

## *Discovery and Excavation in Scotland*

Updated on 15/06/2007

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<b>NAME OF CONTRIBUTOR:</b>	Gordon Ewart
<b>NAME OF ORGANISATION:</b>	Kirkdale Archaeology
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<b>MAIN (NARRATIVE) DESCRIPTION:</b> (May include information from other fields)	A watching brief was carried out and archaeological recording undertaken during remedial work in room U20, located at the SE-corner of Stirling Castle Palace immediately above the NE corner of the Queen's Bedchamber. This work required the removal of some of the lath and plaster on the N elevation of the room, which revealed the main build of the N wall of the palace behind. This presented a rare opportunity to make a record of this feature, which was duly drawn, photographed and a written description made.
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**Historic Scotland  
Properties in Care  
Minor Archaeological Works 2010**

**Stirling Castle Palace:  
Lath & Plaster Removal in U20  
June 2010**

**HS PIC Index Number: 90291  
Project Code: HSCO-90291-2010-01**



**30<sup>th</sup> June 2010  
Kirkdale Archaeology**

<b><u>Site</u></b>	Stirling Castle Palace, Stirling.
<b><u>N.G.R</u></b>	NS 7900 9400
<b><u>Project Description</u></b>	Archaeological recording of remedial works in U20.
<b><u>Project Code</u></b>	HSCO-90291-2010-01

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## 1.0 INTRODUCTION

Under the terms of the PIC call-off contract, Kirkdale Archaeology was asked by Historic Scotland to make an archaeological record of remedial work being undertaken in U20. This work required the removal of some of the lath and plaster on the N elevation of the room, which revealed the main build of the N wall of the palace behind. This presented a rare opportunity to make a record of this feature, which was duly drawn, photographed and a written description made.

The work took place over a single day on 30<sup>th</sup> June 2010.

## 2.0 DESCRIPTION AND INTERPRETATION

### The layout and location of U20

Room U20 is located at the SE-corner of Stirling Palace immediately above the NE part of the Queen's Bedchamber (Figure 1). Its architectural surfaces were created during the late 17th Century, with the exception of the E and N walls, which partially belong to the building campaign of the late 1530s. U20 is accessed via a corridor (U19) that runs in N/S direction along the W wall of the E Range. Both the corridor and U20 are, together with the adjacent rooms U21 and U22, covered with an A-shaped double-pitched rafter-single roof (R10, R17) that terminates at its E-end in the southern gable of the E-façade of the palace.

### Details of the intervention

A broadly rectilinear cut (008) was made through the lath and plaster in the W end of the N wall (Figure 2). This revealed (001), the masonry build of the chimney breast, comprised of yellow sandstone blocks with dressed edge quoins, bonded by yellow lime mortar. Within this was a mortar scar (002) up to 60mm thick and 160mm wide, running diagonally upwards. Also within (001) was possible evidence for a (now removed) purlin. This was revealed in the form of an

