this chimney.

The capping of the chimney, a simple projecting course, is commonly seen across the Palace and indeed the castle. Elsewhere this has been thought to be a typical 18th or 19th century device, supporting this late dating for RC08.

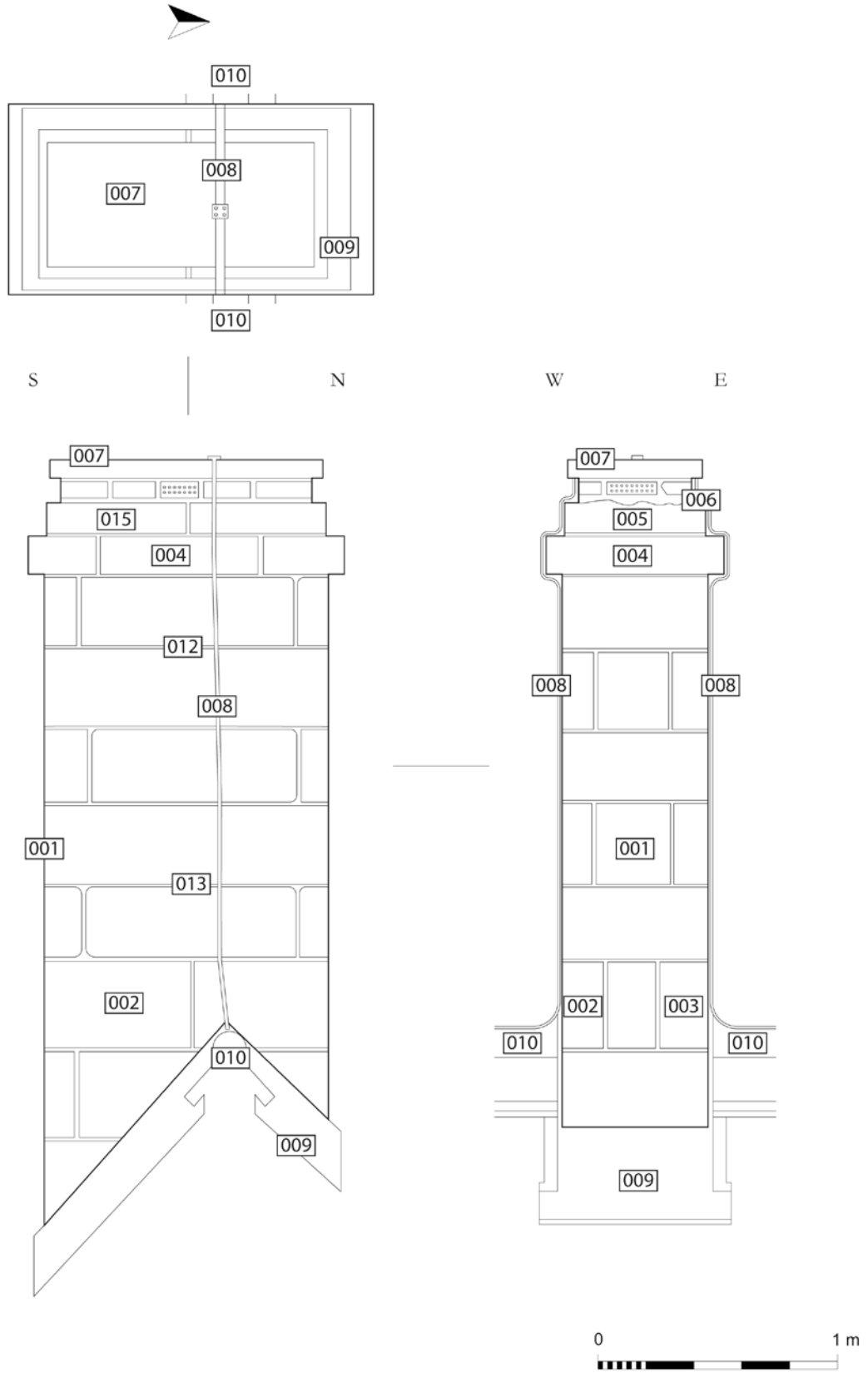


Figure 20: Chimney RC08 plan (top), eastern elevation (left), and southern elevation.

CHIMNEY RC09

RC09 was situated at the extreme east end of the north wall of the south range, actually above the west wall of the low range on the west side of the east range. This chimney was a total of 7.5m high, and for its bottom 5.4m it measured 1.35m N/S by 4.08m E/W. Above this it sloped in to both east and west before becoming vertical again, meaning that the top 1.3m above these shoulders is of a reduced length of 2.45m E/W.

There is a fireplace that utilises this flue in the Queen's Inner Hall (P: 09) situated at the east end of the north wall of this room. On the upper floor a plan dated 1733 shows a fireplace that presumably also utilised RC09 as a flue. There has been some alteration of the rooms here since this plan was made; this fireplace would probably be in the north wall of what is now U: 27A.

The major build of this chimney was high quality ashlar masonry 003. This made up almost the entire of the north and west faces below the shoulders of RC09. On the east face it made up the basal 6 and the top 2 courses, being replaced by 011 and 012 between these areas. On the south face 003 only made up the quoins, with rubble build 013 between these.

On the highest north side 003 stood 20 courses (5.3 meters) high, with individual courses varying from 27 to 30cm in height. Stones within this build averaged 50cm long, but this could vary from 6 to 75 centimetres. A number of small sandstone pinnars were used low down in the west face; this was not repeated elsewhere.

Context 003 was heavily eroded, especially on its west side, but its stones were all coarse grained sandstones, pale yellow in colour except for a single pale grey example on the west face. Possible faint traces of diagonal tool marks were noted on the north face.

Running below the north face of 003 was a single course of carefully shaped stones laid horizontally, 002. This consisted of 6 stones and was 3.4m long by 17cm high. On their north faces the upper 8cm was vertical below which they curved in to the south for some 8 centimetres.

The stones of 002 were weathered but all were fine grained sandstone, mostly pale yellow, but with a single dark yellow example which was significantly more eroded than the others. While clearly well shaped, no traces of tool marks were noted.

Context 003 directly above 002 had been truncated by cuts 006 to the east and 027 to the west (see below). While 002 ended smoothly it is likely that these cuts have damaged it as well, but that whole stones have been removed, leaving neat ends. To the east 006 was also cut through 001 below 002,

making it extremely likely that this cut had also damaged this course. To the west the line of 002 continues on the far (W) side of 027, running around the Lion's Den, although here it has been clawed back, removing its moulding.

Below 002 was 001, the north wall of the south range of the Palace. Immediately below RC09 was 001, random rubble build, principally composed of dolerite, but including some small yellow sandstone fragments. This was set back some 8cm from 003 (with the curve of 002 reflecting this change), and formed a fair north face.

As noted above 003's build was interrupted on the east face of RC09 for 2.35 meters, continuing above and below this area (and continuing to provide the quoins at the north end of this area). The intervening space was filled by two builds: quoins 011 at the south end and 012 between them and 003.

011 comprised a series of 8 large rectangular sandstone blocks running vertically up the south-east corner. They varied from 25 to 38cm high, with the largest measuring 50cm N/S by 35cm E/W.

The stones of 011 were badly weathered but all seemed to be coarse grained and pale yellow in colour, with no surviving tool marks. They had clearly been well shaped to give a good east and south face, but they often had ragged uneven ends. This and their greater variability in size marked them out from 003, but most obviously they don't continue the coursing of that build, which can be seen to continue both above and below 011.

The narrow strip on the east face of RC09 between 003 and 011 was infilled by 012. This was an area of random rubble build, mostly crudely shaped rectangular blocks, but including some which were completely unshaped. The stones were mostly sandstone in a variety of colours and textures, but included some dolerite and at least one slate.

On the south face of RC09 the ashlar masonry of the west face (003) and east face (a mix of 003 and 011) formed the quoins, and sandwiched an area of random rubble 013. This featured a variety of stone types; the majority were sandstones, but also including some dolerite chunks. The sandstones were mostly coarse grained and pale yellow in colour, but included some finer grained and some pale grey stones. There were also a few examples of very pale grey, almost white, fine grained, laminating sandstones.

Most of the stones of 013 were at least roughly dressed; some were fairly well shaped rectangular pieces. Traces of heavy tooling were observed on some stones. Dimensions for 013 are hard to give, as it merged into 014 (described below), but it probably originally stood 3.55m high.

Evidence for a repair to the south face was recorded as build 014. This was principally identified as two long sloping cuts (033 and 034 described below) that are thought to have run across the base of the south face are intermittent due to this later alteration.

Context 014's masonry was partially obscured behind and below scaffolding, and was hard to differentiate from 013, but it seemed to basically occupy a rectangular strip 1.5m high along the base of the south face of RC09. The stones of 014 were roughly coursed and used more regularly shaped blocks than was the case for 013.

Above these various builds RC09 sloped in, with the area of these shoulders being awarded 4 different numbers: 015 for the sloping masonry of the west face; 016 for that of the east face; 017 for the connecting build of the north face and 018 for that of the south face.

All these builds were three courses high, standing 84 centimetres. The shoulders at each end sloped in towards the centre of the chimney and were formed by large, carefully shaped blocks of medium grained sandstone, mostly pale grey but including some pale yellow in colour. Although weathered and covered in lichen and moss, traces of vertical tool marks were noted on some of the stones of both 015 and 016. The connecting walls 017 and 018 were built from large blocks, typically some 90cm long, but this could vary from 25cm to 1.4 meters. These were again weathered, but were geologically similar to 015 and 016's masonry. The north face 017 preserved much evidence for vertical tool marks, none survived on the south face 018.

While the east end of these shoulders was flush with the builds below, the west end was disjointed. The north-west corner of 015 was 3cm south of the north-west corner of 003, while 015's south-west corner was 4cm north of the equivalent corner of 003.

At the top of the sloping shoulders was a vertical build 019: three courses of ashlar masonry that ran around all four sides of the chimney. The courses varied considerably in their height, with the top course being 32 centimetres, the middle one 24cm and the basal one 37 centimetres, their combined height was 97 centimetres.

Individual stones within 019 were typically 50 to 60cm long, but varied from as little as 15cm to 1.12m and from 14 to 22cm thick. The stones were weathered (chemically as well as physically) and had some lichen cover, but all seemed to be fine to medium grained sandstones, mostly pale grey, but including some pale yellow. A handful of stones preserved evidence for fine vertical droving.

Above 019 was a single horizontal course of stones 020 that projected out some 5cm in all directions from 019 and 021 above it. 8 stones made up 020; 5 in the north face and 3 in the south face. Overall they measured 15cm high, 2.58m E/W and 1.36m N/S. The largest stone in the south-east corner measured 1.13m E/W by 25cm N/S, while one in the middle of the south face was only 26cm long.

The stones of 020 were weathered both chemically and physically, and covered in lichen. In spite of this they could be seen to all be fine grained sandstones, with one pale yellow example and the others pale grey. Fine vertical droving was recorded on the outer face of some stones.

Above 020 the top (historic) build of the chimney was a single horizontal course 021 that returned to the line of 019. 6 stones made up the south face of 021, 2 the north face and 1 the west. All were 15cm high, the largest stone (SE corner) was 1.15m E/W by 25cm N/S, while the shortest (S face) measured only 28cm long.

The masonry of 021 was weathered (chemically as well as physically) and covered by lichen, but seemed to consist entirely of fine grained sandstones. Apart from a single pale yellow example all the stones were pale grey in colour. Fine vertical droving survived in patches on the outer faces of 021.

The upper surface of 021 was flat, and when the modern flagstone capping 022 was removed a rectangular void some 1.8m E/W by 90cm N/S was exposed in its centre. This void was lined by crude masonry 057, which also crossed the void N/S, splitting it into two separate flues both measuring 40cm E/W by 25cm N/S. The west face of the west flue stepped out to the west some 1.3m down, while the east face of the east flue steps out to the east some 1.2m down, while all the other faces were vertical.

The principal material used for 057 was crudely shaped sandstone blocks; but some apparently handmade bricks 20cm long and 6cm high were also used. Scraps of pale yellow sandy mortar 060 up to 1cm thick were observed lining the inside of both flues. In places this seemed to preserve a rough outer surface.

Numerous small cuts and repairs were recorded across RC09, all of which were assigned context numbers and plotted graphically. For the sake of clarity the alterations in only the three most significant areas will be described here: those below the chimney on the north side; those low down on the west face of 003 and those low down in the south face of RC09.

Two cuts were recorded below the chimney on the north face: 006 to the east and 027 to the west. 006 truncated the east end of the bottom two courses of 003, as well as palace wall 001 below this. String course 002 ran between these builds, and ended abruptly, this has presumably also been truncated, but the removal of a whole stone has left this with a neat end.

Context 006 had been used to insert a window within room U: 23, represented by lintel 004; west margin 007 and east margin 051. The gap around these was infilled by 005, which ran significantly further to the east than the window, acting as an equivalent to the raised wall head elsewhere in the Lion's Den.

At the base of cut 006, immediately east of the window, two highly eroded coarse grained pale yellow sandstone blocks were recorded as 052. These were mostly obscured by lead flashing 053, and probably continue to the east. The two stones were both had flat tops, although at different heights, with that to the west 15cm lower than the other one.

Cut 027 was used to insert, or perhaps alter the window in room U: 26, represented by lintel 025 and margin 026. Although inaccessible, 027 definitely cut 003, removing perhaps a 10cm wide strip at the west end of its bottom two courses. Like 006 it is unclear if 027 cut through string course 002, which ended neatly; unlike 006 it did not seem to cut into 001, the north wall of the south range of the Palace.

On the west side of RC09, low down in build 003 three cuts were recorded: 041; 043 and 045. 041 was a short vertical cut, 38cm high, 10- 12cm wide and 5cm deep. It had a near vertical north edge, and a gentler south one, while its base was reasonably flat and its top was curved. There was much evidence for coarse tool marks in 041, and it was located 4- 5cm south of the north-west corner of RC09, while its top was adjacent to the north end of 043.

Both 043 and 045 were closely matching narrow linear horizontal features, with 043 some 45cm below 045. They each ran from the south-west corner of RC09 N, and both stopped short of the north-west corner. 043 measured 1.05m long by 12cm high, while 045 was 1.15m long by 11cm tall and could be seen to be some 10cm deep in the south face. Both were infilled (by 042 and 044) with a series of fresh looking rectangular sandstone blocks.

On the south face of RC09 three cuts were recorded: 031; 033 and 034. 031 was positioned centrally to the south face of the chimney, and had a flat top and vertical sides, with a curving base. It was cut through two of the stones of build 013, and measured a maximum of 20cm high by 18cm wide. 031 had been filled in by a series of small sandstone chunks, numbered 032. This ran out of the cut to the E, between the stones 031 was cut through, and merged with apparent repair 014.

Below 031 were two sloping linear cuts, 033 to the west and 034 to the E, which were discontinuous, being apparently interrupted by repair 014 to this face of the chimney. Both were best preserved at their bases, where both cut through the bottom two courses of the quoins 003. Unfortunately the base of the south wall was below the lowest scaffolding platform, making direct measurements impossible.

Contexts 033 and 034 both sloped up at an angle of roughly 45 degrees towards the centre of the chimney. Above the quoins these cuts were only intermittently traced cut into masonry 013, but both sloped up so as to meet just above 031.

The base of cut 033 seemed eroded and was perhaps 15cm wide by 7cm deep, its length (although interrupted) was some 2.7 meters. The bottom of 034 was well preserved and retained traces of coarse, crude tool marks. It was some 10cm wide by 4 to 5cm deep and was traced for roughly 2.4 meters.

A lightning conductor 024 ran down the south face of the chimney and a series of broken off copper alloy pegs (047, 048, 049 and 050) were recorded to the immediate east of 024. These doubtless held an earlier lightning conductor in a similar position.

CHIMNEY RC09 INTERPRETATION

This chimney has two major phases of construction, a possible pre Palace phase and evidence for numerous alterations and repairs. The two sandstone blocks 053 identified to the east of the base of the chimney could represent the start of crow steps at the south end of the east range. The blocks are large and well squared and overlap each other as they rise, but too little could be seen to be certain, as they run behind the roof of the east range.

If these stones do represent crow steps then they possibly predate the Palace construction, as there was no sign of them continuing across the masonry of RC07, on this line to the east. They could relate to the more definitive crow steps identified at the north end of the east range in chimney RC05. If this was the case then it would suggest that much of at least the west side of the east range predates the Palace, right up to the roof.

The bulk of the masonry of RC09 below the sloping shoulders is thought to relate to a single phase of construction. As this serves a Palace period fireplace then this work is likely to date to the 1540's. The ashlar north and west faces are similar to those seen in other Palace period chimneys (RC05; RC06 and RC07), in terms of build and geology. Like these chimneys this high quality masonry is only used where it is visible from below. The entire south face, hidden behind the south range's roof, is random rubble, and the base of the east face is lower quality build than elsewhere.

The shoulders and build above them are near identical to those on RC05, and like them used finer grained pale grey sandstone, rather than the pale yellow typical of Palace period work. This phase is thought to belong to the late 17th century, when the entire Palace roof was remodelled.

As well as these major phases it seems that the top two courses are a rebuild. They preserved evidence for fine vertical tool marks not seen elsewhere on this chimney, and the simple projecting course is the most common chimney capping, suggested to be 18th or 19th century in date.

The scars on the south face suggest that a short roof ridge once ran up to this face, as still seen on RC05 and RC06. The sloping cuts to the side would take the roof line, while the central cut at the top could hold a rafter. The shape of this main cut, with a flat top, vertical sides but a rounded base seems prepared to take a partly squared timber. This proposed roof is likely to date to the late 17th century roof rebuilding or later.

The south face had been refaced, partly erasing these cuts, although the full extent of this repair was hard to gauge. There seemed to have been a fairly major repair to the east face, principally shown by the disjointed nature of the courses here. This may well relate to the repair of the south face.

Three rather enigmatic deep cuts were recorded low down in the west face, close together but not connecting. There was a single vertical cut, still empty and seeming carefully shaped, with a rounded top and one sloping and one vertical edge. Above and to the south of this are the two infilled long narrow cuts.

It is uncertain exactly what the function of these three slots was. Similar features were recorded in a similar position on the east face of RC03. Here they have been reconstructed, making their interpretation difficult, and there are significant differences in the details between these two areas. In the case of RC09 these cuts could in some way relate to the evidence for a roof line that once ran up against the south face, although it is hard to see how.

Two windows were recorded on the north side of RC09, one to either side, and both had cut the fabric of the chimney, showing that they are later. The cut to the west (027) unlike that to the east (006) didn't seem to cut into 001, the build of the north wall of the south range of the Palace. This may indicate that this window is original, perhaps once rising as a dormer into the roof line, but extended upwards in the late 17th century when the entire wall head around the Lion's Den was raised. The eastern window presumably dates to this same period or later.

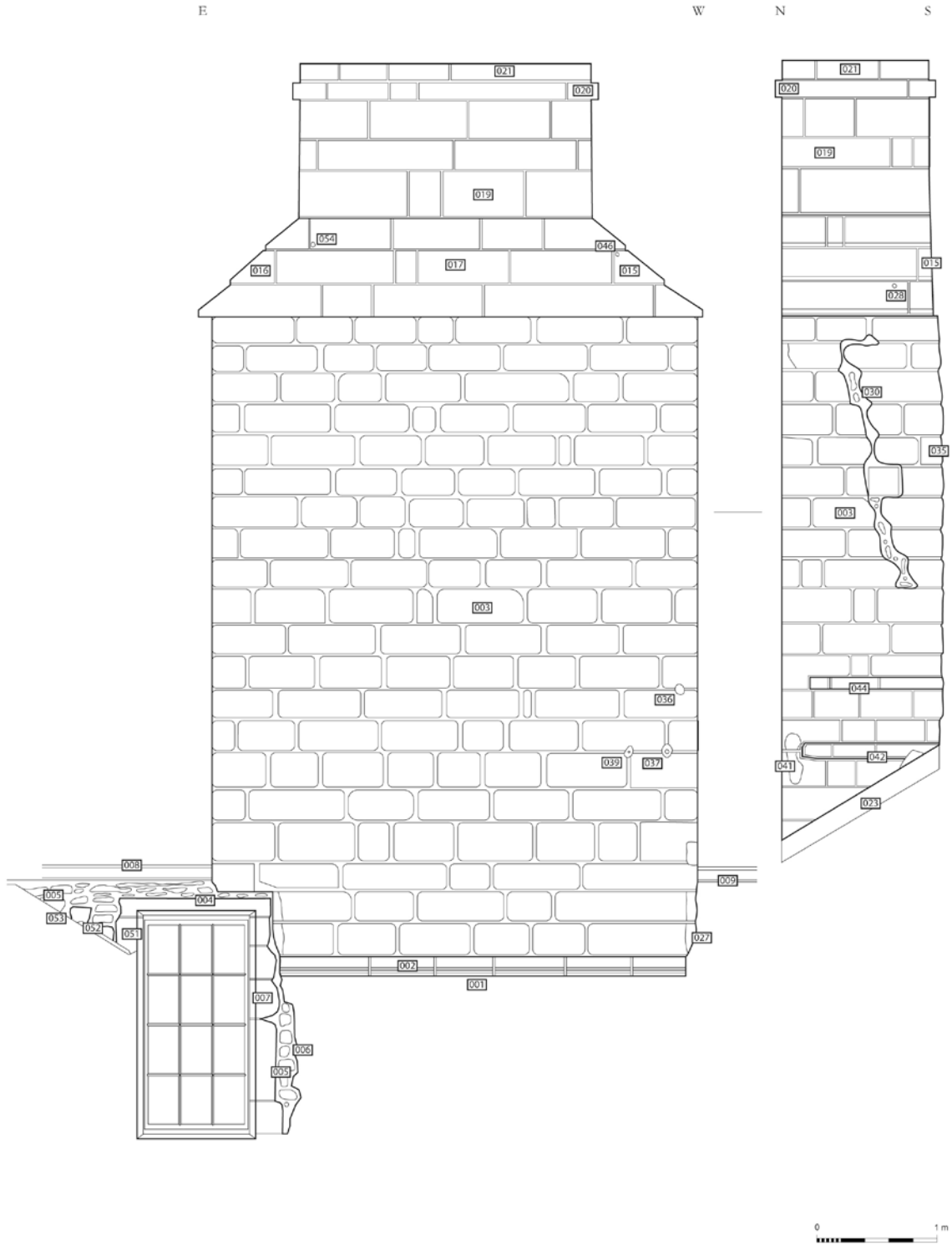


Figure 21: Chimney RC09 northern elevation (left), and western elevation.

