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## THE PALACE AT EDINBURGH CASTLE

CHARLES McKEAN

THE ARCHITECTURAL QUALITY of Stirling Castle appears far to outweigh that of Edinburgh, leading to the presumption that the former was always the favoured location and that, once the kings of Scotland had colonised Holyrood in the mid sixteenth century, they used the 'windy and right unpleasant' castle of Edinburgh only under duress.<sup>1</sup> But is the inference of poor architectural quality at Edinburgh's summit really the case? For the last 500 years it has been the dominating feature of Scotland's capital city, and the kings of Scotland would surely have wished it to convey heraldic and regal symbols to impress visitors and overawe natives.

Using the archaeological/architectural technique of analysing a building's history by studying wall thickness, of examining changes in levels, and matching the results to records, old illustrations and visual inspection, this paper seeks to recover the building history of Crown Square, at the lower summit of the citadel. Records of what existed on the Castle Rock have been well trawled. My aim in this paper is to attempt to make sense of the palace buildings during the sixteenth and seventeenth centuries, and to examine how they might have looked, or were intended to look, correlated against original illustrations.<sup>2</sup>

That this most prominent of Scottish royal citadels is less well understood than that of Stirling is principally the result of the 1573 Civil War siege which proved awesomely destructive. So far as we can tell, it wrought immense destruction upon Davy's Tower (whose foundations were thereafter enclosed by the Half Moon Battery), the north-east gable of the Palace, and the south-east facade. What remained, and what new work followed, were

themselves altered, often beyond recognition, by works required for the castle's continuing military occupation, and then for tourism.

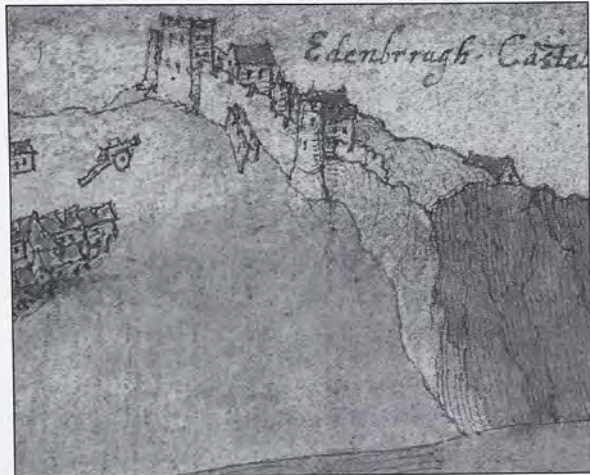


Fig. 1. Edinburgh Castle from the north, enlarged detail from the drawing of the 1544 siege. (*British Library; Cotton MS, Augustus I.ii.56.*)

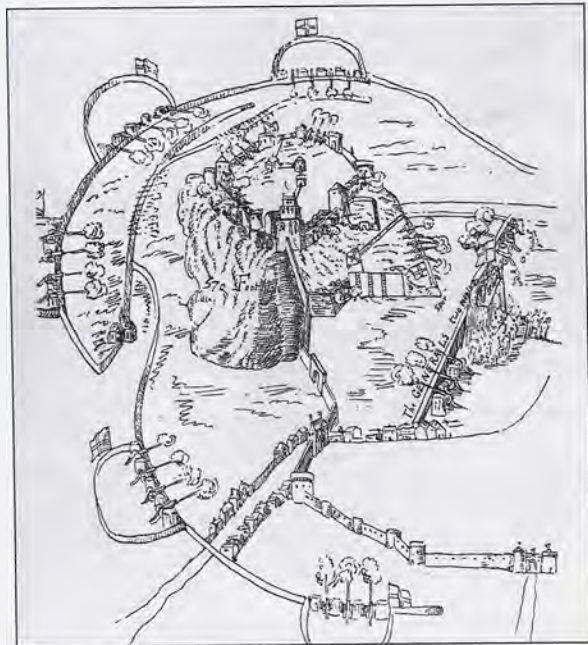


Fig. 2. The Castle from the south, from the drawing of the 1573 siege. (*RCAHMS; from Robert Scott Mylne, The Master Masons to the Crown of Scotland and their Works, Edinburgh 1893, p. 205.*)

## THE UPPER WARD

The earliest buildings on the castle rock clustered to the north, around the summit, by St Margaret's Chapel. With St Mary's Church (on the site of the present Scottish National War Memorial) acting as a southern wall, the citadel included a Great Chamber, a counting house and the Constable's Tower. Received wisdom places the Constable's Tower, built 1375–79, where the Portcullis Gate now stands.<sup>3</sup> But three drawings – two from the English sieges of 1544 and 1547, and one from the 1573 siege – depict a prominent round tower at the north of the summit, overlooking the principal entrance, approximately where the pets' cemetery lies today beside the Lang Stairs (figs 1 and 2). Substantial solitary round towers (as distinct from those incorporated into a more integrated plan such as those at Kildrummy,

Bothwell and Dirleton) were not common in medieval Scotland, although traces of them survive at Dumbarton and Falkland, and, if the French influence was significant, appear to have symbolised particular importance. This huge round tower was probably a victim of the destruction of 1573, and it seems likely that this, rather than the lower-sited gate-house, was the Constable's Tower.