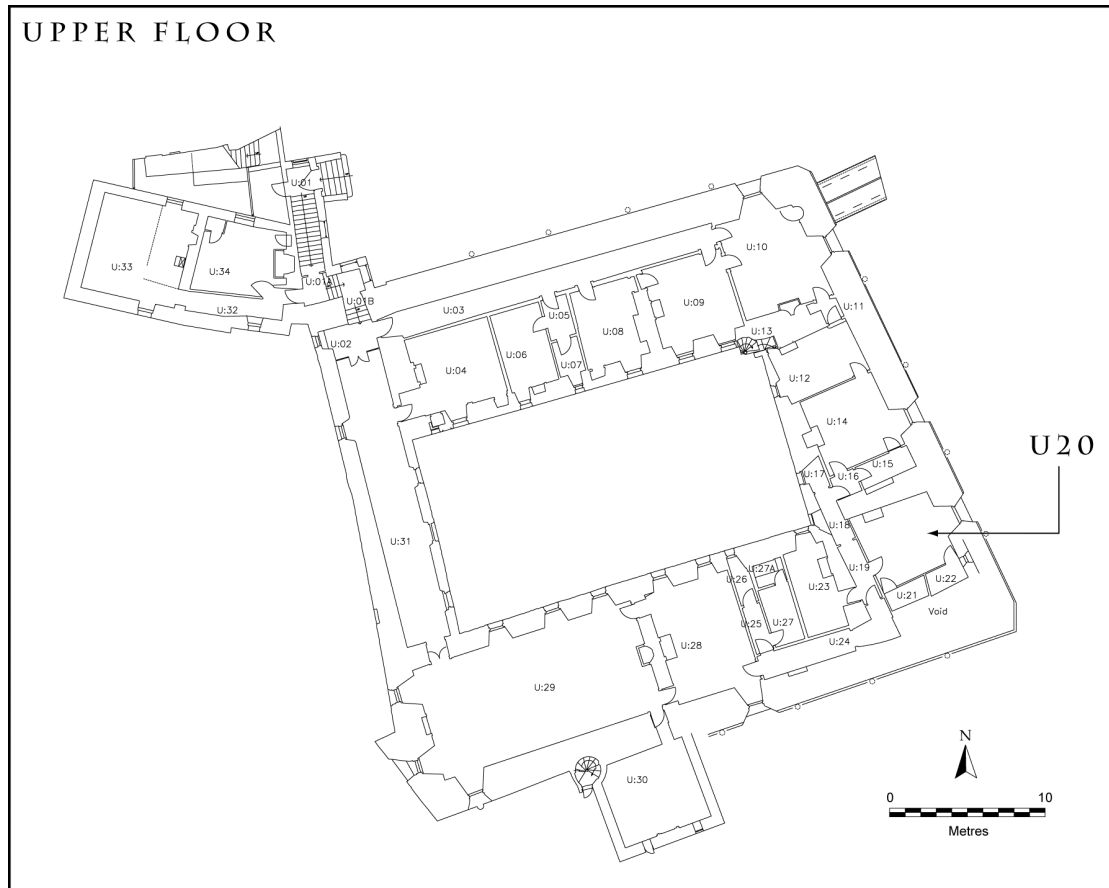
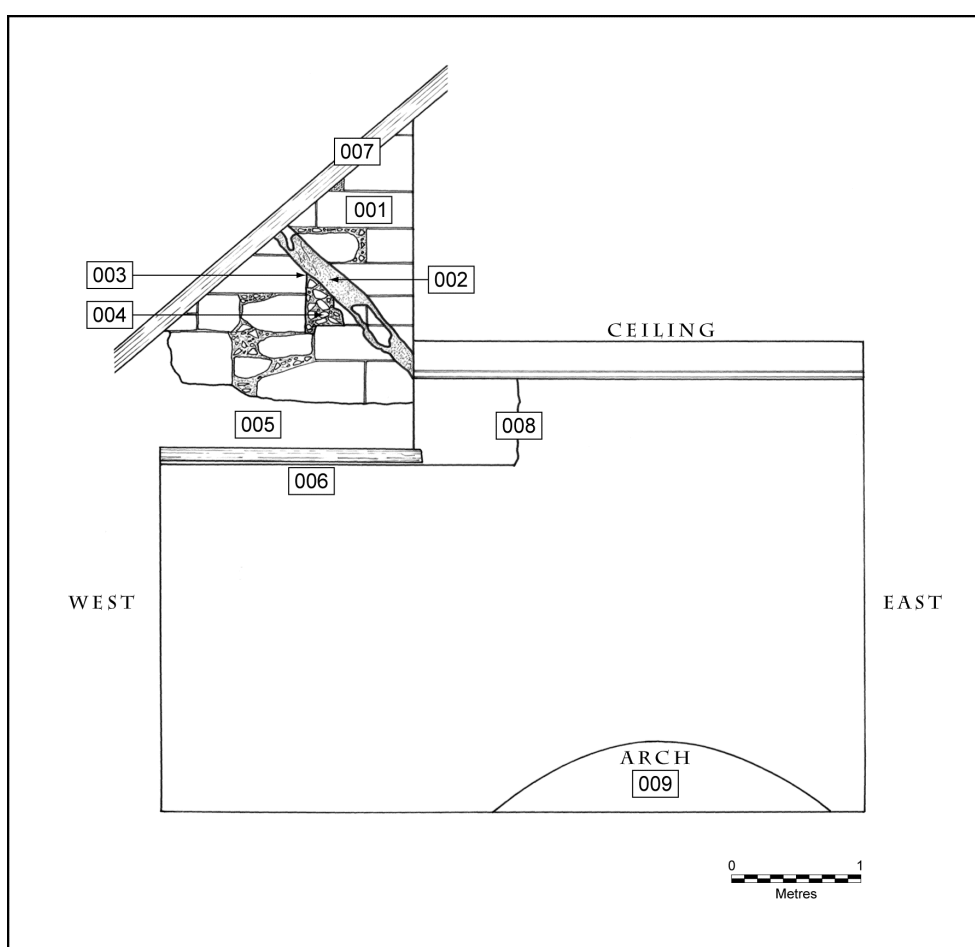


Figure 1: Plan of the upper floor showing the location of room U20.

irregular cut. It truncated part of (001) at a sharp right angle, suggesting the cut may be real. Within (003) was a sub-angular sandstone and lime mortar fill. This may have been part of (001) if (003) was not a cut. If (003) was related to the prior presence of a purlin, then this fill could be reasonably early in date due to its compositional matrix of lime mortar. The lower part of (001) appeared to feature the scar of a removed roof element (005), possibly leaded to make it water tight. It was a maximum of 160mm deep to the E. Also made visible by the cut (008) were (006), a sole piece from the 17<sup>th</sup> Century roof, and (007) a rafter from the 19<sup>th</sup>/20<sup>th</sup> Century roof.