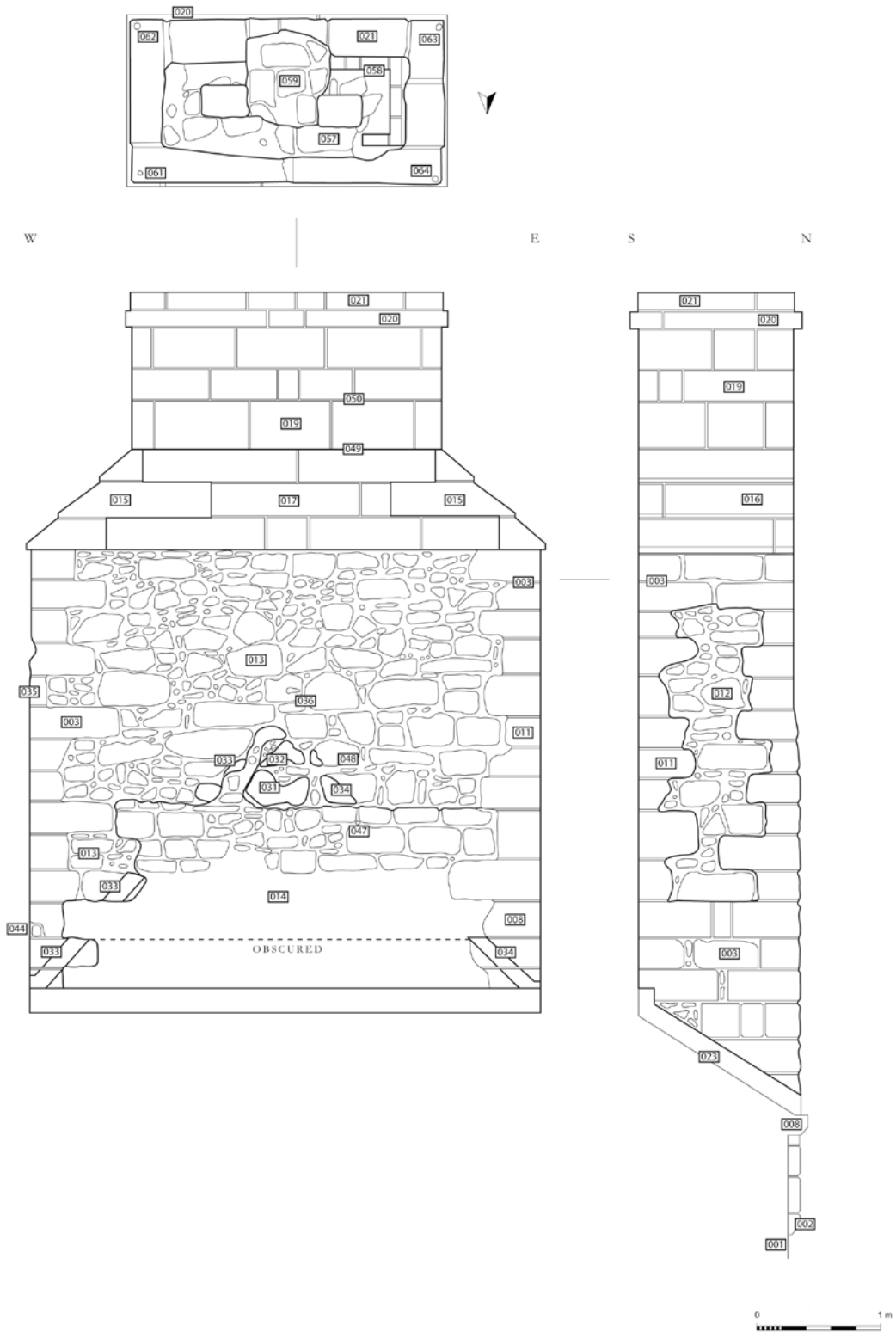


Figure 22: Chimney RC08 plan (top), southern elevation (left), and eastern elevation.

CHIMNEY RC10

RC10 was located on the south range of the Palace, towards its centre. It sat on the apex of the roof, slightly to the south of its midpoint, although the roof line also alters slightly either side of this chimney, with the roof ridge to the west slightly north of the line of that to the east.

RC10 measured 3.2m high, 60cm E/W and 1.2m N/S. It rose from the wall that on the Principal level of the Palace separates the Queen's Inner Hall (P: 09) from the Queen's Outer Hall (P: 11). There are no fireplaces in this wall on this floor, but on the upper floor they are found on both sides of it; in U: 28 to the east and U: 29 to the west.

The bulk of RC10 was made up of a single build 001, ashlar masonry standing 9 courses (2.75 meters) high in the south face and 8 in the N, with individual courses varying from 30 to 32cm high. All the stones of 001 were well shaped rectangular blocks, typically large, but varying from as little as 22cm to 1.05m long, and from 15 to 20cm thick. The shorter north and south ends were built in alternating orientations, so that every second course a single block crossed the face.

The stones of 001 were relatively un-eroded, but were chemically blackened, all seemed to be coarse grained sandstone, either pale grey or pale yellow in colour. Traces of fine diagonal tooling were seen across many of them.

At the top of 001 was a single course of stones 002 that projected out 5 to 6cm from 001 below (and build 003 above it). 001 was made up of 4 stones, all 14cm high and heavily eroded and covered in lichen and moss. All 4 blocks were coarse grained pale grey sandstone, and while no tool marks survived they were clearly well shaped.

Above 002 two stones made up 003, stepping in from the line of 002 to match that of 001. These stood 17cm high, and were badly eroded and covered by lichens and moss, so again preserved no tool marks on them.

When the modern capping to 003 (brick and cement course 004 and Caithness flagstones 005) were lifted two circular flues could be seen running through the top of 003. These were both 32cm diameter, and below 003 they could both be seen to become square shafts. A stretch of E/W walling, 013, perpetuated this subdivision of flues below the stones of 003. 013 was inaccessible, but seemed to be mostly formed from handmade bricks, it was 30cm long by 17cm wide.

Ridge tiles ran up to both the west (008) and east (009) faces of this chimney; both were inaccessible and obscured by scaffolding. A lightning conductor (006) ran down the north face of RC10, and a single square section copper alloy pin (012) was noted in the south face of 001.

CHIMNEY RC10 INTERPRETATION

There only seems to be a single build to RC10, and this may extend to its capping too. Like RC08 this chimney is not shown in Slezer's view of the Castle, but it is shown in a print by Sandby in 1753. An early 18th century date therefore seems probable for RC10.

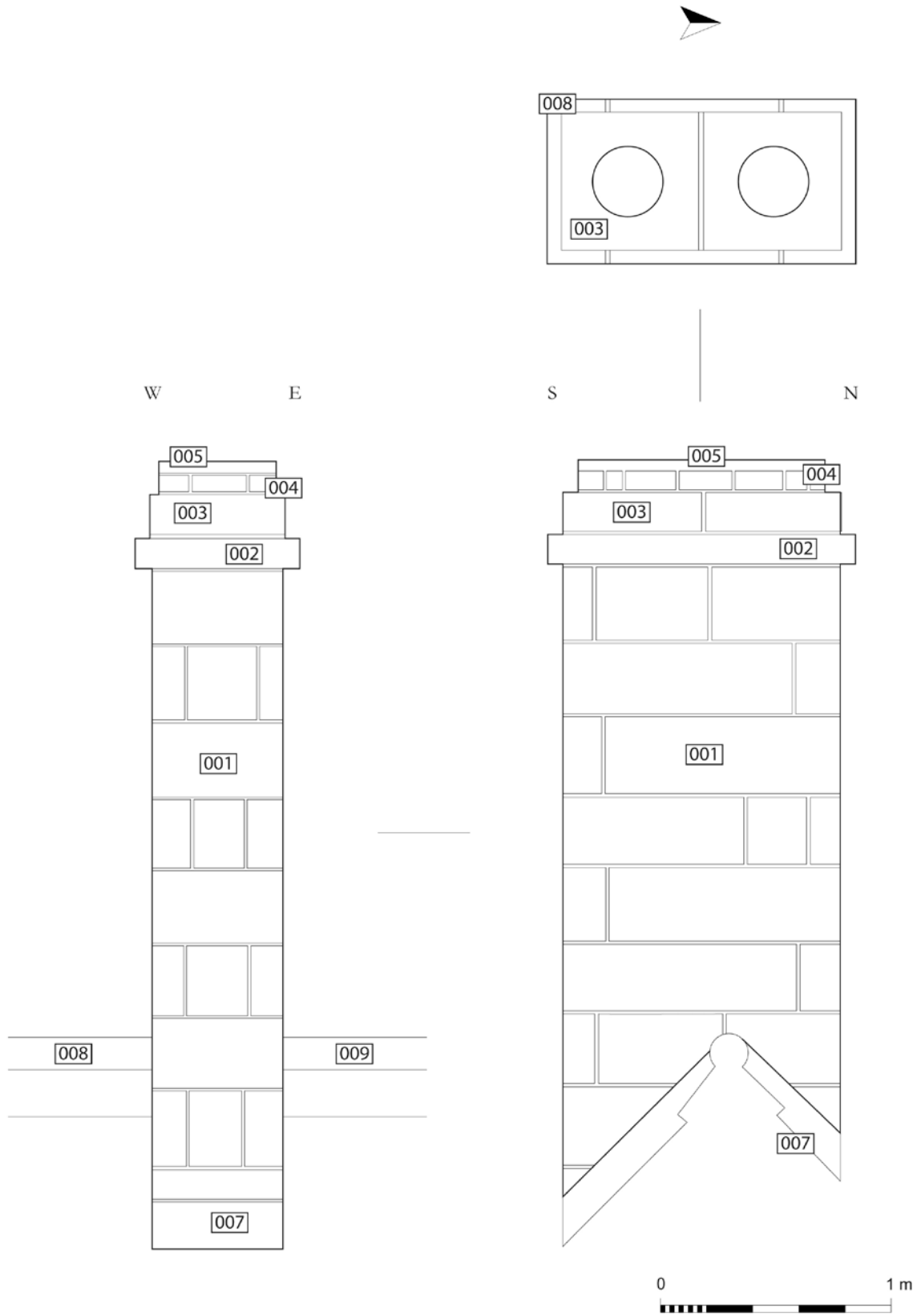


Figure 23: Chimney RC10 plan (top), southern elevation (left), and eastern elevation.

CHIMNEY RC11

RC11 is a large chimney located at the junction of the Prince's Tower and the south range of the Palace block. It is unique among the Palace chimneys in being 'L' shaped, with a large rectangular E/W main block which has a short arm running off to the south at its east end. The main section sits on the south side of the Palace, with its west end in about the same position as the west wall of the Prince's Tower, running east from here to just beyond the roof ridge (centre point) of the Tower. The arm then runs south from here into the area of the Prince's Tower, roughly centrally to it.

RC11 stands a maximum of 6m high and measures 4.6m E/W at its top. It has slight shoulders at differing heights on its east and west sides, increasing it to 4.8m at its base. It measured 1.6m N/S, except at its east end where the arm 1.5m wide ran south for a further 58 centimetres.

Two levels of scaffolding, and the access provided by the Prince's Tower wall head walk, provided reasonable coverage of the south and east faces of the chimney. However the base of the north and particularly the west face were extremely hard to record, or even make sense of.

A complex sequence of builds was recorded, typically restricted to a single face, until a single elaborately moulded projecting course, 021, capped the entire chimney. The different lower builds will be described first, starting with the east face, until 021 is reached, the uppermost builds will then be described at the end.

Running into the east side of the south-east corner of RC11 was 016, the parapet wall to the Prince's Tower. This rose in a series of five broad crow steps towards the chimney, and was capped by a triangular section series of coping stones (015), it contains a small blocked window (not numbered in this project) towards its west end.

Context 016 measured 2.75m long and a maximum of 2.45m high at its west end but only 30cm thick. Little continuous masonry could be seen, but it seemed to be roughly coursed, principally using coarse grained pale yellow sandstone, but including some dolerite.

Projecting north from the extreme west end of 016 were two narrow strips of masonry 040 and 041. 040 was built using two large stones and projected slightly further east than 041 which was constructed from six smaller stones, but both projected 17cm north of the line of 016. Both were built using coarse grained yellow sandstone that although eroded had clearly been well shaped. If these were part of the same build their combined height was 2.42 meters.

Context 041 was interrupted by a cut, 042, that seemed designed to key in a particularly large stone of build 039 to the N, demonstrating that it is later phase of construction. 039 was a random rubble build, a roughly equal mix of sandstone and dolerite that stood some 1.6m tall.

Context 039 filled the area between 041 to the south and a series of pale yellow sandstone quoins 012 to the north which formed the lower part of the north-east corner of RC11. There were seven of these in total and although eroded they were clearly well shaped large blocks.

Context 012 stood 1.82m high, taking them above the top of east face masonry 039, and into different build 017, indicating that all three are contemporary. 017 differed from 039 in being roughly coursed and using less dolerite in its makeup, with a probable reused stone 044 towards its base.

At the top of 017 was a single thin rectangular slab 005 laid horizontally. This stone measured 1.32m N/S by 43cm E/W, but was only 8cm thick. 005 projected out some 3cm east of 017 below, but was parallel with it. 005 was squint to the build above it, 002, so that at its north end it is 11cm east of 002, and at its south end only 7 centimetres.

The extreme south end of 005 seemed to have been cut away (by 045) and replaced by a single well shaped block 013 and a small area of infill 014 below it. This also ran round to represent the lowest build at the east end of the south face of the arm of the chimney. 013 and 014 were at the same angle as the upper build 002, and squint to the lower builds of the east face described above.

The top build of the east face below projecting course 021 was 002; eight courses of ashlar masonry standing 2.28m high and forming the quoins of the top of the north-east and south-east corners of RC11. The courses varied from 26 to 30cm high; except for the top one that was only 15cm in height.

Individual blocks were well shaped, typically 50 to 60cm long, but up to 87 and down to 23 centimetres. The stones were weathered and chemically blackened, but all were coarse grained sandstones, typically pale grey in colour, but including some pale yellow. This build is heavily pock marked by apparent bullet impact craters, given the generic number 038.

Build 002 continued round into the south face of the south extending arm of RC11, and here the west ends of the stones were irregular and broken off. Much of this was caused by a series of cuts (especially the three largest: 063; 065 and 067), but they seemed broken off away from these, and it seems likely that 028 to its west is a repair.

Context 028 took the form of a series of very fresh squared blocks rising to the full height of this end of the arm in the narrow gap between quoins 002 to the east and 043 to the west. They stood nine courses (2.5 meters) high, and were so well squared that they are probably sawn, indicating a late date for their installation.

Context 043 formed the west face of the south extension, as well as the quoins for its south-west corner. This stood ten courses (2.8 meters) high and was badly eroded, but was formed by fairly well shaped rectangular blocks in regular courses, using some small pinner. These courses matched those of 002 at the east end of the south face, but did not match those of 001, the ashlar build that forms the upper part of the south face of the main chimney block. Although not corresponding in this regard, 043 was keyed in to 001 (and 003 below it), showing their contemporaneity.

Builds, 001 and 003 formed the entire south face of the main chimney block. 001 was five courses (1.2 meters) high above 003, and continued around the west face of the chimney, forming the upper quoins of the north-west corner. All the stones of 001 were coarse grained pale yellow sandstone formed into regular blocks.

The lower build 003 stood some 1.6m high and was a random rubble build from a mixed geological background, a roughly even mix of sandstones and dolerite. Their west end was marked by 006, six courses 1.72m high of well-shaped rectangular blocks that form the lower quoins for the south-west corner of RC11. All were coarse grained sandstones, pale grey or pale yellow in colour.

On the west face as noted 001 formed the top 1.2m of build, and 006 the quoins at the south end below this. To the north of 006 a small strip of rubble 008 infilled the gap between them and 007 to the north. 007 was again a series of rectangular blocks, geologically very similar to 006, but not matching their coursing. 007 stood six courses (1.72 meters) high.

Contexts 006, 007 and 008 sat over 009, a series of three thin rectangular slabs laid flat that ran the length of the west face of RC11. They projected out some 15cm from the builds above, and some 5cm from those below. The south end of 009 was hidden behind lead flashing 026, while the north end runs round to appear at the west end of the north face, on this side it is flush with the other builds.

Below 009 was inaccessible, and could only be seen from a distance. To the north a series of five rectangular sandstone blocks 018 forms the quoins at the bottom of the north-west corner. To the south of these was an area of random rubble 020, a mix of sandstones and dolerite, but incorporating two long (longer than 1 meter) thin sandstone blocks, and a single dolerite one even that was even longer. These three stones were all laid horizontally. To the south of this 037, the parapet to the Palace wall walk, ran

westwards away from the Price's Tower.

On the north face of RC11 a short roof ridge leads from the south range of the Palace and connects to this chimney. This has obscured much of the masonry of this side. To the west the quoins are formed by 002 at the top and 012 at the base, while to the east they are made up of three builds: 001; 007 and 018.

Between these quoins three builds were recognised on the north face of RC11. At the top 004 was a random rubble build formed principally by dolerite chunks that stood 1.9m high. Below this build 011 was recorded to the east of the roof ridge, and 019 to the W, doubtless the same build separated by the roof. These were both random rubble builds, and both were principally formed by sandstone, with only an occasional dolerite chunk.

The entire chimney, including the south extension was capped by two courses: 021 and 022. The lower 021 was a course of large stones 17cm high that projected out some 12cm from the builds below, and 5cm from 022 above.

The stones of 021 were severely eroded, but all were fine grained sandstones that had clearly been elaborately decorated on their outer edges. At the top a short vertical face was above a quarter roll mould, below this was a small right angle, and at the base was a second quarter roll mould. The stones are so degraded that only in a few areas could this shape be appreciated.

The top course of RC11, 022, was a series of large sandstone blocks 37cm high that all sloped inwards above a low vertical base. They came to a flat top, and were only some 15cm wide, although much obscured by 078, a modern cement and flagstone build over their tops.

Three flues ran down into the top of RC11, a small square one in the south extension, and two larger rectangular flues in the main body of the chimney. A cross wall 077 divided the main section into two flues, with that to the east 2.2m long and that to the west 1.79m long, both were some 15 to 20cm wide.

Numerous cuts and small repairs were recorded across RC11; only the most significant will be described. On the west face numerous small interventions were recorded in 002, as well as the probable musket ball holes, all numbered 038, that all seemed to be on this face.

On the south face of the south extension a series of large infilled cuts (063; 065; 067; 073; 075 and 080) ran up the west end. These may relate to each other, although the situation is confused here by the apparent repair 028 that may have caused some of this damage.

On the west face of the chimney three large horizontal cuts, 029, 030 and 031, all empty were noted. 029 was above the projecting course 009, 031 was below it and 031 had actually smashed through its north end. The top cut (029) was carefully shaped and sloped downwards to the W, the other two were horizontal.

Below these three cuts. In a completely inaccessible area was what seemed to be a sloping scar of mortar. This ran from near the north end of the west face south for perhaps 30 or 40 centimetres, rising as it went.

On the north face of RC11 a sloping cut 032 ran up the basal two stones of quoins 012, and over the lowest stone of 011 before petering out. It was square in section, roughly 1 meter long and 15cm wide by 5cm deep. It was located just to the west of the current roof, and seemed to run up at a slightly steeper angle than this does.

CHIMNEY RC11 INTERPRETATION

RC11 seems to preserve evidence for two major phases, as well as numerous smaller interventions. The earliest phase is thought to predate the Palace, and relate to the Prince's Tower, and the construction of a chimney at its north end.

Contexts 040 and 041 at the south end of the base of the west face is thought to represent part of this older chimney. It has been cut by 042 to enable the construction of 039, part of the west wall of the enlarged Palace period chimney. The north edge of 040/ 041 coincides with the north end of the south extension of this chimney, and the peculiar 'L' shaped plan RC11 has is a relic of this older, smaller chimney.

The upper build 041 is stepped in to the west from 040, and the chimney may have continued this stepped profile, explaining why it cannot be seen further up, as this is now sleeved within Palace period chimney.

Clearly the eastern parapet wall 016 also relates to the Prince's Tower, the small window in it becoming fairly redundant (although not actually blocked) when the Palace is built. The western parapet wall is not accessible, but displays evidence for alteration, probably related to the construction of a cap house over the stair for the Prince's Tower.

The bulk of the rest of the masonry was thought to relate to the period of the Palace's construction. Numerous different builds were recorded, but this just displays the technique of building lower quality masonry in less visible areas, saving the (expensive) ashlar for the prominent locations. This is best seen in

the east face where there are three builds: random rubble 039 at the base, ashlar 002 at the top; and sandwiched between them coursed rubble 017. From ground level 039 cannot be seen, and 017 gave the illusion of being ashlar masonry.

The base of the west face is at a slight angle to the rest of RC11, and this has been corrected by cutting away the south end of projecting slab 005, to allow the base of the south face to be square to the rest of the chimney. This could represent a third intermediary stage, with an extension to the north of the Prince's tower chimney at a slightly different angle from the current RC11. However due to the lack of evidence for a building of this height here before the Palace, and the short timespan between the construction of the Tower and the Palace this seems unlikely. This is interpreted as a slight error in construction that has been corrected as the chimney was being built.

Little could be seen of the base of the west face, but the three long thin slabs (two sandstone, and the one of dolerite exceptionally large, and heavy, for this stone) seemed deliberately placed within build 020. These could potentially relate to a cap house at the top of the Prince's Tower stair pre-dating the current one, which is thought to date to the first half of the 18th century. If this is correct these stones seem integral to 020 which would imply a cap house contemporary with the Palace.