## CROWN SQUARE – NORTH

The north summit of the castle rock was small, and by the fourteenth century the broader levels to the south of St Mary's Church were being flattened out by the construction of perimeter vaults and walls eventually to enclose Crown Square as the new inner sanctum; and by the early fifteenth century the entire upper rock was

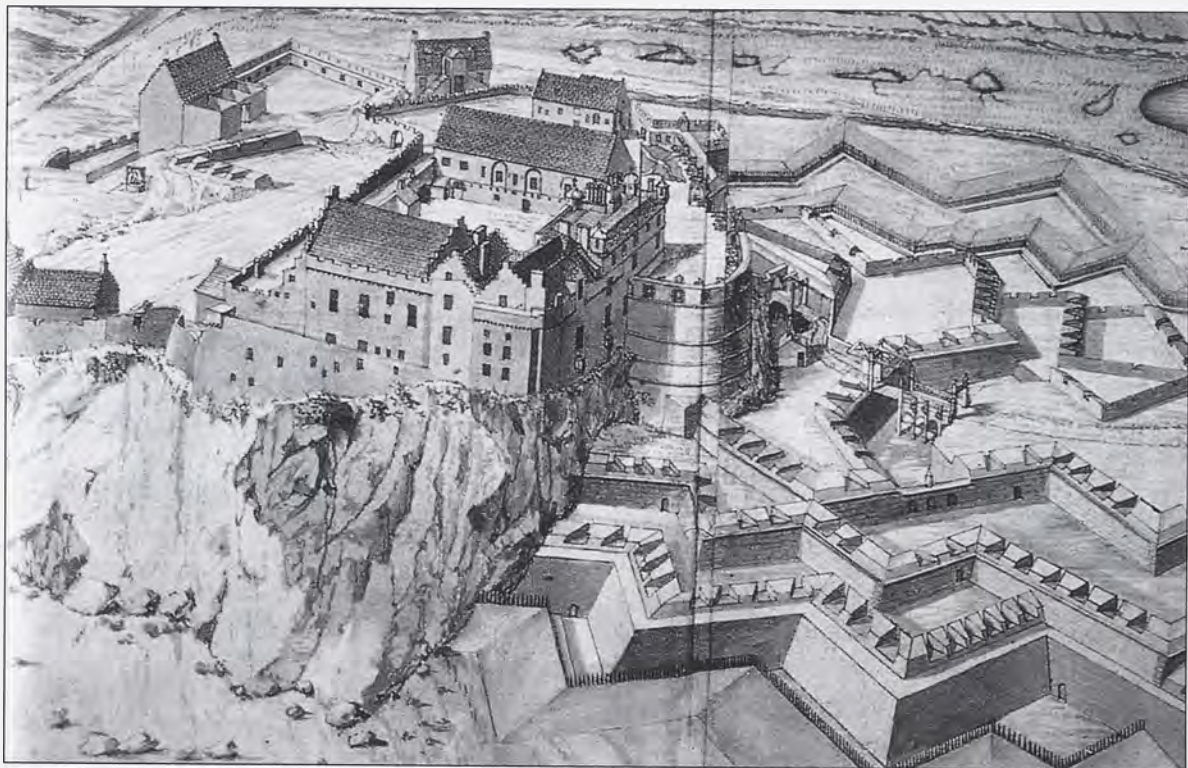


Fig. 3. Bird's eye view of the Castle from the south, late seventeenth century, attributed to Captain John Slezer. (*British Library; K. Top. 49.74a.*)



Fig. 4. Edinburgh Castle from the south, James Gordon of Rothiemay, c. 1649. (RCAHMS; by courtesy of Edinburgh City Libraries.)

clasped within a curtain wall with towers.

St Mary's Church, reconstructed initially from 1366, formed the northern boundary of the new heart of the castle.<sup>4</sup> By the seventeenth century, it had become a magazine with attached armoury.<sup>5</sup> By 1740 it was described as a 'Storehouse, formerly a chapel' with the Long Forge abutting to the north,<sup>6</sup> and a guardhouse and the Governor's walled garden (perhaps the site of the medieval royal herb garden) lying between it and St Margaret's Chapel.<sup>7</sup> Captain John Slezer's late seventeenth-century bird's eye view (fig. 3) indicates two large round-headed windows with a proportion rather similar to James VI's Chapel at Stirling, which may imply some late-sixteenth-century construction. It was substantially

rebuilt as barracks in the early eighteenth century, slightly re-aligned to widen the entry to Crown Square, remodelled in 1863 by R. W. Billings, and then reconstructed as the Scottish National War Memorial by Sir Robert Lorimer in 1924–27.<sup>8</sup> Although there is nothing of St Mary's left today, bits of moulding still visible in the Memorial's walls indicate a vigorous architectural character and quality.

#### CROWN SQUARE – WEST

The west side is now closed by the United Services Museum, which was carved in 1928–30 from the

Barracks for the Fort Major and other officers built by Captain Theodore Drury in 1708. In 1647 James Gordon of Rothiemay drew a two-bay crenellated building of the same height abutting the Great Hall to the west (fig. 4), and Slezer's bird's eye view towards the end of the century (see fig. 3) reveals a narrow building extending the entire length of the west side of Crown Square, crashing into St Mary's Church.<sup>9</sup> It has been suggested that the building was the House of Artillery, in existence by 1498, although Christopher Wilson considered that this might have made living in the Citadel unpleasant.<sup>10</sup> If the mechanics of casting and finishing were undertaken elsewhere (as seems to have been the case) there is no reason why an artillery showhouse would have damaged the ambience of Crown Square. Artillery was the Stewart kings' pride. It killed one of them. It was what they would have wished to protect from the depredations of the nobility and also to boast of to visiting dignitaries, ambassadors, etc. Why should the Scots kings not have wanted to have a building, at the most secure point in the realm, in which to display their technical innovation and foresight? Slezer's plan,<sup>11</sup> which accompanies his bird's eye view (fig. 3), implies that this western flank of the Square was double-pile, with a narrow outer wing, an inner wing and a long flight of steps from Crown Square, not dissimilar to the double-pile gallery wing on the south of the Palace of Stirling. That very narrowness, and its splendid view to the west, implies that it might, originally, have been a gallery. There were (or were intended to be) galleries in other royal seats; a west-facing gallery was planned for the rock at Stirling (Sir William McDowell recommended a new taller one for the better view), one overlooking Pittencrief Glen at Dunfermline, and one at Falkland Palace. There was certainly at least one gallery on the Castle Rock in 1623.<sup>12</sup> Perhaps there was a gallery above the Artillery House.