The 17<sup>th</sup> Century roof is of particular interest. It can be dated on typological grounds to the period between the late 17<sup>th</sup> and early 18<sup>th</sup> centuries, an assessment that is supported by dendrochronological dating of some of the pine-floorboards used at

the upper floor of the N, S, and E-range<sup>1</sup>. Its southern slope is met by an independently constructed roof (R05), which already uses a ridge-purlin and is apparently of younger erection date. Overbuilding the northern cross-wall of U20, the mentioned structure meets R17 at an angle of roughly 90°. The emerging combined roof is distinguished by an 'unbroken' roof line operating with hip- and valley-rafters, thus creating an image that reminds us of the architecture of 18<sup>th</sup>/19<sup>th</sup> Century Scotland, rather than that of the mid-16<sup>th</sup> Century.



**Figure 2:** Features visible behind the lath and plaster in U20 plus the arch (009) and the cut in the lath and plaster (008).

<sup>1</sup> The majority of dendro-dated floorboards were produced in 1671 (source: personal communication with G. Ewart).

### **The relieving arches at U19, U20, U21 and U22 and their association with the roof**

The most enigmatic architectural element of U20 is a relieving arch (009) which is incorporated into the northern cross-wall. The position of its springers respects the 1538 floor arrangement over the Queen's Bedchamber and, as will be discussed later in the captions of Figs. 6, 8 and 11, there is good reason to believe that they were put in place around 1538 as well. The arch binds at its eastern side into the E-wall of the palace and at its western side into the chimney that belongs to the fireplace (001) in the NW-corner of the Queen's Bedchamber.

A second arch, which is similar in shape and construction to the first one, is incorporated in the S-wall of the palace quadrangle. Although both arches show similar dimensions as well as appearing at similar heights, they do, however, not correspond in terms of location. The U20 arch is located considerably further east than its counterpart within the southern wall of U19, U21 and U22 and thus both arches do not seem to be related to each other.

It might be assumed that the construction of both arches was motivated by structural requirements related to the roof-architecture of R10/R17 as well as the wall-architecture of the cross-wall separating P04 and P07. Since the purpose of arches is to permit the creation of apertures, the function of the southern arch can easily be understood. This arch relieves the large window in the S-wall of the Queen's Bedchamber and transfers the load resulting from the eastern couples of the roof into the more solid portions of the S wall.

The relieving arch at the N wall of U20, on the other hand, serves a structurally more complex purpose because the room layout at the Queen's Bedchamber and U20 has to follow conflicting design objectives. While the position of the cross-walls at principal floor level is determined by the intention to create rectangular apartments within an irregular polygon (thus the wedge-shaping of many of the walls), the

alignment of the cross-walls at upper floor level is defined by constraints caused by the architecture of the roof. The construction of a rectangular double-pitched roof such as R10/R17 demands that the wall heads run on parallel lines. The alignment of the northern wall-head was therefore dictated by the alignment of the southern palace-wall. It is for this reason that the wall head over the N wall of U20 cannot emerge straight out from the cross-wall that separates the Queen's Bedchamber and the King's Bedchamber, but had to be rotated further S until it ran parallel with the southern palace wall. In this position, the wall head was not supported by any load-bearing substructure. Because this load-bearing feature was created by the U20 arch, one can conclude that the principal purpose of the latter is the provision of safe seating for the northern rafters of the roof.





**Figure 3:** Floorboards (1538d) and joists (1538d) over the Queen's Bedchamber.



**Figure 4:** The western part of the relieving arch in U20 (probably c.1538). The arch is butted against rising rubble masonry which apparently belongs to the cross-wall that divides the Queen's Bedchamber and the King's Bedchamber. It is, without embarking on further research, impossible to say whether the rubble wall pre-dates or post-dates the arch.



**Figure 5:** The chimney inside the N-wall of U20 (probably c.1538).



**Figure 6:** The roof (late C17) and lath and plaster ceiling (late C17) over U20 .



Figure 7: The roof (late C17), ceiling (late C17) and relieving arch (probably c.1538) in U20.