The capping of the chimney seems to closely match that found on RC06, a further large chimney that services the ground floor. In the case of RC06 this was judged to be a replacement, due to its fresh condition, although perhaps copying an original design.

The stones at the top of RC11 are very heavily weathered, and it seems entirely possible that this is the original sixteenth century capping. The presence of the same (or a copy of the same) mouldings on RC06 indicates that this was not unique. It is entirely possible that all the chimneys that serve Principal level rooms (RC03; RC05; RC06; RC07; RC09 and RC11) once carried this design.

There are numerous small interventions across 002, the upper build of the east face. No clear pattern was noted, and some of these may simply be repairs to the damage that this face has evidently seen from musket balls. The only location that has a clear line of sight to 002 is from the parapet walk around the Palace roof to the east of the Prince's Tower. Soldiers must have repeatedly fired from here at the east face of RC11, presumably as target practise rather than as part of an assault.

Sufficient numbers of fairly large cuts exist at the east end of the south face of the south extension to RC11 to suggest something has been attached here. It is unclear what, but this may relate to the apparent repair represented by 028 to their immediate west.

The three large horizontal cuts (029; 030 and 031) in the west face are so similar in size and location that they seem certain to be related. The upper example (029) is carefully cut to slope down, suggesting a sloping roof, supported by the two lower straight cuts. This might relate to some sort of covered walkway between the Prince's Tower stair and the parapet walk.

There is a further inaccessible and rather enigmatic scar, 033, lower down the west side of the chimney. This is formed in mortar, and slopes up to the north. This seems unlikely to relate to the cuts above it, but it does resemble a roof line. Perhaps again some kind of structure connecting to the cap house existed here.

In the north face is a wide, well cut sloping scar 032 at the base of the east end, clear across quoins 012 and petering out across random rubble 011. This is just to the east of the current roof line on this side, and surely represents an earlier version of the same.

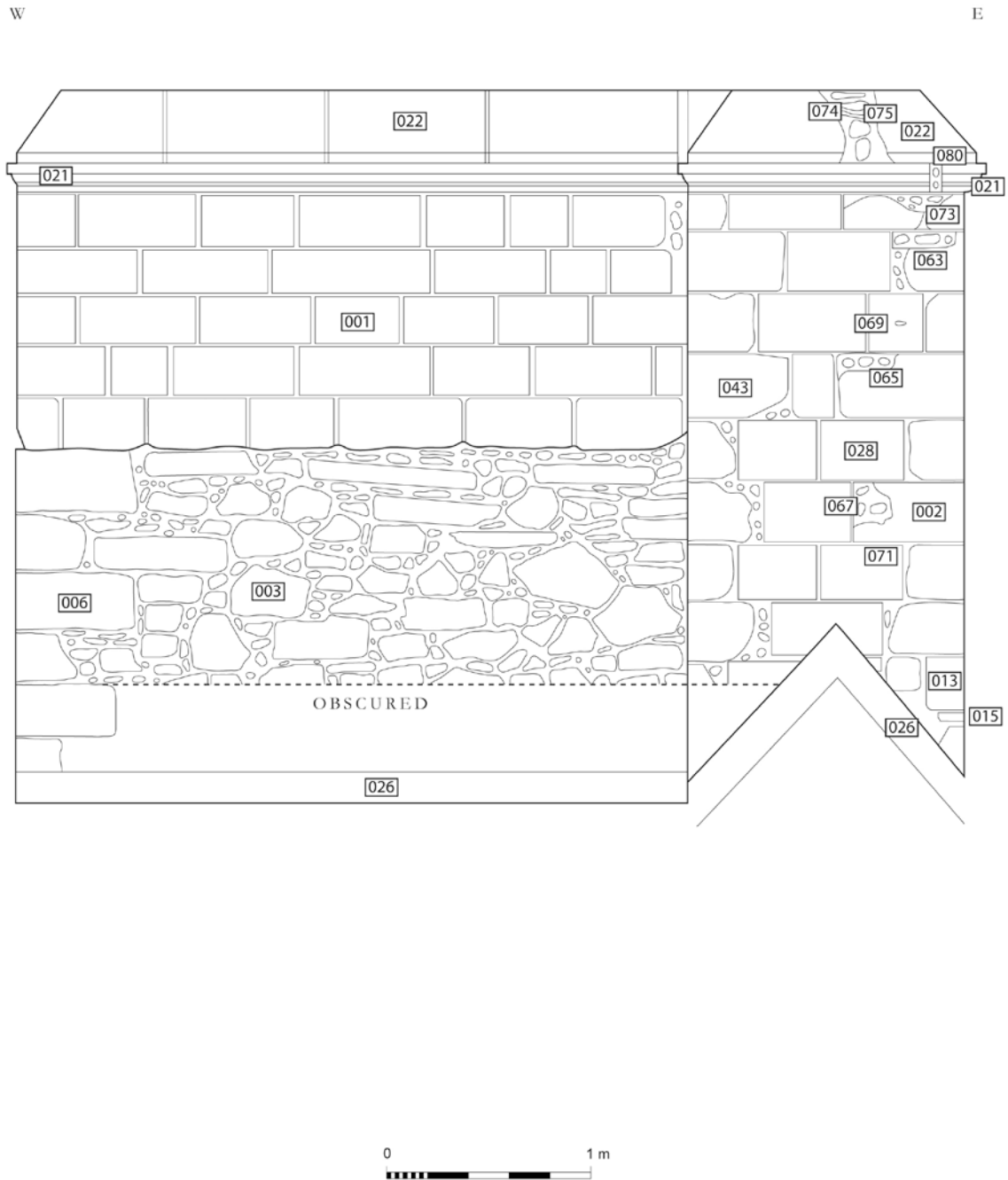


Figure 24: Chimney RC11, southern elevation.

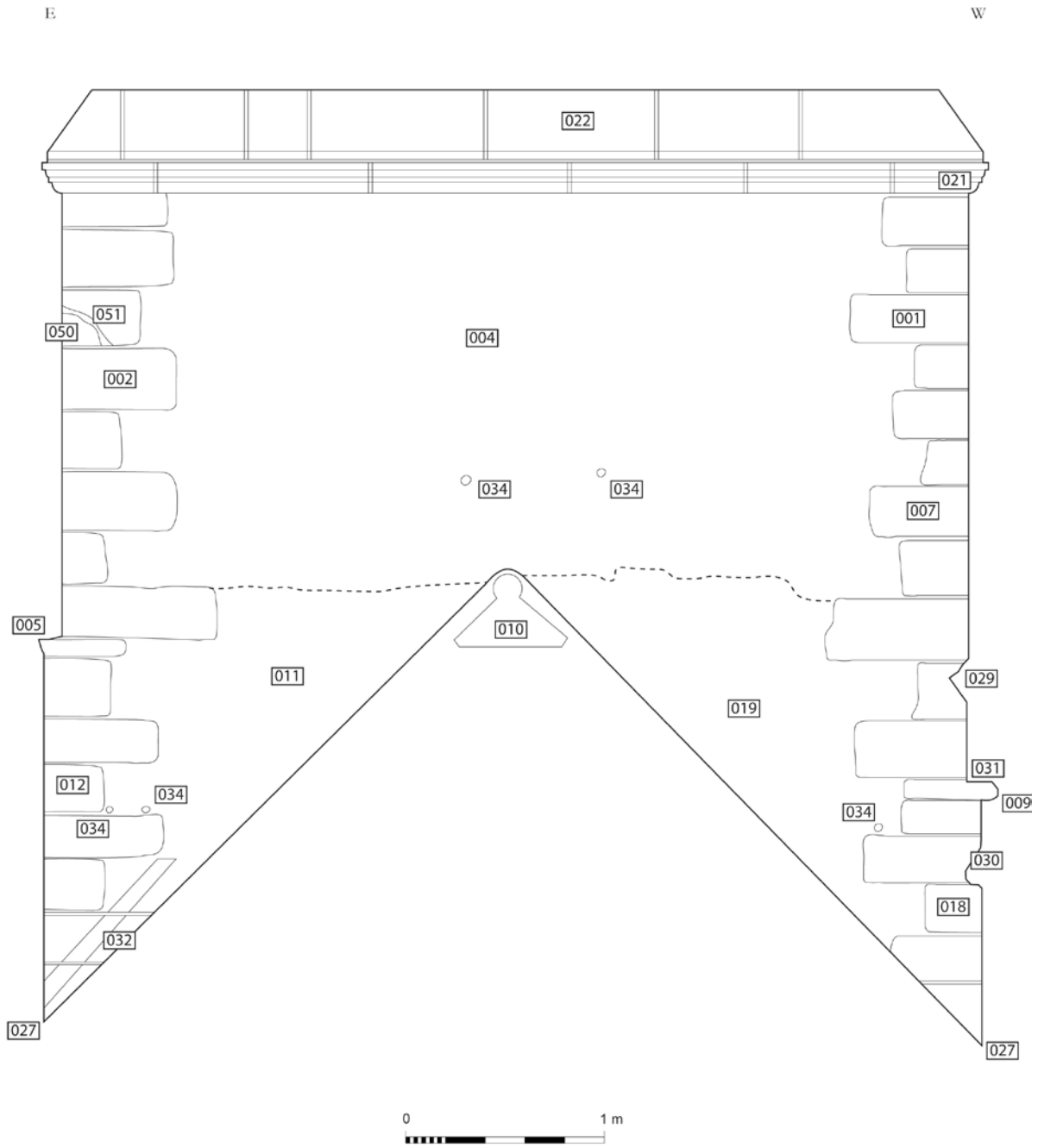


Figure 25: Chimney RC11, northern elevation.

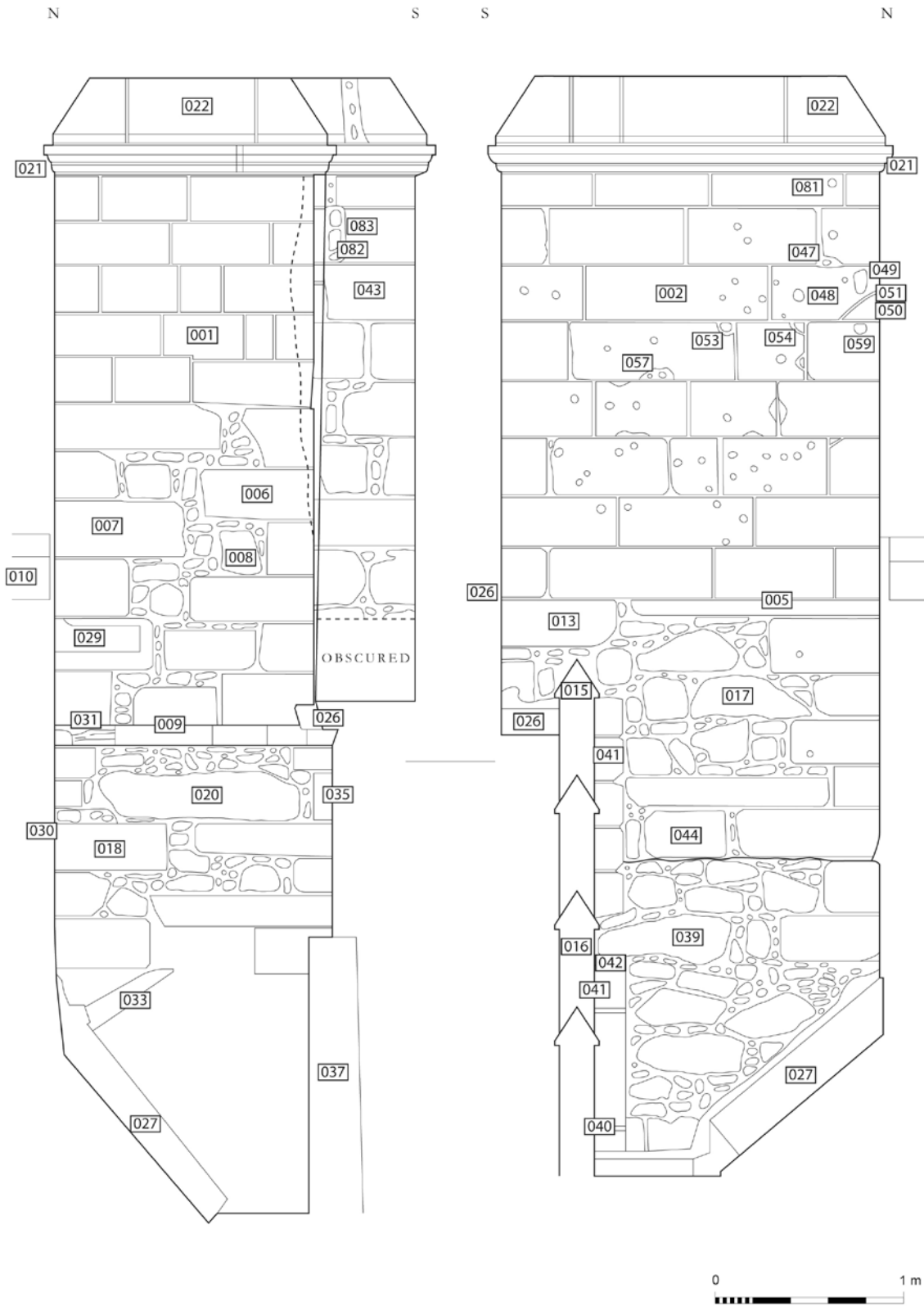


Figure 26: Chimney RC11, western elevation (left), and eastern elevation.

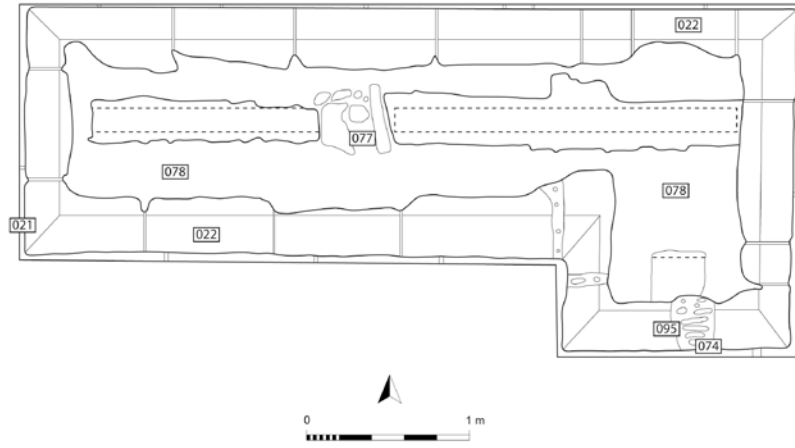


Figure 27: Chimney RC11, plan.

CHIMNEY RC12

Chimney RC12 was located towards the west end of the south range, set back slightly from the outer wall line, to allow the wall walk that runs around the top of the Palace to pass in front of its south side. The chimney measured a maximum of 5.3m high and 1.95m E/W by 90cm N/S at its base. Relatively low down in the chimney a shoulder sloping inwards ran around all but its south side, which remained vertical. Above these shoulders (1.5m above the base of the chimney) its dimensions reduced to 1.5m E/W by 70cm N/S.

Two levels of scaffolding platforms allowed good access to the upper sections of RC12. The lower part was inaccessible, and often hard to see, especially the bottom of the west and south faces.

On the principal level of the Palace a fireplace was inserted into the west end of the south wall of the Queen's Outer Hall (P: 11). This is no longer extant, but the handmade bricks used to build up its inserted flue were visible running up the south wall during the Palace restoration project. On the upper floor a fireplace is shown towards the west end of the south wall of room U: 29 in a plan dated 1719. Both these fireplaces presumably use RC12 as their flue.

The basal build of RC12, numbered 001, was inaccessible, but made up all the chimneys masonry below the inward stepping shoulders. This was up to 5 courses (only 2 on the north face) of high quality ashlar masonry. Individual stones were perhaps 50- 60cm long on average, but included many smaller examples and some larger, especially on the south face.

The stones of 001 were eroded but had clearly been carefully shaped. All of them seemed to be coarse grained sandstones that were either Pale grey or pale yellow, except for a couple of examples of fine grained blocks in the south face.

Above 001 was a further inaccessible build 002, a single course of stones that sloped inwards on all but their south face. This consisted of seven sloping stones with two vertical ones in the south side. The course was just over 20cm high, and displayed a short vertical face below one that sloped up at roughly 45 degrees

Above 002 the chimney continued up in its reduced form as 003, 11 courses of ashlar masonry 3.5m tall, with individual courses varying from 29 to 32cm in height. The stones were arranged so that a single block crossed the short face every second course, while those in the long sides varied from 24 to 95cm long.

The stones of 003 were generally in good condition; most were coarse grained sandstones, typically pale grey but including some pale yellow examples. There were 3 smaller blocks of finer grained sandstone. Faint traces of diagonal tool marks were noted, and all were clearly well shaped.

Capping build 003 was a single course of stones, 004, that projected 7-8cm in every direction from the builds above and below it. 004 stood 14cm high, and a single stone formed both short ends, while both the longer sides were made using a further two stones. 004 has been badly weathered and is lichen covered, but all the stones seemed to be coarse grained pale grey sandstone, with no surviving tool marks.

The top build of the chimney, below modern capping was a further single course 005. This consisted of 6 stones that returned to the line of 003, and stood 15cm tall. These were very eroded and obscured by lichen growth, but all were coarse grained sandstones, clearly once well shaped.

Set into the top of 005 were 2 flues, separate by a sandstone dividing wall 016 some 18cm wide. The western example was 'D' shaped with a flat east side and measured 37cm E/W by 29cm N/S. The eastern one was lined with cement internally (019), and could be seen to curve in to the E, it was circular in shape, measuring 26cm in diameter.

Two large, regular and deeply incised cuts were recorded in the north face of RC12: 011 and 013. Both were inaccessible, but both had been infilled by fine pale grey cement ((010 and 012 respectively). 011 was an inverted 'V' shape, starting half way up the bottom course of the west end of 001 and running upwards at an angle over shoulder 002, coming to a slightly enlarged apex on the bottom course of 003. It then turns 90 degrees and runs back down to the E, running behind lead flashing 008 some 25cm west of the east end.

The second cut, 013, was much shorter, appearing only over the stones of 001, where it ran from half way up the bottom stone of the west edge of this build sloping up to the west. This section was parallel to and some 30 to 40cm east of the equivalent section of 011. 013 ran over onto the east face of 001, seeming to drop vertically just as it disappeared behind lead flashing 008.

CHIMNEY RC12 INTERPRETATION

RC12 is built in a single phase, with even the capping possibly contemporary. Similarly to RC08 and RC10 this chimney is shown in a drawing made in 1753 by Sandby. Unlike them Slezer's view, some half a century older, probably also shows RC12, although in a rather garbled form, with crow steps on its shoulders which run to different heights.

If this evidence is accepted then this is a somewhat older example than most of the small chimneys at the Palace. In fact the coarse grained pale yellow sandstone with traces of diagonal tool marks recorded here is reminiscent of the style of the Palace period chimneys (e.g. RC06). Although RC12 serves an inserted hearth on the Principal level, there is no reason why the Upper floor fireplace couldn't be an original Palace feature.

The small shoulders, sloping across a single course are a unique design for a Palace chimney. At 5.25m high RC12 is the tallest of the smaller chimneys, RC02 is the only other smaller chimney built over a wall head rather than a roof ridge, and it stands only 4.2m high. The reduction of width therefore may have a real need for the height of RC12.

It seems likely that the capping to RC12, a simple projecting course, is an alteration to its design. This is the most common form of chimney top on the Palace, and is suggested to be an 18th or 19th century style.

RC12 preserves evidence for a probable roof line 011, now removed, running up to its north face. Similar evidence was recorded on the south face of RC09, and RC05 and RC06 still have short roof lines running up to them. 011 is curiously off center to the west for the chimney, and the short parallel sloping cut 013 is offset in the opposite direction. 013 is hard to explain, except as a mistake that was realized, and rectified by the cutting of 011. Such a roof line presumably postdates the late 17th century roof alterations.

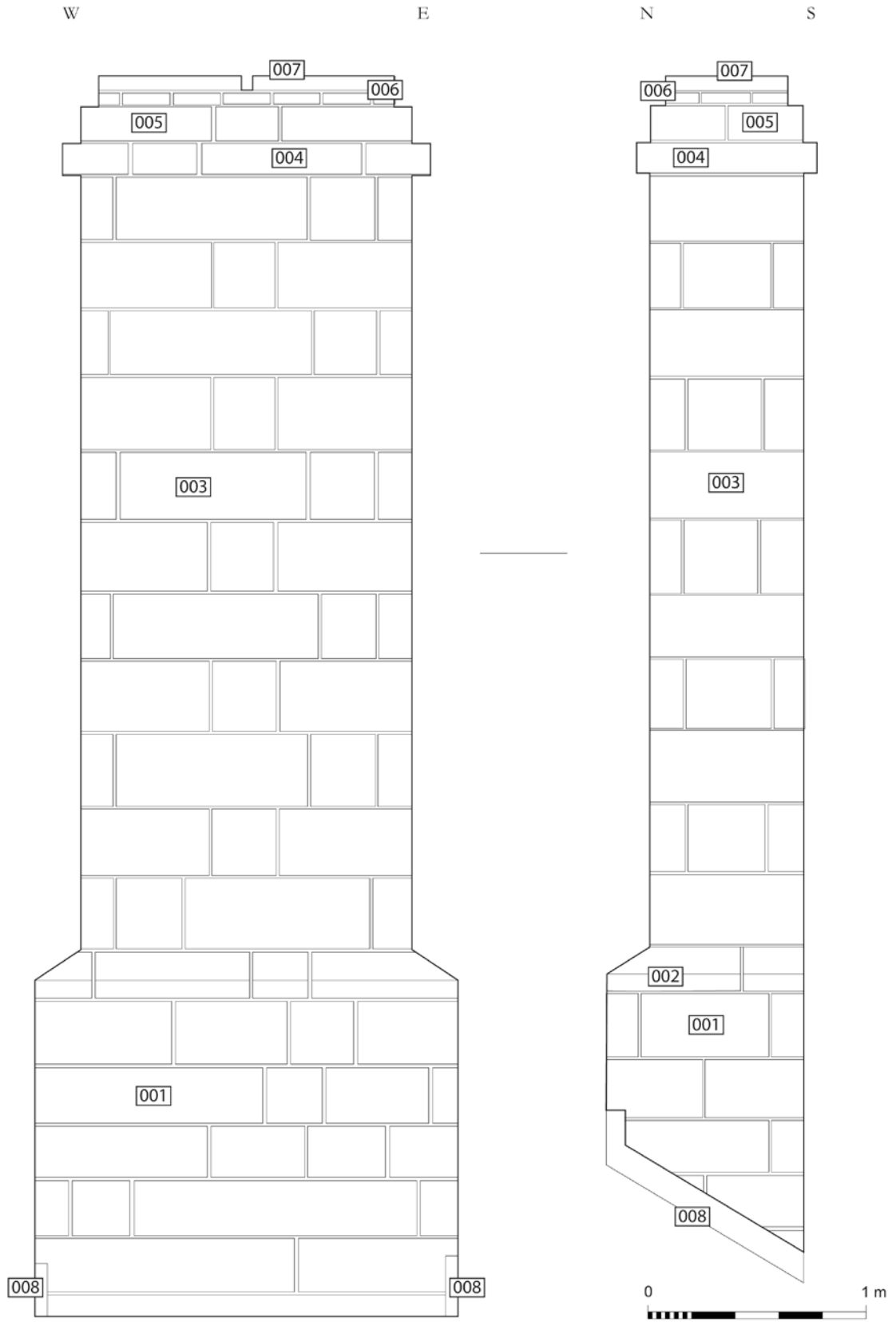


Figure 28: Chimney RC12, southern elevation (left), and western elevation.