However that may be, Drury's Officers' Lodgings cannibalised a pre-existing building of quality, probably by adding a parallel wing to the west – which might explain both the differing wall thicknesses in the present Museum, and the extraordinarily narrow lightwell in the middle.<sup>13</sup>

#### CROWN SQUARE – SOUTH AND EAST

The south side was eventually to become filled by the Great Hall (almost certainly complete by 1511).<sup>14</sup> The sequence of buildings lying to the east and north east, between the Great Hall and Davy's Tower, have been variously described as Register House, the Governor's Lodging (or New Work), the Royal Lodgings, and the Palace. In this article, for reasons that will become obvious, these buildings will be called Register House, the Battery, the South East Tower and the Palace (figs 5–7).<sup>15</sup>

Known by the late fifteenth century as Davy's or David's Tower, the great tower of Edinburgh Castle, constructed 1367–68, led to the levelling (by the insertion of perimeter vaults) and development of Crown Square, and its encirclement by building. This enormous tower house, possibly the largest of its type, projected forward at an angle from the Square, and its silhouette dominates the pre-1573 drawings of Edinburgh. Its defences both controlled the entrance even more dramatically than the Constable's Tower, and provided a postern gate. Being the most difficult part of the citadel to reach, it was the place of last resort.

Once the King's Lodgings had moved south into Davy's Tower, state and domestic apartments necessarily followed. A kitchen was built nearby in 1382.<sup>16</sup> In 1433–45, more construction on the walls greeted the building of a new Great Chamber communicating with Davy's Tower; Parliament

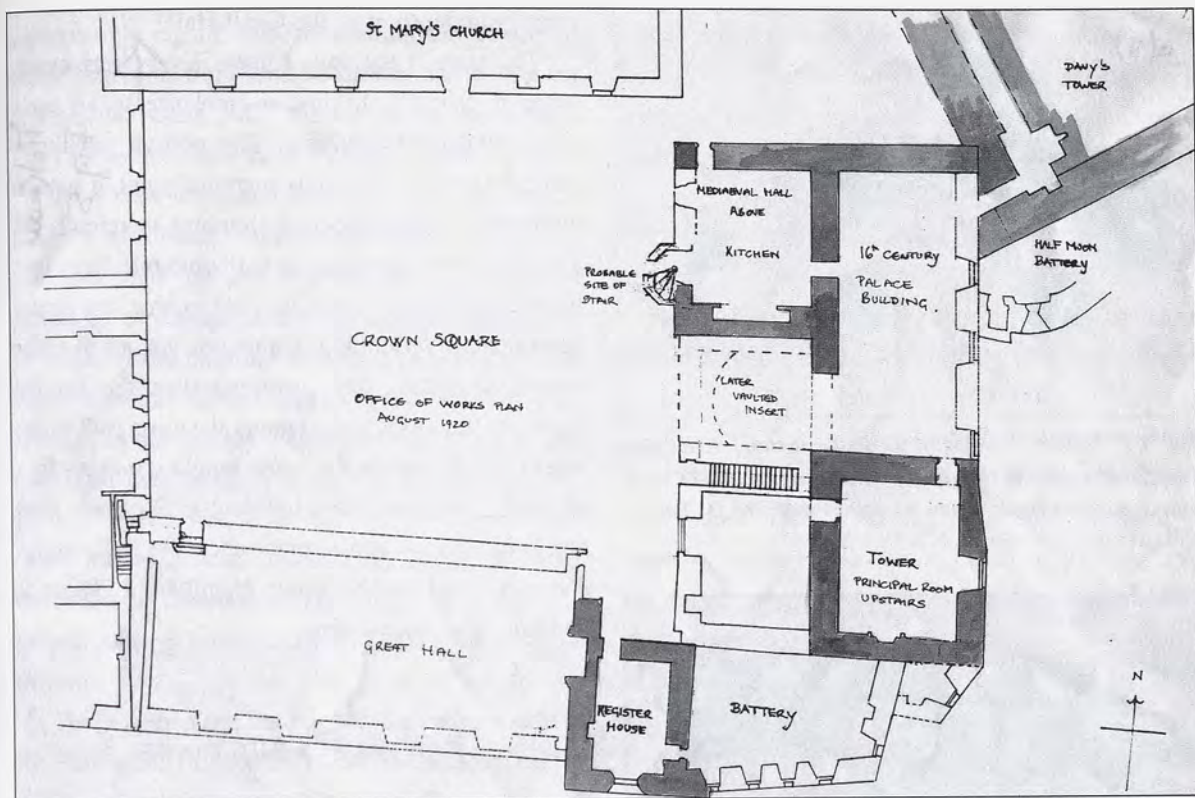


Fig. 5. Crown Square, adapted by C. McKean from Office of Works drawing, 1920. Both St Mary's Church and Davy's Tower are shown. The shaded portions identify the thickest and probably oldest parts, being Davy's Tower, the 1382 kitchen (with Great Chamber above?), the South East Tower, and Register House.

met here in 1458.<sup>17</sup> This building is widely assumed to be what this article calls the Palace, on the east side of the square. The Great Hall followed, on the south, perhaps in James IV's reign (c. 1511). The complex was completed with the construction of Register House by John Merlioun, or Marlin, in 1540–42, between the Hall and the Palace.<sup>18</sup>

After the 1573 siege, the ruins of Davy's Tower were enfolded within the Half Moon Battery, a new entrance tower was constructed by Sir William MacDowell with what is now called Regent Morton's gateway (but which might more accurately be called MacDowell's Entry), and interim work was carried out to make the Palace and adjacent buildings inhabitable.<sup>19</sup>

The final works were provided by Sir James Murray of Kilbaberton in 1615–17, who superimposed upon the Palace a new building of complexity and sophistication which, so far, has been undervalued, and whose apartments are now virtually lost to the tourist experience. Careful reconstruction work by Neil Hynd, Historic Scotland, however, is piecing together the work undertaken at courtyard level in preparation for the return visit of King James VI.<sup>20</sup>

#### PRELIMINARY ANALYSIS

This lucid story glosses over certain complexities. One of the vaults beneath the Great Hall, for example, contains a substantial hooded fireplace