**Figure 8:** The relieving arch (probably c.1538) and floor joist (1538d) at the N wall of U20. The arch relates to the northernmost floor joist of the Queen's Bedchamber. This suggests that the arch was created in the context of the 1538 building operations.



**Figure 9:** The roof (late C17), chimney (probably c.1538) and N wall (probably c.1538) of U20 at attic level.



**Figure 10:** The chimney (probably c.1538), N wall of U20 (probably c.1538) and rafter of R10 (late C17). The chimney, datable in all probability to the years around 1538, possess a notch that appears more or less at current wall-head level. This notch may belong to the original roof over the SE-corner of Stirling Palace. The rubble wall over U20 at attic level may also belong to that period because it is highly unlikely that Stirling Palace originally possessed hip-and valley rafters. Instead it was common practice to butt the roof slabs against extended gable walls. The notch at the chimney may have been used for receiving lead-clad timbers employed for waterproofing the valley between the rafter feet and the rising wall.



**Figure 11:** The N wall (probably c.1538), roof R05 (post-C17) and roof R10 (late C17) in U20.





**Figure 12:** The roof R05 over U20 (post-C17).



**Figure 13:** The E-façade of Stirling Palace (c.1538). James V's elevation, employing two crow-stepped gables at the northern and southern ends of the E-range, implies that the original roof over the S-range resembled the current roof-architecture. This can be assumed because the gable-triangle ultimately defines the pitch, height and width of the roof. It is therefore highly likely that the U20 arch was created by James V's craftsmen.



**Figure 14:** The western part of the relieving arch in U19, U21 and U22 (probably c.1538).



**Figure 15:** The relieving arch in U19, U21 and U22 (probably c.1538).



**Figure 16:** The eastern part of the relieving arch in U19, U21 and U22 (probably c.1538).

### 3.0 CONCLUSIONS

This simple recording exercise proved invaluable in revealing new insights into the sequence of construction of the early palace.

It showed that even when a relatively small glimpse is available into a hitherto inaccessible part of the palace, it is possible to accumulate quite rapidly a great deal of evidence useful in the process of piecing together the early history of the building from archaeological data accumulated from prior fieldwork elsewhere, often over an extended period of time.

Thus it is recommended that any future work that involves alteration to the fabric of the building, or breaking of the ground, is subject to close archaeological monitoring.

#### 4.0 APPENDIX 1: LIST OF CONTEXTS

No.	Description
001	Masonry build of chimney breast. Yellow sandstone with dressed edge quoins; a build of roughly-edged, partially-dressed sandstone bonded by yellow lime mortar with small sub-rounded and sub-angular panners.
002	Mortar scar up to 60mm thick running diagonally up (001). Up to 160mm wide. Not cut into (001).
003	Possible irregular cut for a purlin through (001). Truncates part of (001) at a sharp right angle suggesting the cut may be real.
004	Sub-angular sandstone and lime mortar fill of (003). May be part of build (001) if (003) is not a cut. If (003) is a real cut then this backfill is reasonably early due to its matrix of lime mortar.
005	Scar of removed roof element, possibly leaded to make it water tight. 160mm deep to the E, 50mm centrally, and flush to the W.
006	A sole piece of the 17 <sup>th</sup> C roof.
007	A rafter of the 19 <sup>th</sup> /20 <sup>th</sup> C roof.
008	Intervention cut through lath and plaster.
009	Outline of the relieving arch visible in N wall of U20.

#### 5.0 APPENDIX 2: LIST OF DRAWINGS

No.	Description	Scale
1	N wall of U20	1:20

#### 6.0 APPENDIX 3: LIST OF DIGITAL PHOTOGRAPHS

No.	Description	From	Date
1	General Shot of U20.1 intervention.	SE	30/06/2010
2	View of chimney breast build (001) and roof scar 002 at the E end.	S	30/06/2010
3	View of chimney breast build (001) and roof scar (002) at the W end.	S	30/06/2010
4	View of edge quoins of (001).	SE	30/06/2010
5	Lower W side of U20.1	S	30/06/2010
6	Central W side of U20.1	S	30/06/2010

<b>No.</b>	<b>Description</b>	<b>From</b>	<b>Date</b>
7	Upper W side of U20.1	S	30/06/2010
8	Wall build to W of chimney breast.	SE	30/06/2010
9	Wall build to W of chimney breast.	SE	30/06/2010
10	Detail of roof scar (002).	S	30/06/2010
11	Wall build to W of chimney breast and possible cut (003).	SE	30/06/2010
12	Detail of roof wall build to W of chimney breast.	SE	30/06/2010