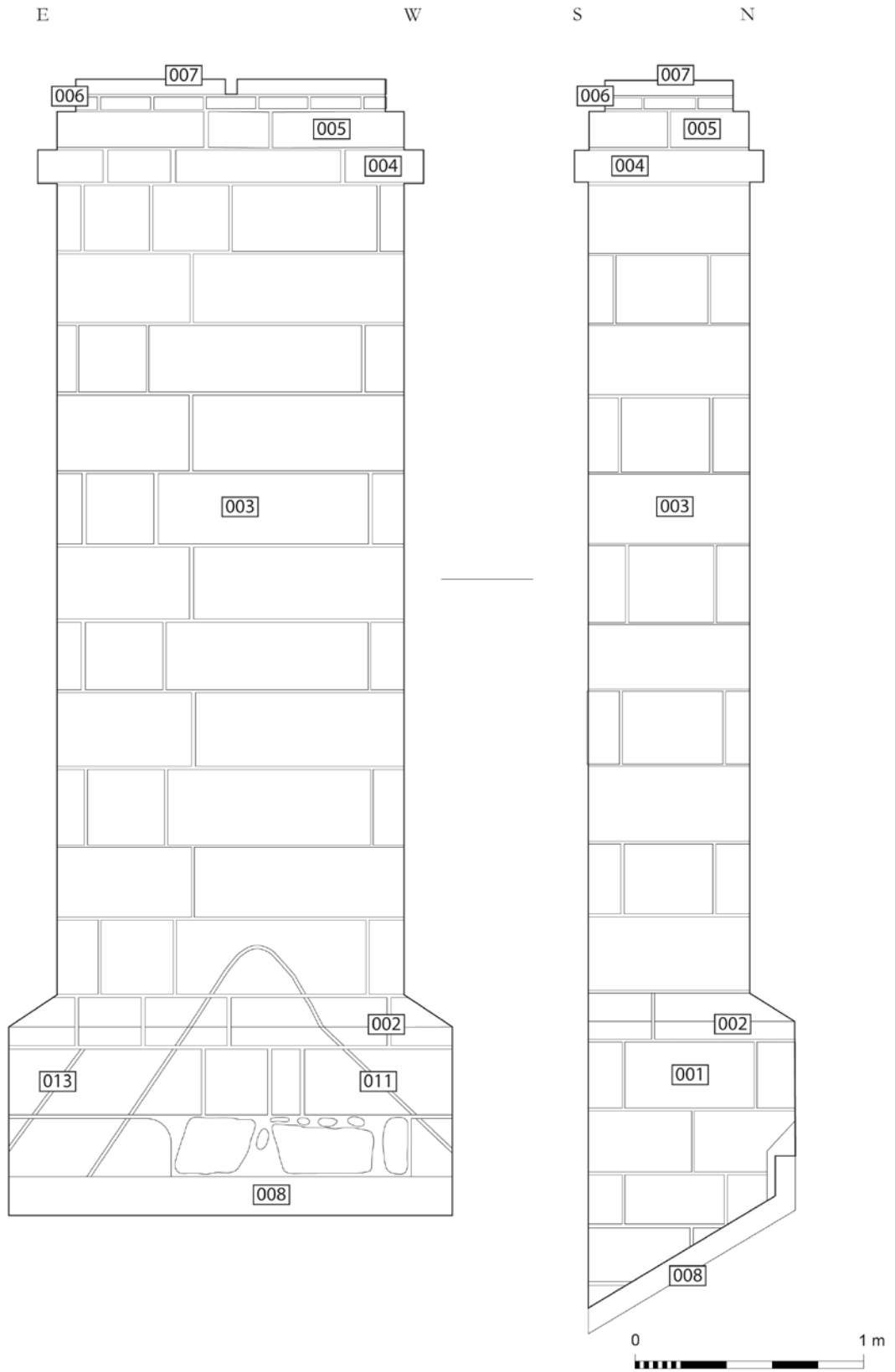


Figure 29: Chimney RC12, northern elevation (left), and eastern elevation.

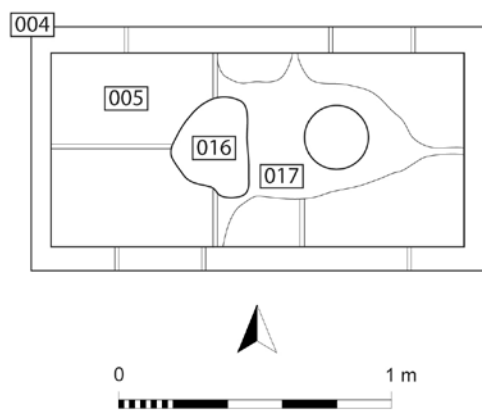


Figure 30: Chimney RC12, plan.

CHIMNEY RC13

Chimney RC13 is located on the south attic gable of the Princes Tower. It sits against the attic gable in its lower portion, projecting out from it to the south where it narrows the parapeted wall-walk serving the tower. Two fireplaces feed into this – the multiple-period fireplace in the south wall of the mezzanine floor and the fireplace in the south wall of the upper floor; this fireplace is modern by comparison, but may occupy the site of an earlier fireplace.

Only the upper half of the chimney could be drawn as the scaffold stages were bedded on the wall-walk of the Princes Tower, effectively shutting off all access to the low part of the chimney. In consultation with the HES architect it was deemed sufficient to record only those portions of the chimney accessible from the two scaffold stages. Some photographs of the lower portion of the chimney were taken from the west side of the wall-walk and from the Queen Anne Gardens to the south.

The chimney was rectangular, measuring 0.67m N/S x 1.05m E/W (in its accessible upper portion) and standing up to 6.40m high. Two levels of scaffolding platforms allowed direct access to all but the lower half of the chimney.

Two different builds seemed to make up the bulk of the chimney. The lower, 008 consisted of 14 courses of ashlar masonry built against the south attic gable of the Princes Tower and standing up to 3.54m high. These courses are of somewhat variable height (0.18m – 0.26m high); individual stones could not have their lengths recorded due to a lack of access. While the west face of this build was vertical, the east face had a stepped profile with at least four chamfered ashlar blocks widening the build down to its lower portion. Observation from the Queen Anne Gardens to the south showed that there was a disparity in the course-work of the lower west portion of the chimney and the stepped east portion, suggesting that one portion may post-date the other – this would in turn suggest that the chimney may have originally served a single fireplace and was later adapted and expanded to house another flue from an inserted fireplace. This suggestion would require confirmation by visual inspection once the removal of the scaffold allows the opportunity for closer visual inspection.

The stones of 008 are quite heavily eroded and blackened in places and formal dressing does not appear to have been preserved, although it should be noted that close examination of the masonry was not possible. Most of the stones are fine grained pale grey sandstone; a few are coarser grained pale yellow sandstone.

Directly above 008 is build 001, nine courses of ashlar masonry standing 2.88m high, with individual courses typically 0.29m – 0.32m high. These courses alternated on all four sides, to have a single stone running along each face, below a stone running at right angles to the lower course. Although the stones

were again typically 0.18m – 0.63m long, those that ran across the long sides were up to 1.05m in length.

While still weathered, the stones of 001 were fresher than those of 008, preserving some evidence for dressing, with one stone in the east face having diagonal linear tool marks. All the stones seemed to be coarse-grained pale greyish yellow sandstone. This build was secured to the roof of the attic of the Princes Tower by a steel brace 006 in the form of a 6cm thick U-shaped steel band with a further horizontal piece of flat horizontal steel closing the north side by bolting onto its U-shaped counterpart. Diagonal steel legs then run down to secure the brace, and thereby the chimney, to the attic roof. A further feature on build 001 is a ceramic pipe 007 which has been cut into the upper two courses. The pipe has a 12cm diameter and is 12cm higher to the north than to the south i.e. it sits diagonally with the chimney. It was presumably for some sort of water management although how it functioned is unclear. The nature of the ceramic suggests that it dates to the 19th century.

The lowest course of build 001 meets with the west (010) and east (011) stepped tops of the south gable of the Princes Tower. These are similar in surface treatment to build 008 and have moulded sandstone tops which are heavily weathered and slant away to the south and north, although they are flat where they engage with the chimney. It was noticeable that western stepped gable top 010 lay some 0.14m lower than 009 to the east. Against the north face of the east and west portions of the stepped gable and the lower portions of build 001 (on the north, east and west sides) is lead flashing 011 which is stuck against the build instead of being ragged into it. To the north runs the leaded ridge 012 of the attic roof of the Princes Tower.

Above 001, build 002 comprised a single course of three stones that projected out by 0.06m – 0.08m from 001 below, and 003 above. Feature 002 measured 0.81m E/W x 1.17 m N/S and was 0.14m high. This course was composed of four pieces of sandstone. These were weathered and lichen covered, but showed some evidence for closely-spaced vertical droving on their vertical faces; all seemed to be of a fine grained pale grey sandstone.

The upper build of RC13 was 003, a single course of stones that returned back to the line of build 001, below the projecting 002. Feature 003 measured 0.67m E/W x 1.05 m N/S and was 0.16m high. This course was composed of three pieces of sandstone. These were weathered and lichen covered, but again showed some evidence for closely-spaced vertical droving on their vertical faces; again, all seemed to be of a fine grained pale grey sandstone.

A modern Caithness slab sits atop build 003 on RC13. This is 0.57m wide N/S x 1.01m long E/W x 0.06m high and carries two grey ceramic flat chimney pots 005 with pierced sides and lightly rounded tops.

A modern lightning conductor, 013 (not illustrated), runs down the north face of RC13; there is no sign of it having had a predecessor in the same position.

CHIMNEY RC13 INTERPRETATION

Chimney RC01 preserved evidence for two main builds: 008 at its base and 001 further up. These distinctions were based principally around the condition of the stones and their dressing, with 001 much fresher and using much larger pieces of masonry.

It can be seen from 18th and early-19th century drawings and lithographs that the chimney over the south gable was previously much more diminutive. This appears to change to its current heightened configuration in the mid-19th century. It would seem reasonable that the lower portion of the chimney dates to the construction of the Princes Tower in c.1500 as there was an original (although much-altered subsequently) fireplace in the south wall of the mezzanine floor of the Princes Tower. The disparate coursing noted in the lower build 008 of the chimney may suggest that the chimney was subsequently altered and expanded when a further flue was necessitated by the insertion of a further fireplace at upper floor level in the tower.

The style of the top of the chimney, with a simple projecting course, is the most common seen on any of the chimneys of the palace. A similar arrangement can be seen on other buildings of the castle, such as the Fort Major's House, which dates to the 19th century. The insertion of the upper build and top may simply be the latest in a series of changing configurations of RC13.

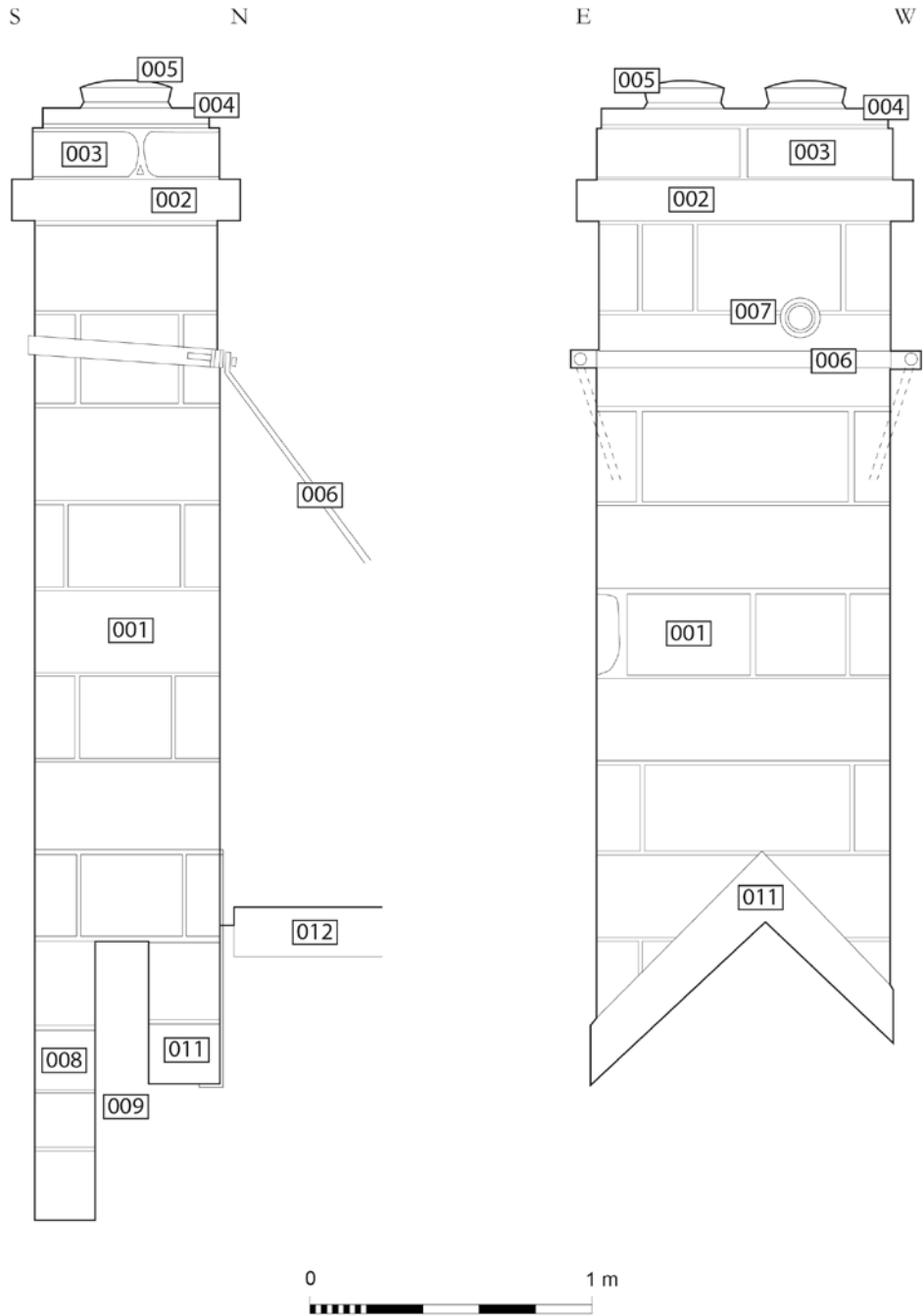


Figure 31: Chimney RC13, eastern elevation (left), and northern elevation.

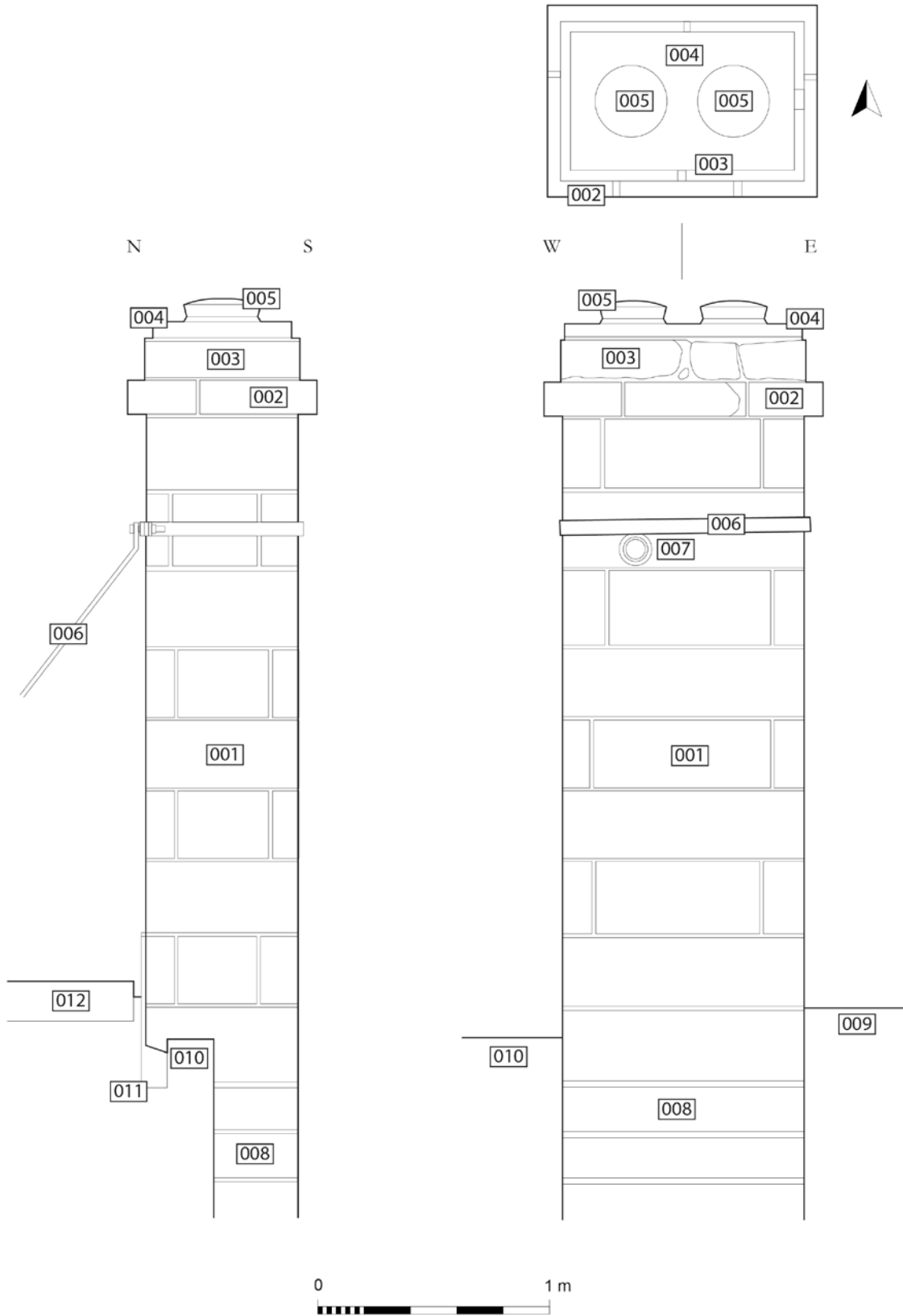


Figure 32: Chimney RC13, western elevation (left), southern elevation (right), and plan (top).

CHIMNEY RC14

Chimney RC14 was located on the roof of the west range of the Palace, the only one on this side, towards its north end. It was rectangular in plan, 60cm E/W by 1.25m N/S and stood a maximum of 3m high. Two levels of scaffolding allowed access to all of three sides, the west side was inaccessible.

RC14 sat on the roof ridge, sharing its N/S orientation, but as the west range is narrower than the others there is effectively only half a roof on this side. To the east a slated roof slopes down towards the Lion's Den, matching the other ranges, while to the west of the ridge tile of the roof there is a vertical drop down to the Ladies Lookout.

Within the Palace two inserted fireplaces are known in the west range, one on the Principal level and one on the inserted Mezzanine floor, while a further example is known from early plans on the Upper floor, this is concealed behind later surfaces. A building stood against the exterior wall of the west range of the Palace until 1970 when it was demolished. This structure saw differing uses, but served as a cook house at points, and the scar of two flues can be seen in the masonry of the Palace above where this stood.

The bulk of the chimney was of a single build, 001, standing 7 courses (2.17 meters) high. The stones were all well shaped rectangular blocks in regular courses all 29cm high. The shorter sides were built in alternating orientations, so that every second course a single stone crossed the face. The longer east and west faces used typically large blocks, up to 1.15m long, but down to as little as 12 centimetres, in the corners these stones could be seen to be 15cm thick.

The stones were so weathered that in three points on the east face it is possible to glimpse into the internal flue, and the stones are all blackened by chemical erosion. In spite of this there was much evidence for dressing of stones, in the form of fine vertical tool marks, with some of the stones at the corners preserving traces of a 5cm wide margin infilled by horizontal droving. All were coarse grained sandstone, seemingly mostly pale yellow, but with a couple of pale grey examples.

Above 001 was a single course of elaborately moulded stones 002 that projected out 11cm in all directions from 001, and 4- 5cm from build 003 above. This gave it overall dimensions of 82cm E/W by 2.45m N/S and 19cm high. A single stone ran across the north and south ends, 4 made up the east face and 3 the west face.