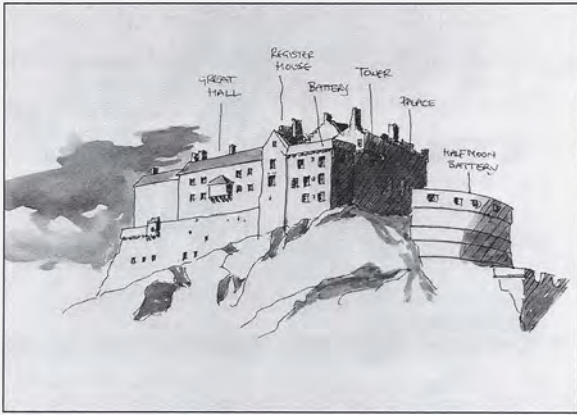


Fig. 6. C. McKean, drawing of the Castle from the south after Francis Nicholson (1807), identifying the components of Crown Square. Register House retains its pitched roof, and the Battery still lacks its upper storeys. (RCAHMS; D10357.)



Fig. 7. C. McKean, study of the south elevation of the rock, taken from a contemporary photograph, and superimposing information from Gordon of Rothiemay's Bird's Eye View, 1647, and suggesting the outline of Davy's Tower rising from the Half Moon Battery. (RCAHMS; D10355.)

(blocked by construction of the Great Hall's vaults), much more important than would be found in a cellar.<sup>21</sup> It implies an earlier structure facing out from that southern cliff, later relegated to cellaring when the current level of Crown Square was established. Nor does it explain the building programme which produced the three outstanding east-facing oriel windows, most of whose walls remain – to their three-storeyed wallhead – not of medieval wall thickness, but of the same sixteenth-

century generation as the Great Hall.

The plan of the palace itself is very perplexing, since it bears a striking resemblance to an early sixteenth-century building. The portion rebuilt by Murray in 1615–17 is only marginally out of square, with one of the chambers within only marginally off a double cube. Its structure is double-pile (very rare in Scotland): and what is rarer is that the grand apartments overlooking Edinburgh are much taller (arranged within three storeys) than the service rooms in the block lying behind the cross wall to the west (which, within the same height, contains four storeys). Only one other building in Scotland bears any similarity to such a contrivance: the 1532 seat of James V's architect Sir James Hamilton of Finnart at Craignethan, Lanarkshire.

#### THE PALACE BUILDINGS

The presumption is that Edinburgh Castle's palace apartments were splendid – judging by those in Stirling and Falkland, and allowing for the greater symbolic importance of Edinburgh. Indeed, they may well have gleamed white and beacon-like over the capital – for we know that the castle buildings were harled in 1616.<sup>22</sup> Yet it has proved extraordinarily difficult to analyse the buildings that line the south and east of Crown Square. Since they have been besieged, shelled to bits, blown up, transmogrified, recast by various Procrustes, and recast again; and since the walls have been sliced, cut, thinned, pierced, slapped, holed, and dug out, study by typology has been virtually impossible. Most significantly, we lack the clues usually offered by royal routes and processions, and patterns of public chambers versus private. The missing key is Davy's Tower, around which the entire Crown Square was probably focused since the royal lodgings lay within. There must have been

appropriately regal means of entering the Tower, or indeed emerging from it in procession into the Square to reach the Great Hall, but we do not know how Davy's Tower was entered, or on what floor.

It has been presumed that a turnpike stair in the tower's (vanished) north-west corner was the principal stair, but by the fifteenth century that cannot have provided a sufficiently regal route. Nor, to judge by the building sequence (see below) is it likely that the current narrow route from Crown Square through the royal apartments at ground floor level and then through a tight poky passage into Davy's Tower was ever that formal ceremonial route. Rather, it was probably on the floor above. Certainly, all drawings of Davy's Tower show it as several storeys higher than any other building on the rock.

There is then the matter that the eastern side of the Palace lies three steps below the western on the level of Crown Square. When building new, they could have built the eastern vaults beneath the King's Dining Room up to the level of Crown Square – had Crown Square been levelled off and built on at that point. So the implication is that the lower level vaults predate the higher ones (since otherwise they would have been built taller) possibly to carry a platform and wallwalk before Crown Square was properly developed.

#### WHAT THE WALLS REVEAL

These buildings have been studied according to wall thickness, approximately on the principle that the thicker the wall, the older it is; and the results challenge received history (fig. 8).<sup>23</sup> The belief that the fourteenth/fifteenth century Great Chamber ran, at the level of Crown Square, along the eastern edge facing the city, with adjacent kitchen (later

incorporated in the 1615–17 rebuilding of the upper storeys by Murray of Kilbaberton) seems very unlikely. The only masonry of the required thickness on that eastern cliff identifies a tower at the south-east corner – whose thick walls still rise to the full three storeys above Square level. Equally thick walls identify the 1382 kitchen, lying on the edge of Crown Square with, probably, the Great Chamber above. Equally, on the south flank, the lower storeys of Register House are of the same date.

The first floor of the South East Tower is taller than the ground floor, implying that the principal apartments were – as was normal in Scotland – upstairs on the *piano nobile* (principal storey). This building presents the greatest interest. Its wall thickness, through all three floors above basements, is 5.5 feet; and in a second-floor-level passage there are traces of what may have been a cut-away vault. So what originally faced out to the city at this point was probably an almost square tower extended soon afterwards – possibly with a covered forestair. The walls at all levels which now link this tower north to Davy's Tower are, for almost their entire height, all the same thickness (and thereby approximately the same date) as the Great Hall.

So how can we visualise the sequence of building? The *first phase* appears to have been the 1382 kitchen, on the edge of Crown Square, with the Great Chamber above, joined by a wallwalk at ground level to a narrow tower at the south-east corner, as shown in figs 9 and 10. There were certainly parallels for such an arrangement in Linlithgow and Stirling.

The eastern gable of the Great Hall is thicker than the rest, and plans imply (much more strongly in early eighteenth-century plans than now)<sup>24</sup> that this wall was not just the side of the rectangular tower later elevated in 1540 by Merlioun to become Register House, but also a relic (there are quite a



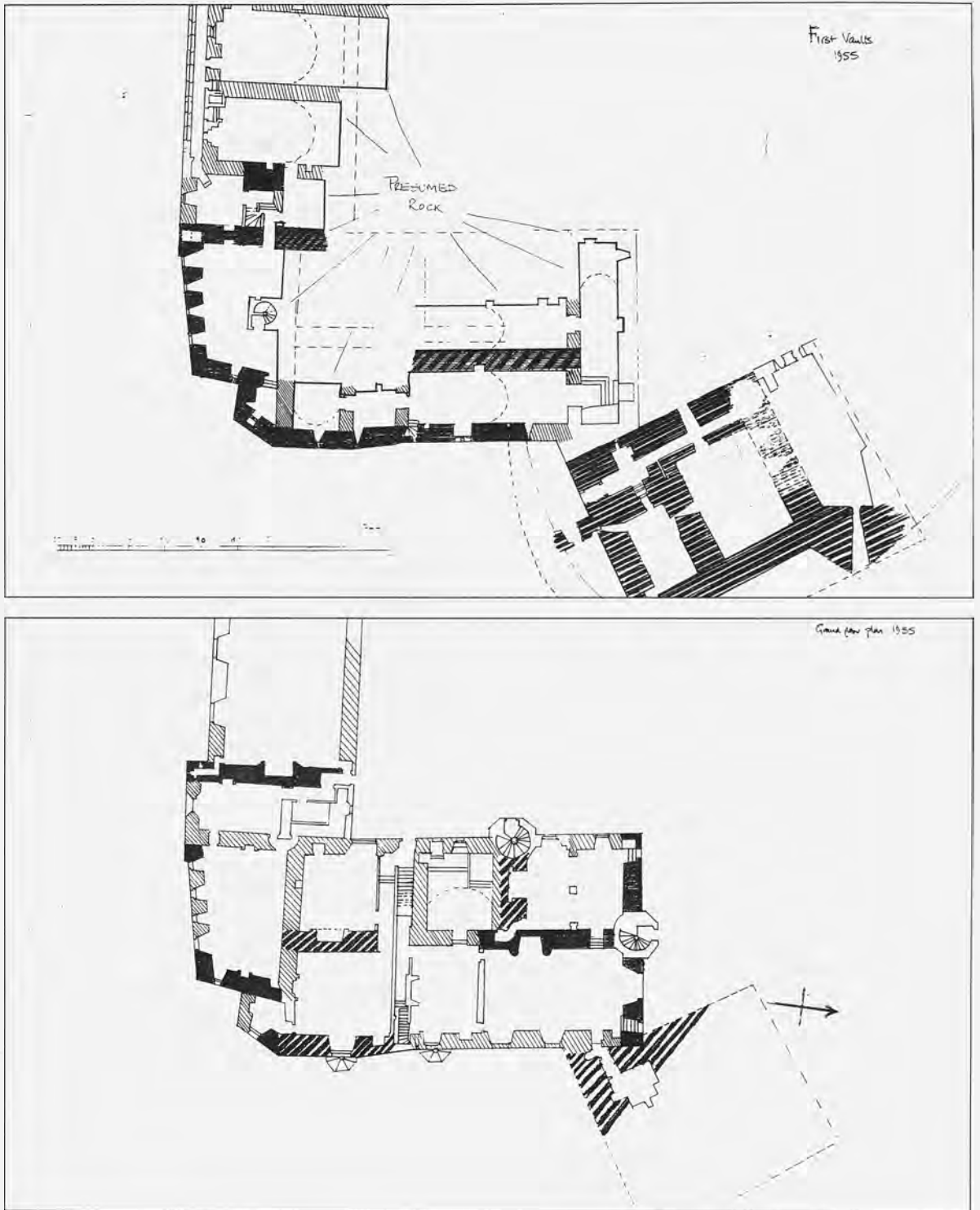


Fig. 8. C. McKean, plans of each of the four floors of the palace taken from Ministry of Public Buildings and Works plans of 1955, hatched to identify wall thicknesses. The thick left-leaning hatching is 14th/early 15th century; the solid, 15th century; right-hand hatching, c. 1511-1530; left-hand fine hatching, alterations early 17th century; unhatched, Sir James Murray of Kilbaberion c. 1615-17.