Although weathered, chemically blackened and covered in lichen these were clearly very well carved stones. Their exterior sides featured a short vertical face, then two rows of projecting curved areas 8cm long alternated with recessed gaps also 8cm long. These were arranged in a chequerboard manner so that the lower, slightly recessed, row would have a gap directly below a projection in the upper row. No sign of tool marks was noted, and all the stones seemed to be coarse grained pale grey sandstone.

The top build of RC14 (below the modern slab capping 028) 003 was a series of three large blocks set back slightly from 002 and 38cm high. These featured a 5cm high vertical face at their bases, above which they sloped upwards and inwards steeply, before a small three quarters roll mould at the top connects the sides to the upper face of the stones.

This flat upper surface to 003 was pierced by a series of five flues, all slightly oval and varying in size from 30cm N/S by 25cm E/W down to 24cm N/S by 23cm E/W. Two walls, 004 and 023, both seemingly built of handmade bricks could be seen within these flues. They were partially collapsed and inaccessible, but the north one (004) sloped up to the S, and seemed to direct the four northernmost openings in the top of 003 down a single flue.

A series of four copper straps ran E/W across the top of 003, these served to pin the stones together. A lightning conductor 026 runs down the west face of RC14, Two copper alloy pins (018 and 019) and a sloping scar (020) at the north end of the east face probably relate to an earlier version. Three similar rectangular cuts (014, 015 and 017), of unknown function were noted, all towards the north end of RC14. Two of these (014 and 017) still have lead within them.

The ridge tiles of the roof of the west range were also recorded; 024 to the north and 025 to the south. Both were similar, and differed from those on all other roofs, being formed by two stones on top of each other. Both stones had a short vertical east edge before sloping up to the W, while the upper stone is capped by a three quarters roll mould, while the west side is vertical. 024 was approximately 1 meter higher than the ridge tiles of the north range while 025 is about 20cm higher than the ridge of the south range.

Lead flashing 021 ran around the base of all four sides of RC14, at the east end of the north side of the chimney this seemed to sit in a carefully shaped cut 022. This rose from east to W, changing to run through three different alignments, starting with a steep slope, and then rising vertically, before running horizontally off to the west behind 021.

CHIMNEY RC14 INTERPRETATION

This chimney is of a single phase of construction, including the capping. This is known to serve inserted fireplaces, thought to be constructed in the 18th century. The exposed condition of this chimney has led to severe erosion of its fabric.

The elaborately carved capping to RC14 is matched by the tops of chimneys RC04 and RC07. RC14 provides valuable dating evidence for this style, showing it to postdate the Palace's construction, yet

predate the more utilitarian simple projecting course most commonly found capping Palace chimneys. The small scale of the projecting bosses renders this pattern invisible from ground level.

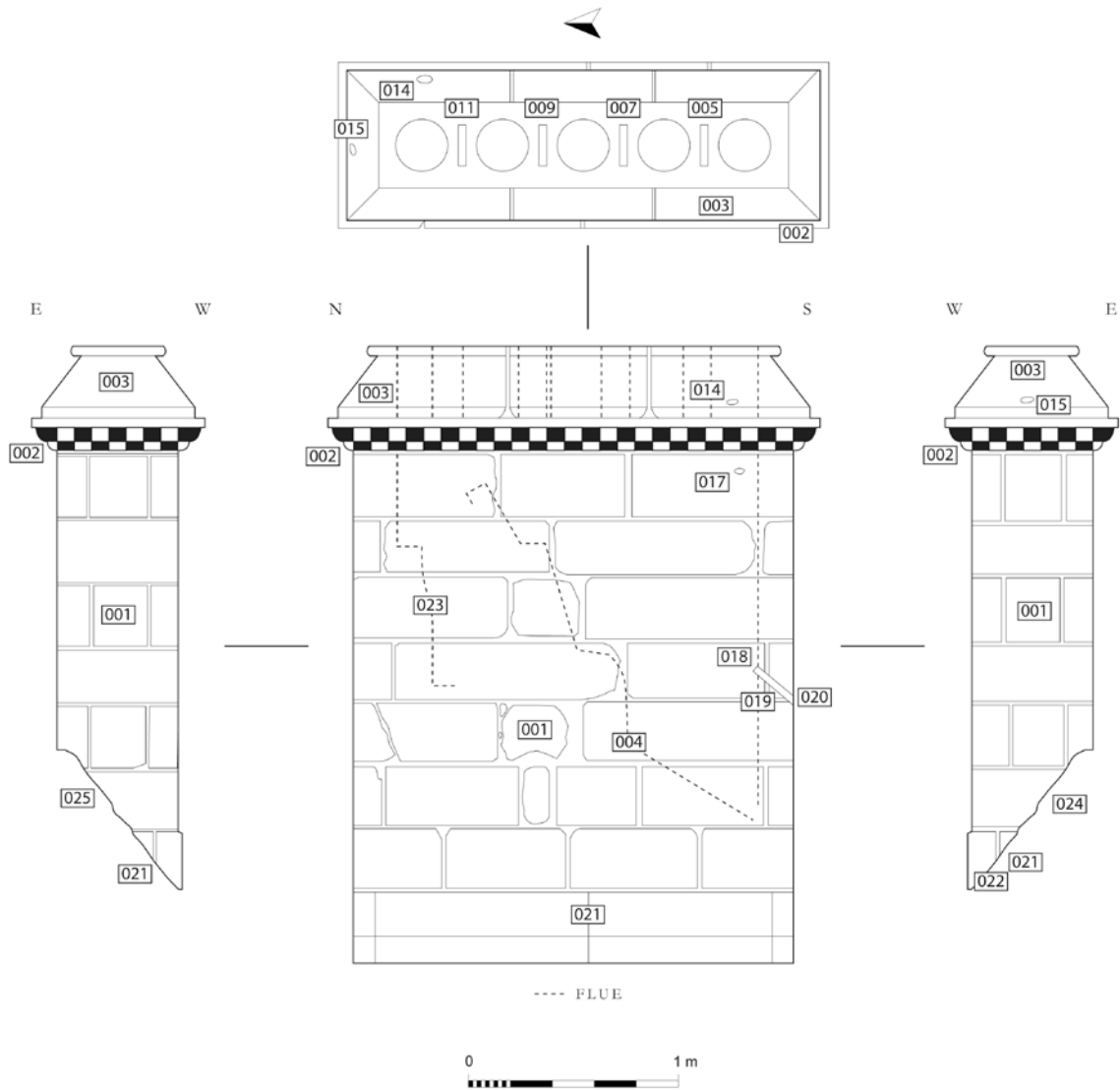


Figure 33: Chimney RC14, plan (top) and elevations.

CONCLUSIONS

This work showed how much architectural information can be gleaned from the more inaccessible parts of a building. The areas that are not easily visible often retain information that may be ‘tidied up’ in more public spaces.

Perhaps most surprising was the crow steps seemingly fossilised at the base of RC05, with just possibly a matching set to the south in RC09. This indicates the substantial survival of a pre Palace building up to the roof line under much of the east range

RC11 demonstrated how an existing flue in the Prince’s tower was reworked when the Palace was built. This helps to illustrate the constraints that the Palace architects were under.

There is a definite style to the Palace period chimneys, with the use of ashlar masonry in coarse grained typically pale yellow, sometimes pale grey sandstone. Faint traces of diagonal tool marks often survived on these builds. The possibility that RC11 carries an original Palace period moulded top has been suggested. This would be the only example, although RC06 seems to have a later copy of the same moulding.

The original chimneys also display a certain economy when deploying this ashlar masonry; areas that cannot be seen from the ground are invariably random rubble. This is best seen in the east face of RC11, where there are three different builds of progressively higher quality as the chimney rises.

Significant evidence was also recorded for the scale of the remodelling of the roof in the late 17th century. This extended to the reconstruction of tops of two of the more imposing chimneys; RC05 and RC09. The distinctive sloping shoulders that these display are thought to relate to this period, and the entire east face of RC05 (the most visible when entering the castle) seems to have been taken down and rebuilt in the new style.

Dormer roofs still exist today connecting RC05, RC06 and RC11 to the current Palace roof. Evidence for the former existence of these was recorded on RC09 and RC12, and RC11 showed evidence for an earlier roof. These are thought to relate to the remodelled 17th century roof, but since so little is known about the original roof they could be older.

Dating evidence is poor for most of the smaller chimneys. RC08 and RC10 seem to be early 18th century, judging from images of the Palace. RC14 is thought to be inserted in the 18th century. Most of the others are probably 18th or 19th century as well, although both RC04 and RC12 have unique features that could mark them out as older.

LIST OF CONTEXTS

CHIMNEY RC01

Context	Description
001	Lowest build of chimney: 7 courses of ashlar masonry
002	Upper build of chimney: 4 courses of ashlar masonry
003	Single horizontal course above 002, projects in all directions
004	Caithness flagstone capping to chimney (removed), 4cm thick, 60cm N/S and 40cm E/W
005	Lightning conductor running up the south side of RC01, 3cm wide
006	Lead flashing around the base of all sides of the chimney. Inaccessible
007	Ridge tile to west of RC01
008	Cement repair to the east end of the south side of 007
009	Ridge tile to east of RC01
010	Inclusion rich pale grey cement repointing
011	Very recent pale grey lime mortar repointing over 010
012	Eroded and broken off copper alloy pin in east face of 001
013	Eroded and broken off copper alloy pin in east face of 001, to north of 012
014	Scar 3cm wide in weathering of 001, between 012 and 013, doesn't run over 002.
015	Top course of chimney, above 003

CHIMNEY RC02

Context	Description
001	Lowest ashlar build of chimney: 7 courses on W, north and east sides, 8 on the south side
002	2 courses of very fresh ashlar between 003 and 005
003	Single projecting course above 002
004	Top course of chimney above 003
005	2 courses of ashlar build below 002 and above 001
006	Socket towards the east end of the south side of the upper face of 004: 7cm E/W; 5cm N/S and 3cm deep
007	Socket towards the east end of the north side of the upper face of 004: 5cm E/W; 3cm N/S and 1 1/2cm deep
008	Small lead fitting in 007
009	Socket towards the middle of the south side of the upper face of 004: 7cm E/W; 4cm N/S and 3cm deep
010	Socket to west of 009: 8cm E/W; 5cm N/S and 1cm deep
011	Socket near the north end of the west side of the upper face of 004: 3cm E/W; 5cm N/S and 1cm deep
012	Crude walling against the inside (E) face of the west wall of 004
013	Crude walling against the inside (W) face of the east wall of 004
014	Cement built (?) tube inside chimney flue. 1.05 m down, c. 20- 25cm diameter and 4cm thick
015	Single Caithness flagstone capping chimney (removed): 75cm E/W; 55cm N/S and 4cm thick
016	Coarse inclusion rich pale grey cement repointing
017	Recent very pale grey lime mortar repointing over 016
018	Lead flashing around the base of the chimney

CHIMNEY RC03

Context	Description
001	Top moulded course of chimney
002	Moulded course below 001
003	Main build of chimney
004	Cut in 001
005	Caithness flagstone capping over 001 (removed)
006	Eastern dividing wall in flue
007	Western dividing wall in flue
008	Two courses of stones forming "shoulder" on the east side of 003
009	Two courses of stones forming "shoulder" on the west side of 003
010	Three courses of eroded stones in the east face of RC03
011	Rubble infill of 028 below and to the north of 010 on the east face of RC03
012	Single squared replacement block at top of the north end of 011
013	Inaccessible sloping course of stones on the north face of RC03
014	Vertical cut in 010
015	Remains of horizontal cut in 010, mostly infilled by 011
016	Lead flashing around the base of the W, east and north sides of RC03
017	Metal bar attached to the south face of RC03, behind gutter 020, 11 centimeters high
018	Inclusion rich cement repointing in stonework of RC03
019	Pale yellow lime mortar very recent repointing over 018
020	Metal gutter running across the south face of RC03, 17 centimeters N/S
021	Basal two courses of stones below 003. Inaccessible
022	Single replaced stone near the west end of upper course of 021. Inaccessible
023	Horizontal moulded course below 021. Inaccessible
024	Walling below 023. south wall of the north range of the Palace
025	Rubble build on north face of RC03 below 013 (inaccessible)
026	Small repair on the top of the inside (S) of the north side of 001
027	Rubble build on north face of RC03 above 013 (inaccessible)
028	Probable cut through the bottom two courses of 010, infilled by 011

CHIMNEY RC04

Context	Description
001	Basal block of south face of RC04; yellow sandstone
002	Four courses of "in band- out band" style bearing tool marks above 001
003	Three courses of "in band- out band" style bearing faint tool marks above 002
004	Horizontal course above 003, with curved moulding
005	Seven courses of build above 004
006	Single replacement stone in the south face of 005
007	Hole in the east face of 005: 2 centimeters diameter; 4 centimeters deep
008	Projecting course with chequerboard moulding above 005
009	Large sloping capping stones above 008
010	Caithness flagstone capping (removed); three slabs
011	Brick lining on the interior of the north flue
012	Brick lining on the interior of the south flue
013	Lightning conductor running down the south face of RC04
014	Lead flashing around the base of RC04
015	Ridge tile to the west of RC04
016	Cement repair at the east end of 015
017	Ridge tile to the east of RC04
018	Copper alloy square section pin in the east face of 005
019	Pale grey inclusion rich cement repointing

CHIMNEY RC05

Context	Description
001	Apparent crow steps at the base of the west end of the south face
002	Single stone at the base of 001/ 003
003	Ashlar masonry forming main build of the west face and the quoins of the south-west and north-west corners
004	Rubble build above 001 and to the east of 003
005	Projecting wash course at the east end of the south face
006	Quoins below 005
007	Quoins above 005
008	Damage to the west end of 005
009	Ridge tile of east range roof, against 001 and 005
010	Slates below 009
011	Lead flashing and repointing above 010
012	Cement at north end of 009
013	Sandstone rich rubble build at the west end of the north face
014	Dolerite rich rubble build at the east end of the north face
015	Quoins at the east end of 014. Not used, same as 007
016	Ridge tile against 013 and 014
017	Slates below 016
018	Lead flashing and repointing above 017
019	Ashlar masonry of the east face. Not used, same as 007
020	3 courses of stones forming the sloping shoulder on the west side of the chimney
021	3 courses of stones forming the sloping shoulder on the east side of the chimney
022	Ashlar masonry on the south face between 020 and 021
023	Ashlar masonry on the north face between 020 and 021
024	Ashlar masonry around all 4 faces above 022 and 023
025	Projecting course above 024
026	Single course above 025
027	Caithness flagstone capping (removed): 4 slabs 5cm thick
028	Masonry of the south wall of the north range below 029/ 030
029	Single horizontal stone above 028. Clawed back by 031
030	Single horizontal stone above 028 to east of 029. Mostly clawed back by 031
031	Cut into 029. 030 and 031. For 032?
032	Masonry of the south wall of the north range above 029/ 030
033	Lightning conductor running up the south face of the north range, then the west face of RC05
034	Metal gutter along the south face of the north range
035	Metal gutter along the west face of the east range
036	Infill above 037
037	Horizontal slab in the west wall of the east range, sloping top
038	Slate roof below (and to the west of) 037
039	Repointing above 038
040	Socket cut into the third stone up of 001. Circular, 3cm diameter and 3cm deep
041	Socket in the sixth stone up of 001. Filled by 042
042	Small copper alloy square peg in 041
043	Socket cut into 030. Circular, 1 1/2cm diameter and 3cm deep
044	Slate roof of the north range
045	Lead flashing above 044
046	Large cut into the south face of 026
047	Large cut into the north face of 026
048	Handmade brick lining to the inside of 026
049	Eastern N/S handmade brick wall within 048
050	Western N/S handmade brick wall within 048

Context	Description
051	Metal flue to the west of 050
052	Small circular cut (2 ½cm diameter, 2cm deep) in top of west end of north wall of 026
053	Small circular cut (2 ½cm diameter, infilled by repointing 070) to east of 052
054	Small rectangular cut (4cm N/S, 2cm E/W) to east of 053. Infilled by 055
055	Lead infill of 054
056	Small circular cut (2 ½cm diameter, infilled by 057) to east of 054
057	Lead infill of 056
058	Possible rectangular cut (3cm N/S, 2cm E/W and 1cm deep) to north-east of 056
059	Small square cut(3cm square, 3cm deep) to south-east of 056
060	Small circular cut (2cm diameter, 1cm deep) to south of 059
061	Small circular cut (2cm diameter, 1cm deep) to south of 060
062	Small circular cut (2cm diameter, 1cm deep) to west of 060/ 061
063	Small circular cut (2 ½cm diameter, infilled by repointing 070) to south-west of 061
064	Small rectangular cut (2 ½cm N/S, 2cm E/W, infilled by repointing 070) to west of 063
065	Small circular cut (2 ½cm diameter, at least 1cm deep) to west of 064
066	3 replaced stones in the north-west corner of RC05, within 003
067	Single replaced stone in the west face of RC05, within 003
068	Possible damage to the west face of 003
069	Pale grey cement infill of 068
070	Fine, inclusion rich, pale grey repointing across RC05
071	Copper alloy pin in 013
072	Cut in the south face of RC05, for 014 and 073
073	Random rubble rebuilt section of the east end of the south face
074	Possible earlier stonework in the north face below 024
075	Small hollow (shot hole?) in east face of 007
076	Small socket cut into 004

CHIMNEY RC06

Context	Description
001	Main build of chimney, ashlar masonry
002	Rubble build of east face below 001
003	Projecting moulded course above 001
004	Sloping course of stones above 003
005	Lead, cement and engineering brick capping above 004: 10cm high, 35cm E/W and 2.6m N/S
006	Caithness flagstones above 005
007	Moulded wash course at the base of the west face of 001
008	Palace wall below 007
009	Walling running off the north side of 001
010	Walling running off the south side of 001
011	Ridge tile against 002
012	Lead flashing around the base of the chimney
013	Iron gutter along the west base of the chimney
014	Two replacement blocks of 001 dated "1991"
015	Probable replacement stones to 001; defined by clear vertical dressing and finer grained geology
016	Lightning conductor running down the south face of chimney

CHIMNEY RC07

Context	Description
001	Random rubble build at the base of the south face of RC:07
002	Main ashlar build of RC: 07, up to 16 courses
003	Chequerboard moulded plinth above 002
004	Course of large sloping blocks above 003
005	“Cement brick” and ventilated modern brick capping to 004
006	Caithness flagstones on top of 005: 2 E/W slabs, 7cm thick, 42cm N/S and 2.7m E/W.
007	Lead flashing around the base of RC: 07
008	Lead flashing under 005, over 004
009	Damage to south face of 014
010	Small sandstone chunk infilling 009
011	Iron hook in south face of RC: 07 (between 002 and 003): projects 4 centimetres, hoop 1 ½cm diameter
012	Iron hook in east face of RC: 07 (between 003 and 004): projects 7 centimetres, hoop 1 ½cm diameter
013	Iron hook in north face of RC: 07 (between 003 and 004): projects 5½ centimetres, hoop 1 ½cm diameter
014	Two possible earlier stones near the west end of the south face of 003
015	One possible earlier stone near the east end of the south face of 003
016	Inclusion rich pale grey cement repointing
017	Lightning conductor running down the west face of RC: 07; 2 ½cm wide

CHIMNEY RC08

Context	Description
001	Main build of chimney: up to 8 courses of ashlar masonry
002	2 probable replaced stones low down in the east face of 001
003	2 probable replaced stones low down in the west face of 001
004	Projecting course capping 001
005	Single course above 004
006	Single course above 005, modern ventilating bricks
007	Caithness flagstone capping to 006. 2 slabs 7cm thick, 42cm N/S and 2.76 m E/W
008	Lightning conductors running down the east and west faces, both 2 ½cm wide
009	Lead flashing around the base of the chimney
010	Ridge tile against the east face of RC08
011	Slates below 010
012	Lower copper alloy pin in the east face of 001
013	Upper copper alloy pin in the east face of 001
014	Scar in chemical weathering running between 012 and 013, traceable for 1.1 meters
015	Lower copper alloy pin in the west face of 001, 98cm below 016
016	Middle copper alloy pin in the west face of 001
017	Upper copper alloy pin in the west face of 001
018	Scar connecting 015; 016 and 017. 4cm wide, traceable for 1.5 meters
019	Ridge tile against the west face of RC08
020	Slates below 019
021	Inclusion rich cement repointing of all masonry

CHIMNEY RC09

Context	Description
001	N wall of the south range of the Palace
002	Projecting moulded eaves course above 001
003	Main build of the north and west faces, and basal 6 courses of the east face of RC09. Ashlar masonry
004	Lintel to the window to the east of the north face of RC09
005	Infill of 006 around 004 and 007
006	Cut through 001, 003 and probably 002 for the insertion of 004; 005; 007 and 051
007	W margin of window to the east of the north face of RC09
008	Iron gutter to the east of RC09
009	Iron gutter to the west of RC09, includes down pipe
010	Iron downpipe to the west of 009's downpipe
011	Quoins running up the south-east corner of RC09, above build 003
012	Infill of the east face of RC09, between 003 and 011
013	Infill of the south face of RC09, between 003 and 011
014	Repair to 013
015	Sloping stones forming the shoulders on the west side
016	Sloping stones forming the shoulders on the east side
017	Ashlar masonry on the north face between 015 and 016
018	Ashlar masonry on the south face between 015 and 016
019	3 courses of ashlar masonry above shoulders 015 and 016
020	Single projecting course of stones above 019
021	Single course of stones above 020
022	Caithness flagstone capping to top of chimney. 3 slabs 5 ½cm thick.
023	Lead flashing around all but the north side of the base of RC09
024	Lightning conductor running down the south face of RC09. 2 ½cm wide.
025	Lintel to the window to the west of the north face of RC09
026	E margin to the window to the west of the north face of RC09
027	Cut into 002 (and 003?) for 025 and 026
028	Small hole in 015
029	Circular iron peg (1 ½cm diameter) and lead infill around it within 028
030	Pale grey cement and small sandstone fragments repair to west face of 003
031	Large square cut in build 013
032	Infill of 031
033	Sloping, discontinuous cut to the west of 031, post- dated by 014
034	Sloping, discontinuous cut to the east of 031, post- dated by 014
035	Probably replaced stone in south-west corner of 003
036	Small circular (6cm diameter) cut in north face of 003, infilled by repointing 055
037	Dolerite and cement infill of 038
038	Small (9cm diameter) cut in the north face of 003
039	Dolerite and cement infill of 040
040	Small vertical cut (13cm high, 10cm wide) in the north face of 003
041	Deep vertical cut in the base of the west face of 003
042	Sandstone infill of 043
043	Horizontal cut to the south of 003
044	Sandstone infill of 045
045	Horizontal cut in west face of 003, above 043
046	Square (6 centimetres) cut in north face of 015, infilled by repointing 055
047	Small square (7 millimetre) broken off copper alloy peg in 014
048	Small square (7 millimetre) broken off copper alloy peg in 014
049	Small square (7 millimetre) broken off copper alloy peg in 018
050	Small square (7 millimetre) broken off copper alloy peg in 019
051	E margin of window to the east of the north face of RC09

Context	Description
052	Possible fossilized crow steps to the east of the north face of RC09
053	Lead flashing on the west side of the east range of the Palace
054	Square cut in 016/ 017 (6 centimetres), infilled by 055
055	Pale grey inclusion rich cement repointing
056	Small rectangular cut in 013.5cm E/W, 3cm high and 3cm deep
057	Infill within 021, creating 2 flues
058	Modern engineering bricks over the west end of 057
059	Slates and cement over the centre of 057
060	Render over the inner faces of 057
061	Slight eroded hollow in the top of the north-east corner of 021
062	Slight eroded hollow in the top of the south-east corner of 021
063	Slight eroded hollow in the top of the south-west corner of 021
064	Slight eroded hollow in the top of the north-west corner of 021

CHIMNEY RC10

Context	Description
001	Main build of chimney: up to 9 courses of ashlar masonry
002	Projecting course above 001
003	Build above 002
004	Cement and ventilating brick build above 003. 10cm high; 51cm E/W and 1.07m N/S
005	Two Caithness flagstones above 004. 6cm thick; 54cm E/W and 1.1m N/S
006	Lightning conductor running down the north side of the chimney
007	Lead flashing around the base of RC10
008	Ridge tile to the west of RC10. Inaccessible
009	Ridge tile to the east of RC10. Inaccessible
010	Inclusion rich cement repointing of masonry of RC10
011	Cut in the south face of 001
012	Copper alloy square section pin in 011
013	Brick and stone partition within chimney flue.

CHIMNEY RC11

Context	Description
001	Upper ashlar build at the west end: five courses at the top of the west face and the south face to the west of the south extension
002	Upper ashlar build of the east face: eight courses
003	Rubble infill of the south face below 001
004	Dolerite rich rubble infill of north face between 001 and 002
005	Projecting slab on the east side below 002
006	Quoins of the south-west corner below 001
007	Quoins of the north-west corner below 001
008	Rubble infill of the west face between 006 and 007
009	Projecting slab on the west face below 006, 007 and 008
010	Ridge tile against the north face of RC11
011	Sandstone rich rubble build on the north face to east of 010 and west of 012
012	Quoins of the north-east corner below 005, to east of 011
013	Single flat slab at the south end of 005
014	Infill between 013 and 015, fill of cut 045
015	Coping stone to wall 016
016	Wall at back (N) side of Prince's Tower running east from south-east corner of RC11
017	Build of the east face between 012 and 015/016

Context	Description
018	Quoins of the north-west corner below 009
019	Build of north face to west of 010. east of 018 and below 004
020	Build of west face to south of 018
021	Projecting moulded course above 001, 002 and 004
022	Sloping course of stones above 020
023	Concrete and ventilated brick course above 022 (removed)
024	Caithness flagstone capping to chimney above 023. Now removed, 13 slabs, 5cm thick
025	Lightning conductor running down the south face of the south extension
026	Lead flashing on the south side of the chimney
027	Lead flashing on the north side of the chimney
028	Replaced (?) stone in the south face of 002
029	Horizontal rectangular cut in west face of 007
030	Horizontal rectangular cut in west face of 018
031	Cut at the north end of 009
032	Scar across the base of 012
033	Mortar scar across 020. Inaccessible
034	Modern metal hooks to attach a safety harness (3 in the north face)
035	N wall of cap house on west side of Prince's Tower. Inaccessible
036	Coping stones running down to the south from 035. Inaccessible
037	Battlement parapet to the west of RC11, below 035. Inaccessible
038	Generic number for bullet holes in masonry. Typically 5cm diameter and 2cm deep
039	Build of the east face below 017
040	Projecting stones at the base of the junction of 016 and 039, east face
041	Projecting stones above 040
042	Cut into 041 (for 039)
043	Build of the west face of the south extension, probably the same as 002
044	Possible reused stone in build 017
045	Cut through 005 and 017, infilled by 013 and 014
046	Infill of 047, one small dolerite chunk
047	Horizontal rectangular cut in 002: 18cm long and 7cm high
048	Circular cut in 002, 5cm diameter, infilled by 076, bullet hole?
049	Vertical rectangular cut in 002: 14cm high; 6cm wide, infilled by 076
050	Single well shaped fine grained pale grey sandstone block infilling 051. Good east and north faces- reused stone?
051	Cut in 002 at north-east corner: maximum of 20cm N/S; 24cm E/W and 16cm high
052	Small coarse grained sandstone chunk infilling 053
053	Horizontal rectangular cut in 002: 10cm N/S; 6cm high
054	Small coarse grained sandstone chunk infilling 055
055	Vertical rectangular cut: 9cm wide, 6cm high
056	Two small sandstone chunks infilling 057
057	Horizontal rectangular cut in 002: 15cm N/S; 6cm high
058	Small dolerite chunk infilling 059
059	Irregular cut in 002: maximum of 8cm N/S by 6cm high
060	Copper alloy hoop inserted into 001: 5cm high, 5 millimeters N/S
061	Two small (2cm diameter) circular holes in the base of 002, 4cm apart
062	Three small sandstone chunks in 063
063	Horizontal rectangular cut in the south face of 002: 30cm E/W; 9cm high
064	Three small sandstone chunks in 065
065	Horizontal rectangular cut in the south face of 002: 27cm E/W; 9cm high
066	Four small sandstone chunks in 065
067	Nearly square cut in the south face of 002: 20cm E/W; 18cm high
068	Copper alloy hoop inserted into 069: 5cm E/W, 5 millimeters high
069	Two small square cuts in 028: 1cm square, 1 1/2cm apart

Context	Description
070	Very decayed remnant of copper alloy in 071
071	Two small square cuts in the south face of 002: 1cm square, 1 ½cm apart
072	Two small sandstone chunks infilling 073
073	Irregular but roughly rectangular horizontal cut in 002: 40cm E/W, maximum of 9cm high
074	Five small chunks of sandstone and one slate infilling 075
075	Irregular cut running up the sloping south face of 022: maximum of 25cm wide; 32cm high
076	Inclusion rich pale grey cement repointing over RC11
077	N/S cross wall subdividing the main E/W flue into two
078	Modern cement, sandstone and flagstone infill on top of 022 and 077
079	Two small sandstone chunks infilling 080
080	Small vertical cut in 021: 6cm E/W; 15cm high, may be part of cut 073
081	Small circular cut in the top of the east face of 002, infilled by 076. 5cm diameter. Bullet hole?
082	Three small sandstone chunks infilling 083
083	Vertical rectangular cut in the top of the south face of 001: 25cm high; 7cm wide

CHIMNEY RC12

Context	Description
001	Basal build of RC12
002	Projecting course (except on the south side) above 001
003	Main build of chimney above 002
004	Projecting course above 003
005	Single course above 004
006	Cement and ventilating brick course above 005: 10 centimeters high; 54 centimeters N/S and 1.37m E/W
007	Two Caithness flagstones above 005 (removed): 5 ½ centimeters high; 57 centimeters N/S and 1.37m E/W
008	Lead flashing around the base of the chimney
009	Iron gutter running along the south face of the chimney
010	Fine pale grey cement infill of 011
011	“V” shaped scar in the base of the north face of RC12
012	Fine pale grey cement infill of 013
013	Sloping scar across 001 to the east of 011
014	Pale grey inclusion rich cement repointing of chimney (over 010 and 012)
015	Lightning conductor running down the north face of RC12; 2 ½ centimeters wide
016	Dividing wall within flues
017	Three courses of handmade brick at the top of 016, possible repair
018	Cement and modern brick infill above 017
019	Cement (?) lining to east flue
020	Iron rim over 019

CHIMNEY RC13

Context	Description
001	Upper build of chimney: nine courses of ashlar masonry.
002	Single horizontal course above 001, projects in all directions.
003	Recessed single horizontal course on chimney crown above 002, carries 004.
004	Caithness flagstone capping to chimney, 0.06m thick, 1m N/S x 57cm E/W.
005	Grey ceramic flat chimney pots with pierced sides on 004.
006	Steel brace securing RC13 (on build 001) to the roof of the Princes Tower.
007	Cut through the upper two courses of 001 with ceramic pipe inserted within.
008	Lower build of chimney: 14 courses of ashlar masonry.
009	Stepped top of the south gable of the Princes Tower to east of RC13.
010	Stepped top of the south gable of the Princes Tower to west of RC13.
011	Lead flashing against 009, 010 and RC13.
012	Leaded ridge on attic roof of Princes Tower.
013	Lightning conductor against north face of RC13.

CHIMNEY RC014

Context	Description
001	Main build of chimney: 7 courses of ashlar masonry
002	Single projecting horizontal course above 001, elaborately moulded
003	Single course of sloping stones above 002
004	Brick wall within chimney flue, towards its north end
005	Copper strip and cement infill of 006
006	E/W cut between southern 2 flues in 003
007	Copper strip and cement infill of 008
008	E/W cut between flues 2 and 3
009	Copper strip and cement infill of 010
010	E/W cut between flues 3 and 4
011	Copper strip and cement infill of 012
012	E/W cut between flues 4 and 5
013	Lead infill of 014
014	Rectangular cut in the east face of 003: 5cm N/S; 2 ½cm high and 3cm deep
015	Rectangular cut in the north face of 003: 6cm N/S; 3cm high and 3cm deep
016	Lead infill of 017
017	Rectangular cut near the north end of the top of the east face of 001: 6cm N/S, 3cm high and 3cm deep
018	Upper copper alloy pin near the north end of the east face of 001
019	Lower copper alloy pin near the north end of the east face of 001
020	Sloping (upwards to the south at c. 45 degrees) scar in 001, between 018 and 019
021	Lead flashing around the base of the chimney
022	Cut into the back of the north side of 001, filled by 021
023	Brick wall within flue towards the south end
024	Ridge tile to north of RC14
025	Ridge tile to south of RC14
026	Lightning conductor running down the west face of RC14
027	Coarse inclusion rich pale grey cement repointing
028	Caithness flagstone capping to 003, removed

LIST OF DRAWINGS

No.	Description	Scale	Date
1	S elevation of RC01	1:20	17/11/2016
2	E elevation of RC01	1:20	17/11/2016
3	N elevation of RC01	1:20	17/11/2016
4	W elevation of RC01	1:20	17/11/2016
5	Plan of RCO1	1:20	17/11/2016
6	S elevation of RC03	1:20	18/11/2016
7	Plan of RCO3	1:20	18/11/2016
8	S elevation of RC02	1:20	18/11/2016
9	Plan of RCO2	1:20	18/11/2016
10	S elevation of RC05	1:20	21/11/2016
11	E elevation of RC05	1:20	22/11/2016
12	W elevation of RC05	1:20	22/11/2016
13	N elevation of RC05	1:20	23/11/2016
14	Plan of RCO7	1:20	22/11/2016
15	S elevation of RC07	1:20	22/11/2016
16	E elevation of RC08	1:20	21/11/2016
17	S elevation of RC08	1:20	21/11/2016
18	Plan of RCO8	1:20	21/11/2016
19	N elevation of RC09	1:20	24/11/2016
20	E elevation of RC03	1:20	24/11/2016
21	W elevation of RC02	1:20	25/11/2016
22	W elevation of RC09	1:20	25/11/2016
23	W elevation of RC07	1:20	16/12/2016
24	E elevation of RC09	1:20	14/12/2016
25	S elevation of RC09	1:20	15-16/12/2016
26	Plan of RCO9	1:20	19/12/2016
27	W elevation of RC04	1:20	19/12/2016
28	Plan of RCO4	1:20	19/12/2016
29	S elevation of RC04	1:20	20/12/2016
30	E elevation of RC14	1:20	19/12/2016
31	S elevation of RC14	1:20	20/12/2016
32	Plan of RC14	1:20	20/12/2016
33	N elevation of RC14	1:20	20/12/2016
34	S elevation of RC12	1:20	16/01/2017
35	N elevation of RC12	1:20	16/01/2017
36	W elevation of RC12	1:20	16/01/2017
37	E elevation of RC12	1:20	16/01/2017
38	Plan of RC12 (minus 006 and 007)	1:20	16/01/2017
39	S elevation of RC10	1:20	16/01/2017
40	E elevation of RC10	1:20	16/01/2017
41	Plan of RC10 (minus 004 and 005)	1:20	16/01/2017
42	W elevation of RC06	1:20	17/01/2017
43	E elevation of RC13	1:20	24/8/2017
44	N elevation of RC13	1:20	24/8/2017
45	W elevation of RC13	1:20	24/8/2017
46	S elevation of RC13	1:20	24/8/2017
47	Plan of RC13	1:20	24/8/2017

LIST OF DIGITAL PHOTOGRAPHS

No.	Description	From	Date
1	General view of Castle from Esplanade	S	16/11/2016
2	General view of Palace from Esplanade	S	16/11/2016
3	General view of Palace from Esplanade	S	16/11/2016
4	General view of Palace from Esplanade	S	16/11/2016
5	Shop with extension	S	16/11/2016
6	Scaffolding in the Lion's Den	W	16/11/2016
7	Chimney RC01 showing chimney head 003	E	16/11/2016
8	Chimney RC01 showing chimney head 003	E	16/11/2016
9	Chimney RC01 showing chimney head 003	NW	16/11/2016
10	Chimney RC01 showing chimney head 003	E	16/11/2016
11	Chimney RC01, view down chimney	E	16/11/2016
12	Chimney RC01, view down chimney	E	16/11/2016
13	General view from scaffold	E	16/11/2016
14	General view from scaffold	NE	16/11/2016
15	RC01 – Builds 001 and 002	SE	16/11/2016
16	RC01 – Detail of build 001	SW	16/11/2016
17	RC01 – Detail of build 002	SW	16/11/2016
18	RC01 – Detail of build 001	NE	16/11/2016
19	RC01 – Detail of build 002	NE	16/11/2016
20	RC01 – Detail of build 001	NW	16/11/2016
21	RC01 – Detail of build 002	NW	16/11/2016
22	RC01 – Nails 012 and 013 and Scar 014	E	16/11/2016
23	RC01 – Base of build 001 on south face	S	16/11/2016
24	RC02 and RC03 – General shot	W	16/11/2016
25	RC02 – General shot	NW	16/11/2016
26	RC03 – Showing upper build 001 and features 006 and 007	W	16/11/2016
27	RC03 – Upper build 001 and walls 006 and 007	S	16/11/2016
28	RC03 – Upper build 001 and walls 006 and 007	S	16/11/2016
29	RC03 – Central flue	S	16/11/2016
30	RC03 – Upper part, general shot	NE	16/11/2016
31	RC03 – Detail of moulding on north face of 001 and 002	NE	16/11/2016
32	RC03 – Detail of moulding on east face of 001 and 002	NE	16/11/2016
33	RC03 – Detail of east face of 008	SE	16/11/2016
34	RC03 – Detail of south face of 008	S	16/11/2016
35	RC03 – Detail of west face of 009	SW	16/11/2016
36	RC03 – Detail of south face of 009	S	16/11/2016
37	RC03 – 008	E	16/11/2016
38	RC03 – 009	W	16/11/2016
39	General shot of west face of RC03	W	16/11/2016
40	General shot of east face of RC03	E	16/11/2016
41	RC03 – east face – Detail of 010 and 011	E	16/11/2016
42	RC03 – east face – Detail of 010 and 011	E	16/11/2016
43	RC03 – east face – Detail of 010 and 011	E	16/11/2016
44	RC03 – Base of cut 014	E	16/11/2016
45	RC03 – Base of cut 014	SE	16/11/2016
46	RC03 – west face of chimney (base)	W	16/11/2016
47	RC02 – east face – Showing 001, 002 and 003	E	16/11/2016
48	RC02 – south-east corner – Showing 002, 003 and 004	SE	16/11/2016
49	RC02 – west face – Showing 001, 002, 003 and 004	W	16/11/2016
50	RC02 and RC03 – General shot	NW	16/11/2016

No.	Description	From	Date
51	SW corner of Palace from scaffold	NE	16/11/2016
52	W end of roof of north Range – Chimney RC01 at its west end	E	16/11/2016
53	E end of roof of north Range – Chimney RC05 covered in scaffolding to the south	W	16/11/2016
54	Lion finial on south-west corner of Palace from scaffold	NE	16/11/2016
55	Lion finial on south-west corner of Palace from scaffold	NE	16/11/2016
56	Lion finial on south-west corner of Palace from scaffold	NE	16/11/2016
57	Lion finial on north-west corner of Palace from scaffold	SE	16/11/2016
58	Lion finial on north-west corner of Palace from scaffold	SE	16/11/2016
59	Paul working on RC01	E	16/11/2016
60	Paul working on RC01	E	16/11/2016
61	RC04 – Base of S-facing façade showing builds 001 and 002	S	17/11/2016
62	General view looking W	E	17/11/2016
63	General view looking W	E	17/11/2016
64	General view looking W	E	17/11/2016
65	General view looking S	N	17/11/2016
66	General view looking S	N	17/11/2016
67	General view looking SW	NE	17/11/2016
68	General view looking N	S	17/11/2016
69	General view of Great Hall	SW	17/11/2016
70	General view of Great Hall	SW	17/11/2016
71	General view of Great Hall	SW	17/11/2016
72	Mid-section of south face of RC04 – 003, 004 and 005	S	17/11/2016
73	Mid-section of south face of RC04 – 003 and 004	S	17/11/2016
74	Mid-section of south face of RC04 – 003, 004 and 005	S	17/11/2016
75	RC04 – Detail of 005 on south face	S	17/11/2016
76	RC04 – Detail of 005 on south-west corner	SW	17/11/2016
77	RC04 – Mid-section of south and west faces - 003, 004 and 005	SW	17/11/2016
78	RC04 – Mid-section of south and east faces - 003, 004 and 005	SE	17/11/2016
79	RC04 – Mid-section of east face - 003 and 004	E	17/11/2016
80	RC04 – east corner of 004 and 005	SE	17/11/2016
81	General shot – King’s knot	NE	17/11/2016
82	General shot – Lion finial on south-west corner of Palace	N	17/11/2016
83	General shot – King’s Old Building and Army Kitchen	S	17/11/2016
84	General shot – Lion finial on north-west corner of Palace	S	17/11/2016
85	General shot – Army Kitchen	SE	17/11/2016
86	General shot – King’s knot	NE	17/11/2016
87	RC14 – east face - 001	SE	17/11/2016
88	RC14 – east face - 001	NE	17/11/2016
89	RC14 – east face – Detail of 001 showing erosion	E	17/11/2016
90	RC14 – north face – Detail of base (001)	N	17/11/2016
91	RC14 – north face – Detail of top (001)	N	17/11/2016
92	RC14 – south face - 001	S	17/11/2016
93	Chimney RC03 below scaffolding – 021 and 023	SE	18/11/2016
94	Chimney RC03 below scaffolding – 021 and 023 – Detail of east end	SE	18/11/2016
95	Base of west side of RC05 showing junction with north and east Ranges	SW	18/11/2016
96	Base of west side of RC05 showing junction with north and east Ranges	S	18/11/2016
97	Base of west side of RC05 – 001, 002, 003, 004, 029, 030 and 032	S	18/11/2016
98	2 nd level of west side of south face of RC05 – 001, 003 and 004	S	18/11/2016
99	2 nd level of west side of south face of RC05 – Detail of base	S	18/11/2016
100	2 nd level of west side of south face of RC05 – Detail of top	S	18/11/2016