THE PALACE AT EDINBURGH CASTLE

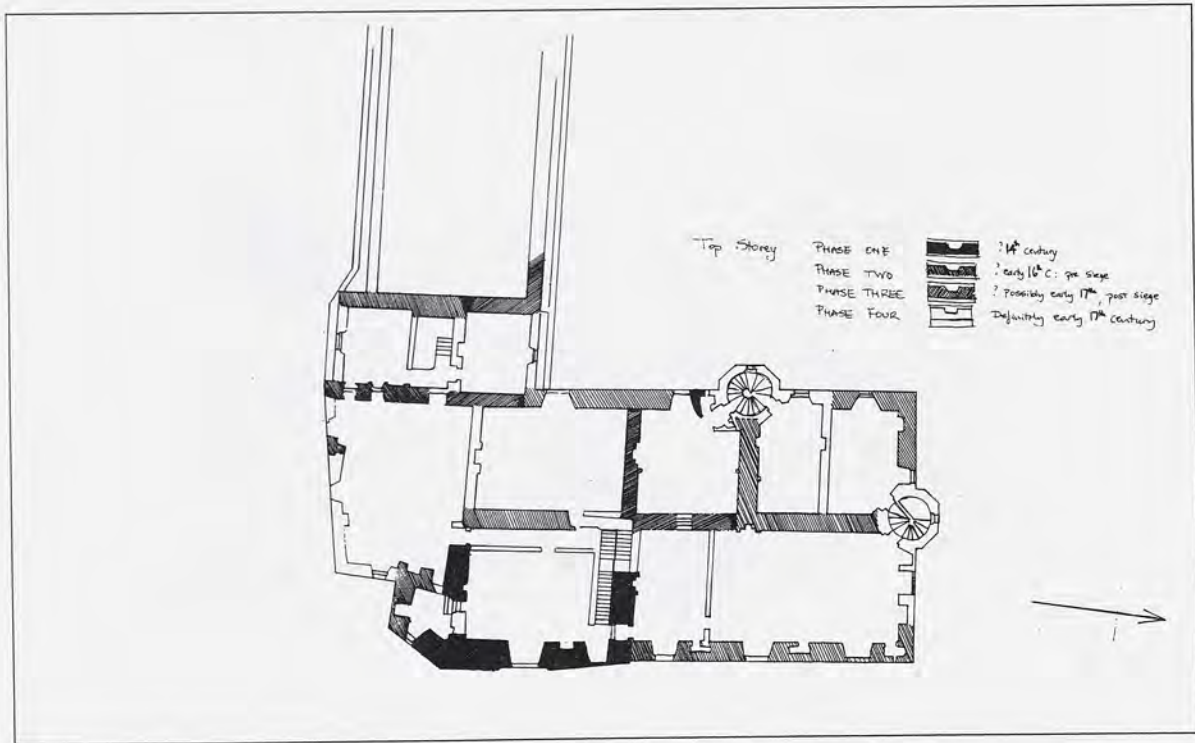
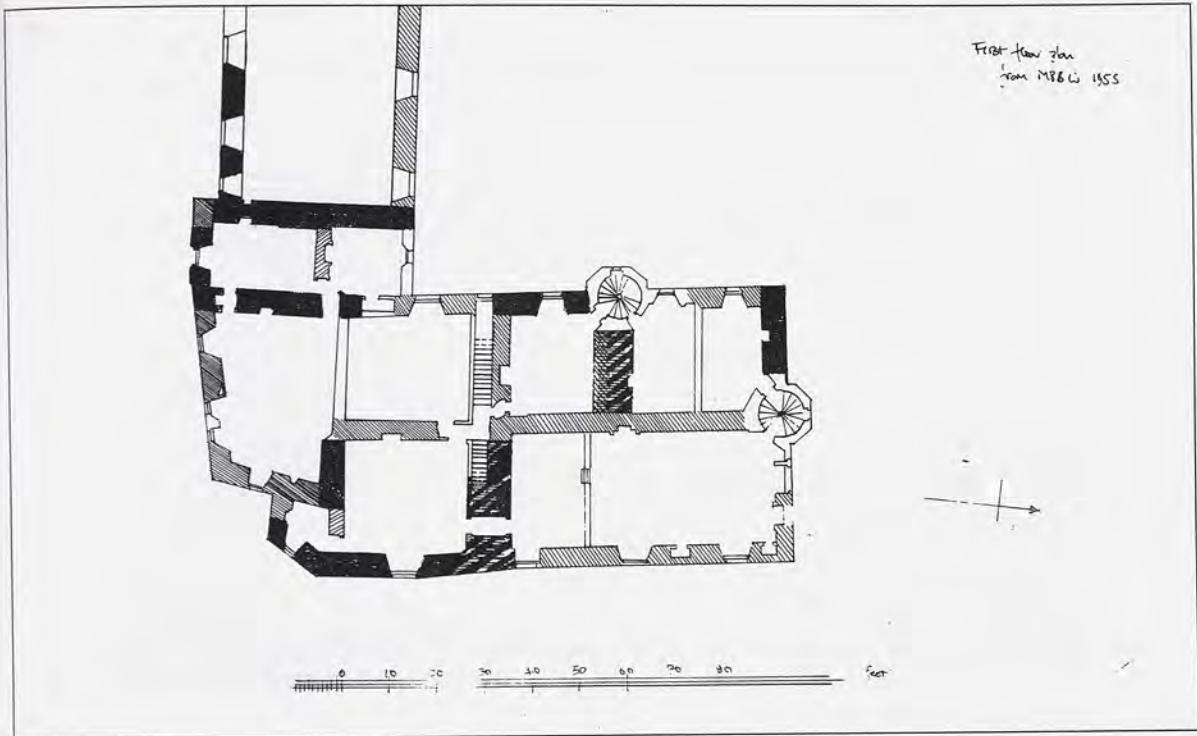




Fig. 9. C. McKean, conjectural view from the east c. 1450, showing (from left to right) Register House, the South East Tower, the gable of the Great Chamber and kitchen, and Davy's Tower. (*RCAHMS; D10353.*)



Fig. 10. C. McKean, conjectural view from Crown Square c. 1450, showing St Mary's Church, Davy's Tower, the Great Chamber above the kitchen, the South East Tower with its forestair, and an unknown building on the right. The stair up to the Great Chamber has been moved a bay to the left since the thinness of the wall, and odd heights of window, imply that it was originally here. (*RCAHMS; D10352.*)