No.	Description	From	Date
101	2 nd level of west side of south face of RC05 – Detail of top of 001	S	18/11/2016
102	2 nd level of south-west corner of RC05 – 001, 003 and 004	SW	18/11/2016
103	2 nd level of west face of RC05 – 004	SW	18/11/2016
104	Base of north face of RC05 – 013 and 014	NW	18/11/2016
105	Base of north face of RC05 – Detail of west end - 013	N	18/11/2016
106	Base of north face of RC05 – Detail of east end – 013 and 014	NW	18/11/2016
107	General shot looking NW	SE	18/11/2016
108	General shot looking NW	SE	18/11/2016
109	General shot looking north along east Range	S	18/11/2016
110	General shot of 2 nd and 3 rd levels of south face of RC05	SE	18/11/2016
111	RC05 – south face, east end – 001, 004, 005 and 006	SE	18/11/2016
112	RC05 – south face – Detail of top of 001 and projecting course 005	SW	18/11/2016
113	RC05 – south face – Detail of projecting course 005 and ridge tile 009	W	18/11/2016
114	N side of Palace with scaffolding	N	18/11/2016
115	N side of Palace with scaffolding	N	18/11/2016
116	N side of Palace with scaffolding	N	18/11/2016
117	W side of Palace with scaffolding	W	18/11/2016
118	W side of RC14 from Ladies Lookout - 001	W	18/11/2016
119	RC02 and RC03 – Chimney heads uncovered	W	18/11/2016
120	RC02 – View down flue - 004	S	18/11/2016
121	RC02 – Chimney head – 003 and 004	NW	18/11/2016
122	RC02 – View down flue	S	18/11/2016
123	RC02 – View down flue	S	18/11/2016
124	General shot – Paul recording RC03	W	18/11/2016
125	RC03 – Chimney head – 001 with cross-walls 006 and 007	W	18/11/2016
126	RC03 – Chimney head – 001 with cross-walls 006 and 007	E	18/11/2016
127	RC03 – Chimney head – Detail of west end – 001 and 007	S	18/11/2016
128	RC03 – Chimney head – Detail of east end – 001 and 006	S	18/11/2016
129	SE corner of RC03 showing build 010	SE	21/11/2016
130	RC03 – Cut 015 in build 010	SE	21/11/2016
131	General shot looking NE	SW	21/11/2016
132	General shot looking NE	SW	21/11/2016
133	RC03 – north face - Build 025	NE	21/11/2016
134	RC03 – north face - Build 025	NE	21/11/2016
135	RC05 – Upper build – south-west corner – 020, 022 and 024	SW	21/11/2016
136	RC05 – Upper build – west end of south face - 020, 022 and 024	S	21/11/2016
137	RC05 – Upper build - west end of south face - 022 and 024 (above photo 8)	S	21/11/2016
138	RC05 – Upper build - east end of south face - 021 and 022	S	21/11/2016
139	RC05 – Upper build - east end of south face - 021 and 022 (above photo 10)	S	21/11/2016
140	RC05 – Upper build – west face - 020	W	21/11/2016
141	RC05 – Upper build - west face – 024 (above photo 12)	W	21/11/2016
142	RC05 – Upper build - north face – 020, 022 and 024	NW	21/11/2016
143	RC05 – Upper build - north face, west end – 020, 022 and 024	N	21/11/2016
144	RC05 – Upper build – north-east corner - 020, 022 and 024	NE	21/11/2016
145	RC05 – Upper build – Middle of north face – 024	W	21/11/2016
146	RC05 – Upper build - Middle of north face – 024 (above photo 17)	N	21/11/2016
147	RC05 – Upper build – east end of north face – 021 and 024	N	21/11/2016
148	RC05 – Upper build – north-east corner – 021 and 007	NE	21/11/2016
149	RC05 – Upper build – east face - 021 and 007	E	21/11/2016
150	RC05 – Upper build – 021 and 024 (above photo 21)	E	21/11/2016
151	RC05 – Upper build – south-east corner - 021, 022 and 024	SE	21/11/2016

No.	Description	From	Date
152	RC05 – Top of chimney – 024, 025 and 026	NW	21/11/2016
153	RC05 – Top of chimney – north face - 024, 025 and 026	N	21/11/2016
154	RC05 – Top of chimney – north face, detail of west end - 024, 025 and 026	N	21/11/2016
155	RC05 – Top of chimney – north face, detail of east end - 024, 025 and 026	N	21/11/2016
156	RC05 – Top of chimney – 024, 025 and 026	NE	21/11/2016
157	RC05 – Top of chimney – 024, 025, 026, 048, 049 and 050	E	21/11/2016
158	RC05 – Top of chimney –E face - 024, 025 and 026	E	21/11/2016
159	RC05 – Top of chimney – south face - 024, 025 and 026	SW	21/11/2016
160	RC05 – Top of chimney – south face, east end - 024, 025 and 026	S	21/11/2016
161	RC05 – Top of chimney – south face, west end - 024, 025 and 026	S	21/11/2016
162	RC05 – Top of chimney – west face - 024, 025 and 026	W	21/11/2016
163	RC05 – Top of chimney – west face - 024, 025 and 026	W	21/11/2016
164	RC05 – Top of chimney – west end – 026, 048-051	S	21/11/2016
165	RC05 – Top of chimney – east end – 026, 048-051	S	21/11/2016
166	RC05 – Top of chimney – Detail of flues 048-051	S	21/11/2016
167	RC05 – Top of chimney – Detail of east flue	S	21/11/2016
168	RC05 – Top of chimney – Detail of central flue	S	21/11/2016
169	RC05 – Top of chimney – Detail of west flue	S	21/11/2016
170	Thorsten working on RC08	N	21/11/2016
171	Thorsten working on RC08	N	21/11/2016
172	Lion finial on south-east corner of Palace	W	21/11/2016
173	Lion finial on south-east corner of Palace	W	21/11/2016
174	General shot looking SW	NE	21/11/2016
175	General shot of RC11 and RC13	E	21/11/2016
176	General shot of RC11	NE	21/11/2016
177	General shot of RC13	NE	21/11/2016
178	Base of east face of RC11	NE	21/11/2016
179	E face of RC10	E	21/11/2016
180	General shot of east face of Palace	E	21/11/2016
181	General shot of east face of Palace	E	21/11/2016
182	E face of RC05 – 005-007	E	21/11/2016
183	Altered windows in south face of north Range showing wash course over them	S	21/11/2016
184	General shot of RC02 and RC03	NE	21/11/2016
185	N face of RC03 – 013, 025 and 027	NE	21/11/2016
186	N face of RC03 – 013, 025 and 027	NE	21/11/2016
187	Base of north face of RC08 – 001-003	N	21/11/2016
188	Top of north face of RC08 – 001 and 004	N	21/11/2016
189	Base of east face of RC08 – 001 and 002	E	21/11/2016
190	Top of east face of RC08 – 001 and 004	E	21/11/2016
191	Base of south face of RC08 – 001-003	S	21/11/2016
192	Top of south face of RC08 – 001 and 004	S	21/11/2016
193	Base of west face of RC08 – 001 and 003	W	21/11/2016
194	Top of west face of RC08 – 001 and 004	W	21/11/2016
195	General shot of south face of RC05	S	21/11/2016
196	Lion finial on south-east corner of Palace	NW	21/11/2016
197	Lion finial on south-east corner of Palace	NW	21/11/2016
198	Lion finial on south-east corner of Palace	NW	21/11/2016
199	Top of RC08 – Flagstone capping 007	E	23/11/2016
200	Top of RC08 – Flagstone capping 007	S	23/11/2016
201	RC07 – Detail of south-east corner of moulded course 003	SE	23/11/2016

No.	Description	From	Date
202	RC07 – Detail of south-east corner of moulded course 003	S	23/11/2016
203	Top of RC07 – Flagstone capping 006	W	23/11/2016
204	Lion finial on south-east corner of Palace	NW	23/11/2016
205	Lion finial on south-east corner of Palace, detail of base	W	23/11/2016
206	RC07 – Base of south face – Scaffold 1 – 001 and 002	SW	23/11/2016
207	RC07 – Base of west face – Scaffold 1 – 002	W	23/11/2016
208	RC07 – Base of west face – Scaffold 1 – 002 (above photo 9)	W	23/11/2016
209	RC07 – west face base of scaffold 2 – 002	W	23/11/2016
210	RC07 – west face top of scaffold 2 – 002	W	23/11/2016
211	RC07 – north face base of scaffold 2 – 002	NW	23/11/2016
212	RC07 – north face base of scaffold 2 west end – 002	N	23/11/2016
213	RC07 – north face top of scaffold 2 west end – 002	NW	23/11/2016
214	RC07 – north face – Scaffold 2 east end – 002	N	23/11/2016
215	RC07 – west face – Scaffold 3 base – 002	W	23/11/2016
216	RC07 – west face – Scaffold 3 top – 002-004	W	23/11/2016
217	RC07 – Detail of moulding on west face of 003	W	23/11/2016
218	RC07 – north face – Scaffold 3 base – 002	NW	23/11/2016
219	RC07 – north face – Scaffold 3 top – 002-004	NW	23/11/2016
220	RC07 – north face – Scaffold 3 base – 002	NE	23/11/2016
221	RC07 – north face – Scaffold 3 top – 002-004	NE	23/11/2016
222	RC07 – Detail of moulding on north face of 003	N	23/11/2016
223	RC07 – Detail of moulding on north face of 003	N	23/11/2016
224	RC07 – Base of north face	NW	23/11/2016
225	General views to NW	SE	23/11/2016
226	General views to NW	SE	23/11/2016
227	General views to NE	SW	23/11/2016
228	General views to NE	SW	23/11/2016
229	View along roof of east Range	N	23/11/2016
230	RC09 – east end of base – 001-007	NE	23/11/2016
231	RC09 – east end of base – 001-007	N	23/11/2016
232	RC09 – west end of base – 001-003	NE	23/11/2016
233	RC09 base – 001-003	NE	23/11/2016
234	RC09 – west end of base – 001-003, 025 and 026	N	23/11/2016
235	RC09 – General view	NE	23/11/2016
236	RC07 – south-west corner – Scaffold 2 – 001 and 002	SW	23/11/2016
237	RC07 – south face west end base – Scaffold 2 – 001 and 002	SW	23/11/2016
238	RC07 – south face west end top – Scaffold 2 – 001 and 002	SW	23/11/2016
239	RC07 – south face east end base – Scaffold 2 – 001 and 002	SW	23/11/2016
240	RC07 – south face east end top – Scaffold 2 – 001 and 002	SW	23/11/2016
241	RC07 – south face west end base – Scaffold 3 – 002-004 and 014	SW	23/11/2016
242	RC07 – south face – Scaffold 3 – 002	SE	23/11/2016
243	RC07 – south face – Detail of west end of moulded course 003 and 014	S	23/11/2016
244	RC07 – south face – Detail of middle of moulded course 003 and 015	S	23/11/2016
245	RC07 – south face – Detail of east end of moulded course 003	S	23/11/2016
246	RC07 – Detail of 003 and 014	S	23/11/2016
247	RC07 – Detail of 003 and 014	S	23/11/2016
248	General shot looking NW	SE	23/11/2016
249	General shot looking NE	SW	23/11/2016
250	General shot of Palace	SE	24/11/2016
251	General shot of scaffolding on the Prince's Tower chimneys	SE	24/11/2016
252	General shot of scaffolding on the south-east corner of the Palace	SE	24/11/2016
253	General shot of RC11, RC12 and RC13	SE	24/11/2016

No.	Description	From	Date
254	General shot of RC11, RC12 and RC13	SE	24/11/2016
255	General shot of Paul working on RC09	NW	24/11/2016
256	RC09 – Detail of cut 005	NE	24/11/2016
257	RC09 – Scaffold 2 – Base of north-east corner	NE	24/11/2016
258	RC09 – Scaffold 2 – Top of north-east corner	NE	24/11/2016
259	RC09 – Scaffold 2 – Base of east end of north face	N	24/11/2016
260	RC09 – Scaffold 2 – Top of east end of north face	N	24/11/2016
261	RC09 – Scaffold 2 – Base of middle of north face	N	24/11/2016
262	RC09 – Scaffold 2 – Top of middle of north face	N	24/11/2016
263	RC09 – Scaffold 2 – Base of west end of north face	NE	24/11/2016
264	RC09 – Scaffold 2 – Top of west end of north face	NE	24/11/2016
265	RC09 – Scaffold 3 – Base of north-east corner	NE	24/11/2016
266	RC09 – Scaffold 3 – Top of north-east corner	NE	24/11/2016
267	RC09 – Scaffold 3 – north face base	NE	24/11/2016
268	RC09 – Scaffold 3 – north face top	NE	24/11/2016
269	RC09 – Scaffold 3 – north face base	NW	24/11/2016
270	RC09 – Scaffold 3 – north face base of west end	N	24/11/2016
271	RC09 – Scaffold 3 – north face top of west end	W	24/11/2016
272	RC09 – Scaffold 3 – Base of north-west corner	NW	24/11/2016
273	RC09 – Scaffold 3 – Top of north-west corner	NW	24/11/2016
274	RC09 – Scaffold 4 – north-east corner	NE	24/11/2016
275	RC09 – Scaffold 4 – north face base	NE	24/11/2016
276	RC09 – Scaffold 4 – north face top	NE	24/11/2016
277	RC09 – Scaffold 4 – north face base (middle)	N	24/11/2016
278	RC09 – Scaffold 4 – north face top (middle)	N	24/11/2016
279	RC09 – Scaffold 4 – west end of north face base	NE	24/11/2016
280	RC09 – Scaffold 4 – west end of north face top	N	24/11/2016
281	RC09 – Scaffold 4 – Detail of north face of shoulder 015	N	24/11/2016
282	RC09 – Scaffold 2 – east face base	W	24/11/2016
283	RC09 – Scaffold 2 – east face top	W	24/11/2016
284	RC09 – Scaffold 3 – east face	W	24/11/2016
285	RC09 – Scaffold 3 – east face – Detail of base	W	24/11/2016
286	RC09 – Scaffold 3 – east face – Detail of top	W	24/11/2016
287	RC09 – Scaffold 2 – west face base	NW	24/11/2016
288	RC09 – Scaffold 2 – west face top	NW	24/11/2016
289	RC09 – Scaffold 3 – Base of south-west corner	SW	24/11/2016
290	RC09 – Scaffold 3 – Base of west face	W	24/11/2016
291	RC09 – Scaffold 3 – Top of west face	W	24/11/2016
292	RC09 – Cut 031 and parts of 033 and 034	S	24/11/2016
293	RC09 – Cut 031 and parts of 033 and 034	S	24/11/2016
294	RC09 – Base of cut 034 in south face	S	24/11/2016
295	RC09 – Base of cut 034 in south face	S	24/11/2016
296	RC09 – Base of cut 033 in south face	S	24/11/2016
297	RC09 – Cut 031 and parts of 033 and 034	SW	24/11/2016
298	RC09 – Cut 041 and infill 042 above	SW	24/11/2016
299	RC09 – Cut 041 and infill 042 above	SW	24/11/2016
300	RC09 – Infill 042 and 044	SW	24/11/2016
301	RC09 – Possible crow steps 052	N	24/11/2016
302	RC09 – Profile of east end of moulded course 002	E	24/11/2016
303	RC09 – east end of cut 034	NE	24/11/2016
304	RC09 – east end of cut 034	NE	24/11/2016
305	RC09 – Cut 041 and infill 042 and 044	W	24/11/2016
306	RC09 – Cut 041 and north end of infill 042	W	24/11/2016

No.	Description	From	Date
307	RC09 – 025, 026, 027 and 003	N	24/11/2016
308	General view looking S	N	24/11/2016
309	RC11 – north face	N	24/11/2016
310	RC09 – Scaffold 4 – Base of east face	E	24/11/2016
311	RC09 – Scaffold 4 – Middle of east face	E	24/11/2016
312	RC09 – Scaffold 4 – Top of east face	E	24/11/2016
313	General shot looking SW	NE	25/11/2016
314	General shot looking SW	NE	25/11/2016
315	General shot looking NE	SW	25/11/2016
316	General shot looking S	N	25/11/2016
317	General shot looking S	N	25/11/2016
318	General shot looking NE	SW	25/11/2016
319	Lion finial on north-west corner of Palace	SE	25/11/2016
320	Lion finial on north-west corner of Palace	SE	25/11/2016
321	RC04 – Moulded course 005 (for comparison with photos 121-22)	SE	25/11/2016
322	RC04 – Moulded course 005 (for comparison with photos 121-22)	S	25/11/2016
323	RC09 – Scaffold 3 – Base of west face	SW	25/11/2016
324	RC09 – Scaffold 3 – Base of west face	W	25/11/2016
325	RC09 – Scaffold 3 – Top of west face	W	25/11/2016
326	RC09 – Scaffold 3 – Base of north-west corner	NW	25/11/2016
327	RC09 – Scaffold 3 – Top of north-west corner	NW	25/11/2016
328	RC09 – Scaffold 3 – Base of south face	SW	25/11/2016
329	RC09 – Scaffold 3 – north face south end	NE	25/11/2016
330	RC09 – Scaffold 3 – north face east end	N	25/11/2016
331	RC09 – Scaffold 3 – north face west end	N	25/11/2016
332	RC09 – Scaffold 3 – south face	SE	25/11/2016
333	RC09 – Scaffold 3 – south face east end	S	25/11/2016
334	RC09 – Scaffold 3 – south face middle	S	25/11/2016
335	RC09 – Scaffold 3 – south face west end	S	25/11/2016
336	RC05 – Ridge tile 016	NW	25/11/2016
337	RC09 – 020, 021 and 057	E	19/12/2016
338	RC09 – 020, 021 and 057 – Detail of east end	S	19/12/2016
339	RC09 – 020, 021 and 057 – Detail of west end	S	19/12/2016
340	RC09 – 020, 021 and 057	W	19/12/2016
341	RC09 – 020, 021 and 057 – Detail of west end	N	19/12/2016
342	RC09 – 020, 021 and 057 – Detail of east end	N	19/12/2016
343	RC09 – Two flues in build 057	S	19/12/2016
344	RC09 – east flue in build 057	S	19/12/2016
345	RC09 – east flue in build 057	S	19/12/2016
346	RC09 – west flue in build 057	S	19/12/2016
347	RC09 – west flue in build 057	S	19/12/2016
348	RC04 – Scaffold 2 – Build 005 and repair 006, south face	S	19/12/2016
349	RC04 – Scaffold 2 – Build 005 and repair 006, south face – Detail of base	S	19/12/2016
350	RC04 – Scaffold 2 – Build 005 and repair 006, south face - Detail of top	S	19/12/2016
351	RC04 – Scaffold 2 – south and west faces – Build 005	SW	19/12/2016
352	RC04 – Scaffold 2 – west face – Build 005 – Detail of base of south end	W	19/12/2016
353	RC04 – Scaffold 2 – west face – Build 005 – Detail of top of south end	W	19/12/2016
354	RC04 – Scaffold 2 – west face – Build 005 – Detail of base of north end	W	19/12/2016

No.	Description	From	Date
355	RC04 – Scaffold 2 – west face – Build 005 – Detail of top of north end	W	19/12/2016
356	RC04 – Scaffold 2 – north and west faces – Build 005	NW	19/12/2016
357	RC04 – Scaffold 2 – north face – Detail of base of build 005	N	19/12/2016
358	RC04 – Scaffold 2 – north face – Detail of top of build 005	N	19/12/2016
359	RC04 – Scaffold 2 – north and east faces – Build 005	NE	19/12/2016
360	RC04 – Scaffold 2 – east face – Detail of base of north end of build 005	E	19/12/2016
361	RC04 – Scaffold 2 – east face – Detail of top of north end of build 005	E	19/12/2016
362	RC04 – Scaffold 2 – east face – Detail of base of south end of build 005	E	19/12/2016
363	RC04 – Scaffold 2 – east face – Detail of top of south end of build 005	E	19/12/2016
364	RC04 – Scaffold 3 – Build 009	S	19/12/2016
365	RC04 – Scaffold 3 – Build 009	SW	19/12/2016
366	RC04 – Scaffold 3 – Build 009	N	19/12/2016
367	RC04 – Scaffold 3 – Build 009	NE	19/12/2016
368	RC04 – Scaffold 3 – Build 009 – Detail of north end of top	E	19/12/2016
369	RC04 – Scaffold 3 – Build 009 – Detail of middle of top	E	19/12/2016
370	RC04 – Scaffold 3 – Build 009 – Detail of south end of top	E	19/12/2016
371	RC04 – Scaffold 3 – Build 009 – Detail of north flue	E	19/12/2016
372	RC04 – Scaffold 3 – Build 009 – Detail of south flue	E	19/12/2016
373	RC04 – Scaffold 3 – Build 008 – Detail of south end of east face	SE	19/12/2016
374	RC04 – Scaffold 3 – Build 008 – Detail of south end of east face	E	19/12/2016
375	RC04 – Scaffold 3 – Build 008 – Detail of north end of east face	NE	19/12/2016
376	RC04 – Scaffold 3 – Build 008 – Detail of north end of east face	E	19/12/2016
377	RC04 – Scaffold 3 – Build 008 – Detail of south end of west face	SW	19/12/2016
378	RC04 – Scaffold 3 – Build 008 – Detail of south end of west face	W	19/12/2016
379	RC04 – Scaffold 3 – Build 008 – Detail of north end of west face	NW	19/12/2016
380	RC04 – Scaffold 3 – Build 008 – Detail of north end of west face	W	19/12/2016
381	RC04 – 009 – Detail of raised ring around north flue	SW	19/12/2016
382	RC04 – Ridge tile 015	S	20/12/2016
383	RC04 – Ridge tile 017	S	20/12/2016
384	RC06 – General shot of west face	W	20/12/2016
385	RC06 – General shot of base of west face	W	20/12/2016
386	RC09 – General shot of west face	W	20/12/2016
387	RC09 – General shot of top of west face	W	20/12/2016
388	General shot of north-west corner of Palace	SE	20/12/2016
389	RC02 and RC03 – General shot of west faces	S	20/12/2016
390	General shot of west end of south roof of Palace	E	20/12/2016
391	General shot of Lion finial on south-west corner of Palace	E	20/12/2016
392	General shot of east end of south side of Palace	W	20/12/2016
393	General shot of Lion finial on south-west corner of Palace	SE	20/12/2016
394	General shot of RC08 and RC09	SW	20/12/2016
395	General shot of base of south and west faces of RC09	SW	20/12/2016
396	General shot of base of west face of RC09	W	20/12/2016
397	RC14 – 003	S	20/12/2016
398	RC14 – south end of west face	W	20/12/2016
399	RC14 – north end of west face	W	20/12/2016
400	RC14 – 003	N	20/12/2016
401	RC14 – north end of east face	E	20/12/2016
402	RC14 – south end of east face	E	20/12/2016