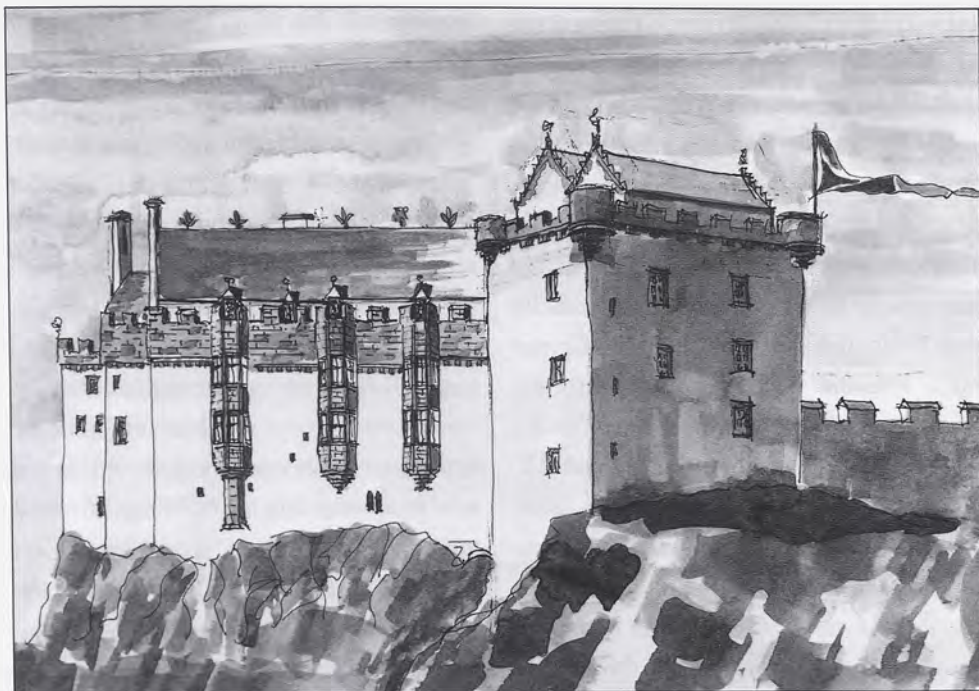


Fig. 11. C. McKean, conjectural view from the east *c.* 1520, showing Davy's Tower beside the Renaissance Palace with its splendid oriels. Top storey windows lie behind the parapet as they do in Stirling. The South East Tower has been assimilated into the broader composition. (RCAHMS; D10354.)



Fig. 12. C. McKean, conjectural view from Crown Square *c.* 1520, showing the completed Palace, with the assimilation of the tower forestairs as the principal royal route between Great Hall and Davy's Tower. Register House and the Great Hall lie on the right. (RCAHMS; D10356.)

number at First Vault level) of earlier chambers abutting to the west – of which the fossilised hooded fireplace is a memento. So the *second phase* may have been the construction of buildings along the south flank, together with a wallwalk around the eastern corner which, in the fifteenth century, became apartments with the Battery above.

The *third phase* added the Great Hall in its present form lining the southern flank of Crown Square, and a splendid new palace hugging the eastern cliff-face, with its three three-storied oriels overlooking the city, as shown in figs 11 and 12. However, although the two chambers within have regal height and grandeur and the finest fireplaces, records imply that the fireplaces were not always as we now see them nor indeed in those locations. Furthermore, these rooms all lie two or three steps below the level of Crown Square, and have no adequately formal entrance. The floor above, however, on the same level as the *piano nobile* of the South East Tower – which by now had been incorporated into the palace – provided a formal,

well-lit stair down into Crown Square; which, on the face of it, seems the most plausible royal route from Davy's Tower to the Great Hall.

This reconstruction differs substantially from that suggested by W. T. Oldrieve in 1913, who conceived of the palace building only one storey in height, and reduced the height of Davy's Tower to match since he presumed that the parapet walk would have been continuous.<sup>25</sup> Continuous the parapet may have been, but wall thicknesses demonstrate that the buildings were two storeys higher: and all the original depictions of Davy's Tower show it as truly gigantic in size, dominating all buildings around it with – at the least – a two-storied superstructure.

The *final phase* is represented by Murray's remodelling of 1615–17. Murray's opportunity lay primarily in the upper two storeys of the palace, to which he added a near-square pavilion with an ashlar facade to the city, and two octagonal turnpike stairs (see fig. 13). Most of the upper storeys have substantially thinner walls: partly as you might expect (since construction thins the higher you go),



Fig. 13. Thomas H. Shepherd, the Palace block from Crown Square, 1829. (RCAHMS; from *Shepherd, Modern Athens.*)

and partly as a consequence of the 1573 siege destruction and subsequent rebuilding (particularly noticeable in the north-east corner of the palace, and the south-east Battery and Register House). To Murray, also, may be attributed the doorway at the north-east corner, which has evidently and crudely been cut in later, requiring steps down into the King's Dining Room; perhaps created as the public entrance to the sequence of show rooms leading to the shrine of James VI's birthplace in the tiny closet room projecting from the southern end.

A glance at the rooms mentioned during the building work of 1615–17 emphasises both the quality and the complexity of the final building. They consisted of public rooms and the lodgings of Officers of State and noblemen. There was a Great Battery (above which is Harry Erskine's chamber); the Constable's Hall; the Treasurer's House; the Chancellor's House; the Vault; the Laich Hall or House; the Council House; Lord Erskine's Hall; chambers for Lord Spynie, the Earl of Crawford, Lord Mar, Harry Mar, Robert Cunninghame, gentlewomen

and bairns. Lady Erskine had a study, Lady Mar and the Chancellor a gallery each, Margaret Hume a pantry, and there were several kitchens and even more stables, mealhouses and girnells. The 'New Work' is clearly identified, as is the 'Long Stair' with its two windows; there is curious reference to a chapel, a billiard room, an even more curious one to an oriel window and – most exotic of all – reference to the 'turnpike door that goes up from the King's rooms to Buckingham's rooms'.<sup>26</sup>

#### CONCLUSION

The purpose of this analysis was to provide a definitive chronology of the buildings within the palace at Edinburgh Castle. That has not been entirely possible. Yet a more complicated building pattern has emerged, implying that the oriel-windowed Renaissance Palace wing was a composition of far greater grandeur than reconstructions have so far depicted.

#### NOTES AND REFERENCES

For the standard accounts of Edinburgh Castle see: Royal Commission on the Ancient Monuments of Scotland (RCAMS), *The City of Edinburgh* (Edinburgh 1951), pp. 1–25; Christopher Wilson, 'Medieval Tower Houses, Castles and Palaces', in John Gifford, Colin McWilliam and David Walker, *Edinburgh* (The Buildings of Scotland, Harmondsworth 1984), pp. 49–53, 85–102; and Iain MacIvor, *Edinburgh Castle* (London 1993). The author has also made full use of the wide range of prints, plans, reproductions and photographs available in the National Monuments Record Scotland (NMRS), Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS).

- 1 MacIvor, *Edinburgh Castle*, p. 52. The Castle was chosen for the confinement of Mary Queen of Scots in 1566 for reasons of security.
- 2 Illustrations used in this study include those reproduced in RCAMS, *Edinburgh*, of the 1544, 1547 and 1573 sieges (figs

59–61), Gordon of Rothiemay's Bird's Eye View, 1647 (fig. 67), the undated Bird's Eye View, 'period 1689–1707', attributed to Captain John Slezer by reason of both orthography and the state of the buildings – distinctly pre-1708 and the construction of the Fort Major's building (fig. 63), and the mid-18th-century views by Paul Sandby and John Elphinstone (figs 57, 70–71). A variety of Slezer's original drawings of Edinburgh and the Castle are held in the Edinburgh Room, Edinburgh City Libraries, and were published in Keith Cavers, *A Vision of Scotland: The Nation Observed by John Slezer 1671–1717* (Edinburgh 1993), chap. 4.

- 3 The Constable's Tower is identified as the gatehouse in Gifford *et al.*, *Edinburgh*, p. 85.
- 4 *Ibid.*
- 5 National Library of Scotland (NLS), Map Library, Board of

- Ordnance drawings (BO), Z 2/3a, showing the Castle prior to building the Officers Quarters (perhaps attributable to Slezer?).
- 6 *Ibid.*, BO, Z 2/4a.
  - 7 *Ibid.*, BO, Z 2/4a. At this point the eastern half of St Margaret's has been converted to the Master Gunner's House.
  - 8 Gifford *et al.*, *Edinburgh*, pp. 87–88.
  - 9 Also seen in Gordon of Rothiemay's Bird's Eye View of Edinburgh in 1647 (see RCAMS, *Edinburgh*, fig. 67).
  - 10 Gifford *et al.*, *Edinburgh*, p. 86.
  - 11 NLS, Map Library, BO, Z 2/3a. Although drawing Z 2/3e, in the same batch, is dated 1774 it does not depict Edinburgh at that date and may simply represent a copy. The double-pile west wing that pre-dated Drury's 1708 Officers Lodgings is shown with perfect clarity.
  - 12 A press with beading was added to Lady Mar's gallery in 1623 ('ane press for my Lady Marres galrie with mullaris on the foirface of it'): John Imrie and John G. Dunbar (eds), *Accounts of the Masters of Works, Vol. II, 1616–1649* (Edinburgh 1982), p. 155. There is no evidence for the building of a new gallery during the building works of 1615–24, which suggests that the gallery dated from before this period.
  - 13 The Board of Ordnance drawings contain an elevation showing a large round arched entrance into the southern block between the wings of the new Officers Quarters in 1719 (NLS, Map Library, BO, Z 2/1d).
  - 14 MacIvor, *Edinburgh Castle*, p. 49; Gifford *et al.*, *Edinburgh*, p. 86.
  - 15 By the early eighteenth century the 'Palace' had become the Governor's House, the 'Battery' the Lieutenant Governor's House, and the Great Hall a barracks for ordinary soldiers with a gigantic 7-stall latrine cantilevered from the south wall (shown, for example, in fig. 6: see also the print by Paul Sandby on the cover of *Book of the Old Edinburgh Club (BOEC)*, New Series 3, 1994).
  - 16 MacIvor, *Edinburgh Castle*, p. 40.
  - 17 *Ibid.*, pp. 40, 45.
  - 18 Gifford *et al.*, *Edinburgh*, p. 94.
  - 19 There are references to a penthouse roof in Henry M. Paton (ed.), *Accounts of the Masters of Works, Vol. I, 1529–1615* (Edinburgh 1957), p. 326: 'Item ane great renroof [sloping or lean-to roof] betwex the twa quarters of the new wark': 'Item the lang stairis quhilk is the onlie passage to all the tofall schalmeris [lean-to rooms] is all fallin down and decayit'.
  - 20 Dunbar gives an account of the work on the Palace block in 1615–17 in Imrie and Dunbar, *Accounts of the Masters of Works* (note 12), pp. lxxix–lxxxv. Neil Hynd has undertaken a study of the refurbishment of the Royal Apartments in 1615–17 for the return visit of James VI, with excellent detective work in relation to the plasterwork. This paper differs from his conclusions only in relation to the function of the Royal Apartments. This paper suggests that the glory of Murray's work lay in the two floors above, and that the ground floor was refashioned into a linear shrine leading to James's birth room. The lack of distinction of the northern entrance is otherwise difficult to explain.
  - 21 NMRS, ED/150.
  - 22 That the castle was harled is evident in payments in the accounts of the Masters of Works in 1616: 'For drink to him that harrellis the wall in the creddell'; to John Thomson 'for his gryit panes in harling about of the hail auld wark'; and to Walter Bryce for his 'paynes and travellis in harling of the hail wallis round about': Imrie and Dunbar, *Accounts of the Masters of Works* (note 12), pp. 8, 54.
  - 23 The study of wall thickness has embraced structures as various as the House of the Binns through to Blair Adam and a number of chateaux. Provisional benchmarks, established before this piece, suggested the following approximations: 4.5–5.0+ foot for the 15th century; 3.75–4.5 foot for the early 16th century; 3.5 foot for the end of the 16th century; 3.0–3.5 foot for the early 17th century; 2.75 foot between 1675 and 1750; 2.6 foot for William Adam; 2.4 foot for Robert Adam (read from some drawings); and 2.0 foot in 1820 (John Smith at Slains). The study of Edinburgh Castle tends to support these thicknesses.
  - 24 NLS, Map Library, BO, Z 2/14e.
  - 25 W. T. Oldrieve, 'David's Tower at Edinburgh Castle', *BOEC*, 6 (1913), pp. 1–10 (reprinted as a separate volume, Edinburgh 1914). Figure 21 reconstructs the Palace and reduces Davy's Tower downwards to give the ensemble a common parapet level.
  - 26 Gleaned from Imrie and Dunbar, *Accounts of the Masters of Works* (note 12), pp. 21–226.