No.	Description	From	Date
403	RC14 – 002 and 003 south face	S	20/12/2016
404	RC14 – 002 – Detail of east end of south face	S	20/12/2016
405	RC14 – 002 – Detail of south end of west face	W	20/12/2016
406	RC14 – 002 – Detail of south end of west face	W	20/12/2016
407	RC14 – 002 – Detail of north face	N	20/12/2016
408	RC14 – 002 – Detail of north end of east face	NE	20/12/2016
409	RC14 – 002 – Detail of north end of east face	E	20/12/2016
410	RC14 – 003 – north end	E	20/12/2016
411	RC14 – 003 – south end	E	20/12/2016
412	RC14 – 003 – View down flue at south end	E	20/12/2016
413	RC14 – 003 – View down flue to north of shot 76	E	20/12/2016
414	RC14 – 003 – View down flue to north of shot 77	E	20/12/2016
415	RC14 – 003 – View down flue to north of shot 78	E	20/12/2016
416	RC14 – 003 – View down flue to north of shot 79	E	20/12/2016
417	Bricks 004 within flue	N	20/12/2016
418	Bricks 004 within flue	S	20/12/2016
419	Cut 022 behind lead flashing 021	N	20/12/2016
420	Ridge tile 024	E	20/12/2016
421	Ridge tile 025	E	20/12/2016
422	N end of west roof showing height difference with north roof	S	20/12/2016
423	S end of west roof showing height difference with south roof	N	20/12/2016
424	N end of west roof showing ridge tile	SW	20/12/2016
425	N end of west roof showing ridge tile	SW	20/12/2016
426	S end of west roof showing ridge tile	NW	20/12/2016
427	S end of west roof showing ridge tile	NW	20/12/2016
428	General view of chimneys on the Prince's Tower	NE	16/1/2017
429	E face of RC10	NE	16/1/2017
430	S face of RC09 – Builds 013 and 014	SE	16/1/2017
431	S face of RC10	S	16/1/2017
432	S face of RC10 – Detail of base	S	16/1/2017
433	S face of RC10 – Detail of middle	S	16/1/2017
434	S face of RC10 – Detail of 002 and 003	S	16/1/2017
435	W face of RC10	SW	16/1/2017
436	W face of RC10 – Detail of base	SW	16/1/2017
437	W face of RC10 – Detail of middle	SW	16/1/2017
438	W face of RC10 – Detail of 002 and 003	SW	16/1/2017
439	N face of RC10 – Detail of base	N	16/1/2017
440	NE corner of RC10 – Detail of base	NE	16/1/2017
441	N face of RC10 – Detail of middle	N	16/1/2017
442	N face of RC10 – Detail of 002 and 003	N	16/1/2017
443	E face of RC10 – Detail of middle	NE	16/1/2017
444	E face of RC10 – Detail of 002 and 003	NE	16/1/2017
445	N face of RC12 showing scars 011 and 013	N	16/1/2017
446	N face of RC12 showing top of scar 011	N	16/1/2017
447	N face of RC12 showing base of west end of scar 011	NE	16/1/2017
448	N face of RC12 showing scars 011 and 013	N	16/1/2017
449	RC10 – Slab capping 005	S	16/1/2017
450	RC10 – Slab capping 005	SW	16/1/2017
451	RC10 – Slab capping 005	N	16/1/2017
452	General shot of RC11	NE	16/1/2017
453	RC11 – Top with flagstones 024 removed	E	16/1/2017
454	RC11 – Top with flagstones 024 removed – east end	S	16/1/2017
455	RC11 – Top with flagstones 024 removed – Middle	S	16/1/2017

No.	Description	From	Date
456	RC11 – Top with flagstones 024 removed – west end	S	16/1/2017
457	RC11 – Top with flagstones 024 removed	W	16/1/2017
458	RC11 – Top with flagstones 024 removed – west end	N	16/1/2017
459	RC11 – Top with flagstones 024 removed – Middle	N	16/1/2017
460	RC11 – Top with flagstones 024 removed – east end	N	16/1/2017
461	RC11 – Detail of east face of 021 and 022 (and top of 002)	E	16/1/2017
462	RC11 – Detail of east face of 021 and 022 (and top of 002) north end	E	16/1/2017
463	RC11 – Detail of east face of 021 and 022 (and top of 002) south end	E	16/1/2017
464	RC11 – Detail of east face of moulding 021 – south end	E	16/1/2017
465	RC11 – east face - 021 and 022 (and top of 002)	SE	16/1/2017
466	RC11 – south face, east end (S extension) - 021 and 022 (and tops of 002, 028 and 043)	S	16/1/2017
467	RC11 – south face – Detail of moulding 021	S	16/1/2017
468	RC11 – south face – south-west corner of south extension (top) – 021 and 022	SW	16/1/2017
469	RC11 – south face – west face of south extension (top) – 021, 022 and 043	W	16/1/2017
470	RC11 – south face – north-west corner of south extension (top) – 001, 021 and 043	SW	16/1/2017
471	RC11 – south face – east end to west of south extension – 001, 021 and 022	S	16/1/2017
472	RC11 – south face – Middle – 001, 021 and 022	S	16/1/2017
473	RC11 – south face – west end – 001, 021 and 022	S	16/1/2017
474	RC11 – west face – Top of 001, 021 and 022	W	16/1/2017
475	RC11 – west face – Detail of moulding 021	W	16/1/2017
476	RC11 – north face – Detail of west end – 001, 004, 021 and 022	N	16/1/2017
477	RC11 – north face – Detail of west middle – 004, 021 and 022	N	16/1/2017
478	RC11 – north face – Detail of east middle – 004, 021 and 022	N	16/1/2017
479	RC11 – north face – Detail of east end – 002, 004, 021 and 022	N	16/1/2017
480	RC11 – north face – Detail of moulding 021	NE	16/1/2017
481	RC11 – north face – Top of 004, 021 and 022	NE	16/1/2017
482	RC11 – Top – Detail of flue at east end of south extension	S	16/1/2017
483	RC11 – Top – Detail of flue at east end of south extension	S	16/1/2017
484	RC11 – Top – Detail of flue at west end	S	16/1/2017
485	RC11 – Top – Detail of flue in south extension	S	16/1/2017
486	RC11 – Top – Detail of flue in south extension	S	16/1/2017
487	RC11 – Top – Detail of flue in south extension	S	16/1/2017
488	RC11 – Top – Detail of flue at east end	S	16/1/2017
489	RC11 – Top – Detail of flue at east end	S	16/1/2017
490	RC11 – Top – Detail of flue at west end	S	16/1/2017
491	RC11 – Top – Detail of flue at west end	S	16/1/2017
492	RC11 – Top – Detail of flue at west end	S	16/1/2017
493	RC12 – east face – 001, 002 and 003	E	16/1/2017
494	RC12 – east face – Detail of base - 001, 002 and 003	E	16/1/2017
495	RC12 – east face – Detail of 002	E	16/1/2017
496	RC12 – east face – Detail of cut 013 on east face of 001	E	16/1/2017
497	RC12 – west face – Detail of 003	W	16/1/2017
498	RC12 – west face – Detail of 003	W	16/1/2017
499	RC12 – west face – Detail of 001, 002 and 003	W	16/1/2017
500	RC12 – north face – Detail of 002, 003 and top of scar 011	N	16/1/2017
501	RC12 – north face – Detail of 001 and 002 showing cuts 011 and 013	N	16/1/2017
502	RC12 – north face – Detail of top of cut 011	N	16/1/2017
503	RC12 – north face – Detail of base of cuts 011 and 013	N	16/1/2017

No.	Description	From	Date
504	RC12 – east face – Detail of 003	E	16/1/2017
505	RC12 – east face – Detail of top of 003	E	16/1/2017
506	RC12 – east face – Detail of base of 003	E	16/1/2017
507	RC12 – south face – Detail of base of 003	S	16/1/2017
508	RC12 – south face – Detail of top of 003	S	16/1/2017
509	RC12 – south-east corner - Detail of 003	SE	16/1/2017
510	RC12 – west face – Base of 003	W	16/1/2017
511	RC12 – west face – Top of 003	W	16/1/2017
512	RC12 – M face – Base of 003	N	16/1/2017
513	RC12 – north face – Top of 003	N	16/1/2017
514	RC10 – Top with flagstones 005 lifted showing flues in 003	N	16/1/2017
515	RC10 – Top with flagstones 005 lifted showing flues in 003	E	16/1/2017
516	RC10 – Top with flagstones 005 lifted showing flues in 003	S	16/1/2017
517	RC10 – Top with flagstones 005 lifted showing flues in 003	W	16/1/2017
518	RC10 – north flue	S	16/1/2017
519	RC10 – north flue	S	16/1/2017
520	RC10 – south flue	S	16/1/2017
521	RC10 – south flue	S	16/1/2017
522	RC10 – south flue	S	16/1/2017
523	RC11 – General shot	NE	16/1/2017
524	RC12 – Top with flagstones 007 lifted showing flues in 005	E	16/1/2017
525	RC12 – Top with flagstones 007 lifted showing flues in 005	S	16/1/2017
526	RC12 – Top with flagstones 007 lifted showing flues in 005	W	16/1/2017
527	RC12 – Top with flagstones 007 lifted showing flues in 005	N	16/1/2017
528	RC12 – Top with flagstones 007 lifted showing flues in 005	S	16/1/2017
529	RC12 – Top with flagstones 007 lifted showing flues in 005	S	16/1/2017
530	RC12 – east flue in 005 showing cement lining 018	S	16/1/2017
531	RC12 – east flue in 005 showing cement lining 018	S	16/1/2017
532	RC12 – west flue in 005 showing partition wall 016	S	16/1/2017
533	RC12 – west flue in 005 showing partition wall 016	S	16/1/2017
534	RC06 – General shot of west face	W	17/1/2017
535	RC06 – Base of west face – 001, 007 and 008 (Scaffold 1)	W	17/1/2017
536	RC06 – west face above shot 108 – 001 (Scaffold 2)	W	17/1/2017
537	RC06 – west face above shot 109 – 001 (Scaffold 3)	W	17/1/2017
538	RC06 – west face above shot 110 – 001, 003-004 (Scaffold 4)	W	17/1/2017
539	RC06 – south end of base of west face – 001, 007 and 008	W	17/1/2017
540	RC06 – Base of west face – 001, 007 and 008	NW	17/1/2017
541	RC06 – Base of west face – 007 and 008	NW	17/1/2017
542	RC06 – south end of base of west face – 007	NW	17/1/2017
543	RC06 – Slabs 006	S	17/1/2017
544	RC06 – Slabs 006	N	17/1/2017
545	RC06 – Top of south and east faces – 001, 003 and 004	SE	17/1/2017
546	RC06 – east face, south end, Scaffold 4 base – 001, 003 and 004	E	17/1/2017
547	RC06 – east face, south end, Scaffold 4 top – 001, 003 and 004	E	17/1/2017
548	RC06 – east face, middle, Scaffold 4 base – 001	E	17/1/2017
549	RC06 – east face, middle, Scaffold 4 top – 001, 003 and 004	E	17/1/2017
550	RC06 – east face, north end, Scaffold 4 base – 001	E	17/1/2017
551	RC06 – east face, north end, Scaffold 4 top – 001, 003 and 004	E	17/1/2017
552	RC06 – Detail of moulding 003	SE	17/1/2017
553	RC06 – south face - Scaffold 4 base – 001	S	17/1/2017
554	RC06 – south face - Scaffold 4 top – 001, 003 and 004	S	17/1/2017
555	RC06 – south face - Detail of moulding 003	S	17/1/2017
556	RC06 – south and west faces - Scaffold 4 – 001, 003 and 004	SW	17/1/2017

No.	Description	From	Date
557	RC06 – west face, south end, Scaffold 4 base – 001	W	17/1/2017
558	RC06 – west face, south end, Scaffold 4 top – 001, 003 and 004	W	17/1/2017
559	RC06 – west face, north end, Scaffold 4 base – 001	W	17/1/2017
560	RC06 – west face, north end, Scaffold 4 top – 001, 003 and 004	W	17/1/2017
561	RC06 – north face - Scaffold 4 base – 001	N	17/1/2017
562	RC06 – north face - Scaffold 4 top – 001, 003 and 004	N	17/1/2017
563	RC06 – north-west corner - Detail of moulding 003	NW	17/1/2017
564	RC11 – Scaffold 1 – south-east corner – 002 and 005	SE	18/1/2017
565	RC11 – Scaffold 1 – Base of south face – 002, 005, 013 and 045	E	18/1/2017
566	RC11 – Scaffold 1 – Top of south face – 002	E	18/1/2017
567	RC11 – Scaffold 1 – south face – 001-004, 028 and 045	SE	18/1/2017
568	RC11 – Scaffold 1 – south face – 001, 003, 004 and 045	SW	18/1/2017
569	RC11 – Scaffold 1 – south face of south extension base – 002, 028 and 045	S	18/1/2017
570	RC11 – Scaffold 1 – south face of south extension top – 002, 028 and 045	S	18/1/2017
571	RC11 – Scaffold 1 – west face of south extension – General view 045	W	18/1/2017
572	RC11 – Scaffold 1 – west face of south extension base – 003 and 045	W	18/1/2017
573	RC11 – Scaffold 1 – west face of south extension top – 001 and 045	W	18/1/2017
574	RC11 – Scaffold 1 – south face to west of south extension base – 001 and 003	S	18/1/2017
575	RC11 – Scaffold 1 – south face to west of south extension top – 001 and 003	S	18/1/2017
576	RC11 – Scaffold 1 – south face west end base – 001, 003 and 004	S	18/1/2017
577	RC11 – Scaffold 1 – south face west end top – 001, 003 and 004	S	18/1/2017
578	RC11 – Scaffold 1 – north face - General view of west end	N	18/1/2017
579	RC11 – Scaffold 1 – north face west end base – 001 and 004	N	18/1/2017
580	RC11 – Scaffold 1 – west face – 001, 006-008	N	18/1/2017
581	RC11 – Scaffold 1 – north face middle – 004, 010, 011 and 019	N	18/1/2017
582	RC11 – Scaffold 1 – west face – 001 and 006-008	W	18/1/2017
583	RC11 – Scaffold 1 – east end of north face	N	18/1/2017
584	RC11 – Scaffold 1 – Top of west face – 001	NW	18/1/2017
585	RC11 – Scaffold 1 – north-west corner – 001, 004 and 006-008	NW	18/1/2017
586	RC11 – Scaffold 1 – north-west corner – 001, 004 and 006-008	NW	18/1/2017
587	RC11 – Scaffold 1 – north-east corner – Scaffold 1 - 002, 004 and 005	NE	18/1/2017
588	RC11 – Scaffold 1 – north face – Scaffold 1 east end base - 002, 004, 011 and 012	N	18/1/2017
589	RC11 – Scaffold 1 – north face – Scaffold 1 east end top – 002 and 004	N	18/1/2017
590	RC11 – Ridge tiles 010	NE	18/1/2017
591	RC11 – Detail of 005	NE	18/1/2017
592	RC11 – Detail of south end of 005 and 013 showing cut 045	NE	18/1/2017
593	RC11 – Base of west end of north face – 018-019	N	18/1/2017
594	RC11 – Base of west end of north face – 018-019	N	18/1/2017
595	RC11 – north end of 009 showing cut 031	NE	18/1/2017
596	General shots of the west face of the Prince's Tower	NW	18/1/2017
597	General shots of the west face of the Prince's Tower	NW	18/1/2017
598	General shots of the west face of the Prince's Tower	NW	18/1/2017
599	General shots of the west face of the Prince's Tower	NW	18/1/2017
600	RC11 – General shot of north face	NE	18/1/2017
601	RC11 – General shot of north face	NE	18/1/2017
602	RC11 – Base of east end of north face – 011, 012 and cut 032	N	18/1/2017

No.	Description	From	Date
603	RC11 – Base of east end of north face – Detail of cut 032	N	18/1/2017
604	RC11 – Base of east end of north face – Detail of cut 032	NW	18/1/2017
605	RC11 – Base of east end of north face – Detail of cut 032	NW	18/1/2017
606	RC06 – General shot of east face	NE	18/1/2017
607	RC11 – General shot of base of east face – 012, 015-017, 039 and 041	E	19/1/2017
608	RC11 – Top of lowest part of east face (below scaffold) – 012, 015-017 and 041	E	19/1/2017
609	RC11 – Base of lowest part of east face (below scaffold) – 012, 039 and 040	E	19/1/2017
610	RC11 – Junction of 015 and 017	NE	19/1/2017
611	RC11 – Junction of 017 and 041 – Cut 042	NE	19/1/2017
612	Blocked window in the north face of the Prince's Tower	NE	19/1/2017
613	RC11 – Junction of 015 and 017	NE	19/1/2017
614	RC11 – General shot of base of east face	E	19/1/2017
615	RC11 – Junction of 015 and 017	E	19/1/2017
616	General shots of sculptures on Palace	SE	19/1/2017
617	General shots of sculptures on Palace	SE	19/1/2017
618	S face of the Prince's Tower	S	19/1/2017
619	Top of Prince's Tower chimney RC13	S	19/1/2017
620	RC13 – Base of south face	S	19/1/2017
621	RC13 – Top of south face	S	19/1/2017
622	RC12 – south face	S	19/1/2017
623	RC12 – south face	S	19/1/2017
624	RC12 – south face	S	19/1/2017
625	RC11 – Base of west and north faces	NW	19/1/2017
626	RC11 – Base of west and north faces	NW	19/1/2017
627	RC06 – Scaffold 3 – south-east corner – 001 and 002	SE	20/1/2017
628	RC06 – Scaffold 3 – east face, south end base – 002	E	20/1/2017
629	RC06 – Scaffold 3 – east face, south end top – 001 and 002	E	20/1/2017
630	RC06 – Scaffold 3 – east face, north end base – 001 and 002	E	20/1/2017
631	RC06 – Scaffold 3 – east face, north end top – 001 and 002	E	20/1/2017
632	RC06 – 011 – west end	S	20/1/2017
633	RC06 – 011 – west end	E	20/1/2017
634	RC06 – 011 – east end	W	20/1/2017
635	RC06 – Scaffold 3 – south face base – 001	S	20/1/2017
636	RC06 – Scaffold 3 – south face top – 001	S	20/1/2017
637	RC06 – Scaffold 3 – south-west corner – 001	SW	20/1/2017
638	RC06 – Scaffold 3 – west face, south end base – 001	W	20/1/2017
639	RC06 – Scaffold 3 – west face, south end top – 001	W	20/1/2017
640	RC06 – Scaffold 3 – west face, north end base – 001	W	20/1/2017
641	RC06 – Scaffold 3 – west face, north end top – 001	W	20/1/2017
642	RC06 – Scaffold 3 – north-west corner – 001	NW	20/1/2017
643	RC06 – Scaffold 3 – north face base – 001	N	20/1/2017
644	RC06 – Scaffold 3 – north face top – 001	N	20/1/2017
645	RC06 – Scaffold 2 – south-east corner – 001 and 002	SE	20/1/2017
646	RC06 – Scaffold 2 – east face, south end base – 001 and 002	E	20/1/2017
647	RC06 – Scaffold 2 – east face, south end top – 001 and 002	SE	20/1/2017
648	RC06 – Scaffold 2 – north-east corner – 001 and 002	NE	20/1/2017
649	RC06 – Scaffold 2 – east face, north end base – 001 and 002	NE	20/1/2017
650	RC06 – Scaffold 2 – south face base – 001	S	20/1/2017
651	RC06 – Scaffold 2 – south face top – 001	S	20/1/2017
652	RC06 – Scaffold 2 – south face, east end – 001 and 010	S	20/1/2017

No.	Description	From	Date
653	RC06 – Scaffold 2 – west face, south end base – 001	W	20/1/2017
654	RC06 – Scaffold 2 – west face, south end top – 001	W	20/1/2017
655	RC06 – Scaffold 2 – west face, north end base – 001	W	20/1/2017
656	RC06 – Scaffold 2 – west face, north end top – 001	W	20/1/2017
657	RC06 – Scaffold 2 – west face - north-west corner – 001	NW	20/1/2017
658	RC06 – Scaffold 2 – north face	N	20/1/2017
659	RC06 – Scaffold 2 – north face base – 001 and 009	N	20/1/2017
660	RC06 – Scaffold 2 – north face base – Detail of 009	N	20/1/2017
661	RC06 – Scaffold 2 – north face top – 001	N	20/1/2017
662	RC06 – Scaffold 1 – west face, south end – 001	W	20/1/2017
663	RC06 – Scaffold 1 – west face, west end	W	20/1/2017
664	RC06 – Scaffold 1 – west face general shot – 001, 007 and 008	NW	20/1/2017
665	RC06 – Scaffold 1 – west face base, south end – 007 and 008	W	20/1/2017
666	RC06 – Scaffold 1 – west face base, middle – 007 and 008	W	20/1/2017
667	RC06 – Scaffold 1 – west face base, north end – 007 and 008	W	20/1/2017
668	RC06 – Scaffold 1 – west face general shot – 007 and 008	NW	20/1/2017
669	RC06 – Scaffold 1 – south face – 001	S	20/1/2017
670	RC06 – Scaffold 1 – north face – 001	N	20/1/2017
671	RC12 – Junction of 013, 014, 015 and 017	E	20/1/2017
672	RC12 – Re-used stone 042 in 039	E	20/1/2017
673	RC12 – Re-used stone 042 – Detail of north end	NE	20/1/2017
674	RC12 – 015 and 016	N	20/1/2017
675	RC12 – 015 and 016	N	20/1/2017
676	RC12 – north-east corner base – 011, 012, 017 and 039	NE	20/1/2017
677	RC12 – north-east corner base – 011, 012, 017 and 039	NE	20/1/2017
678	RC12 – 015-017 and top of 041	NE	20/1/2017
679	RC13 – north face upper section	N	24/8/2017
680	RC13 – chimney crown (features 002-005) in plan	N	24/8/2017
681	RC13 – west face upper section	W	24/8/2017
682	RC13 – south face upper section	S	24/8/2017
683	RC13 – east face upper section	E	24/8/2017
684	RC13 – north face middle section	NW	24/8/2017
685	RC13 – west face middle section	NW	24/8/2017
686	RC13 – south face middle section	SW	24/8/2017
687	RC13 – east face middle section	SE	24/8/2017
688	RC13 under scaffold	SE	24/8/2017
689	RC13 under scaffold	S	24/8/2017
690	RC13 under scaffold	S	24/8/2017
691	RC13 under scaffold	S	24/8/2017
692	RC13 under scaffold	SE	24/8/2017
693	RC13 – west parapet 010	W	24/8/2017
694	RC13 – lower chimney build 008 on south attic gable of Princes Tower	W	24/8/2017
695	RC13 – lower chimney build 008 on south attic gable of Princes Tower	W	24/8/2017
696	RC13 – lower chimney build 008 on south attic gable of Princes Tower	W	24/8/2017
697	RC13 – lower chimney build 008 on south attic gable of Princes Tower	W	24/8/2017
698	RC13 – lower chimney build 008 on south attic gable of Princes Tower	W	24/8/2017