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JAMES CRAIG'S ORIGINAL DESIGN FOR THE OBSERVATORY
ON CALTON HILL, MAY 1776

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DESPITE ITS PROMINENT position on the Calton Hill, and the distinction of being one of the few surviving works designed by James Craig, the picturesque building on the south west corner of the Calton Hill has not been well served by architectural historians.¹ This short note has been written following the discovery of an engraving of Craig's initial design for the Calton Hill Observatory proper, and explains the genesis of what now survives by Craig on the Calton Hill, here referred to as 'Observatory House'.

The unhappy, chequered and complex history of the Calton Hill Observatory prior to the erection of the present building, the establishment of the Royal Observatory Edinburgh and the creation of the post of Astronomer Royal for Scotland, has been the subject of a previous study.² Briefly, what began in 1776 as a private initiative was taken over by the City, who failed to meet their financial obligations and allowed earmarked funds to be diverted on architectural elaboration. The Observatory itself was completed on a reduced scale only in 1792, after the City had lost a series of legal judgments, and it was completely replaced by W. H. Playfair's new building in 1818.

It was a sorry contrast to the ambitions expressed in 1776, after the Town Council had agreed to lease half an acre of ground on the summit of Calton Hill to Thomas Short to erect a private astronomical observatory open to fee-paying visitors. Following the granting of that lease in April 1776 the proposal became more ambitious, and in late May and early June the Edinburgh newspapers carried an appeal for subscriptions to fund 'a building to be erected on a more elegant plan', with the City Chamberlain acting as treasurer, William Pirnie named as main contractor and James Craig as architect. In a volume of ephemeral tracts in the Bodleian Library, Oxford, is an undated letterpress broadsheet, presumably commissioned by Short, apparently the source of the text for those press advertisements.³ What makes this



Fig. 1. Thomas Short's 'Great Reflector', 1776. (Bodleian Library, Gough Scotl. 263 (23).)

handbill of particular interest is that it includes two illustrations not mentioned in the advertisements: 'Mr. Short's great reflecting Equatorial Telescope, 12 feet focus' (fig. 1), and 'Edinburgh Observatory'. This second engraving (fig. 2) is signed above and to left and right of the scale bar 'J. Craig Archt.' and 'H. Gavin Sculpt.' The scale indicates an octagonal building 30 feet between the faces. The height to the top of the dome is 38 feet 6 inches. The stonework of the ground floor is V-jointed; that above appears to be smooth ashlar — the combination gives visual weight to the ground floor and is frequently seen on façades in the New Town. The flagpole on top of the dome may have been a decorative flourish — it would complicate opening the dome when the telescope was used to sweep the heavens, and be incompatible with zenith observations.

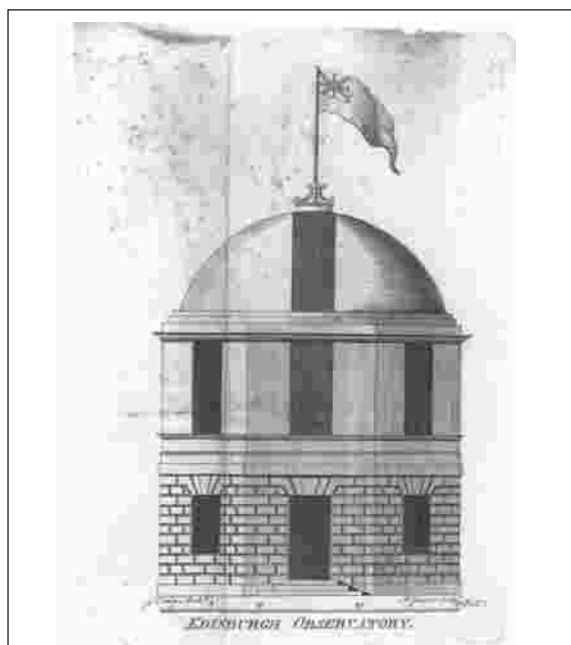


Fig. 2. James Craig's first design for an observatory on the Calton Hill, 1776. (*Bodleian Library, Gough Scotl. 263 (23).*)

The foundation stone for the Observatory was laid by Lord Provost James Stoddart on 25 July 1776, in the presence of the City Magistrates, and the Principal and Professors of the University. The latter were in attendance as they held in trust funds that had been raised earlier in the century, largely by Professor Colin MacLaurin, whose proposal for building an observatory in the upper court of the College buildings failed to come to fruition following his death in 1746.⁴ The interests of the University in having an observatory that would be used for teaching and astronomical research were represented in an expansion to Craig's initial design, with pavilions added to east and west of the dome for the apparatus required for regular scientific observation, and the central octagon raised to a total height of 48 feet, which would have ensured a clear horizon in all directions.⁵ Short's 'great reflector' was to be housed in this dome, and used for public stargazing, with Short benefiting from the fee income.

Not long after this, the scheme was undermined by architectural whimsy, as explained by Hugo Arnot, writing in 1779:⁶

About this time, Mr Robert Adam architect, happened to come to Edinburgh. Upon seeing the intended observatory, founded upon the top of an high and abrupt hill, which terminates in a precipice, he conceived the idea of giving the whole the appearance of a fortification, to which it was excellently adapted. Accordingly the line was chalked out for inclosing the limits of the observatory, with a wall constructed with buttresses and embrasures, and having Gothick towers at the angles. The beauty of the design was so much admired, that the main object was forgot. The workmen left the observatory, already half built, and turned themselves to raise the tower on the south-west brow of the hill ... Upon this building was exhausted all the money destined for the observatory; and besides a considerable arrear was incurred to the tradesmen ... The observatory stands a half-finished work upon the highest hill of Edinburgh, speaking this emphatick language to the eye of every beholder: 'Here is a building, which the folly of its contrivers led them to begin, without considering, that, by their poverty, they were unable to finish it'.

The incomplete hollow shell of Craig's Observatory is pictured in Robert Barker's well known Panorama of Edinburgh, engraved and published in 1790 (fig. 3).⁷ The ground floor walls are complete only as far as the lintels over the windows. The V-jointed stonework of the engraved design has been adhered to. A dome was eventually built in 1792, apparently without adding a second storey, producing a squat building that did not reach even the 38 feet of Craig's original design, and certainly not the 48 feet of the extended design.⁸ No pavilions were erected to either east or west. The completed building was duly handed over to Short's heirs, but even the footprint of this observatory was erased when Playfair's new Observatory was built in 1818.

What remains of Craig's work on the Calton Hill is Observatory House, a dominant three storied round tower, with prominent buttresses at the south east, south west and north west. The Professor of Natural Philosophy, John Robison, appears to have had some influence in the detail of the design of Craig's Adam-inspired folly — the wall-head corbels are presumably required to give additional support to the wall plate on which was set a 17 foot diameter iron wheel, supporting a conical revolving roof with moveable shutters. This room was equipped as a makeshift observatory so that it could house the astronomical instruments that the University intended to provide. From the north east quadrant of the round tower, and running east, is a flat roofed block, also with three floors, on a footprint

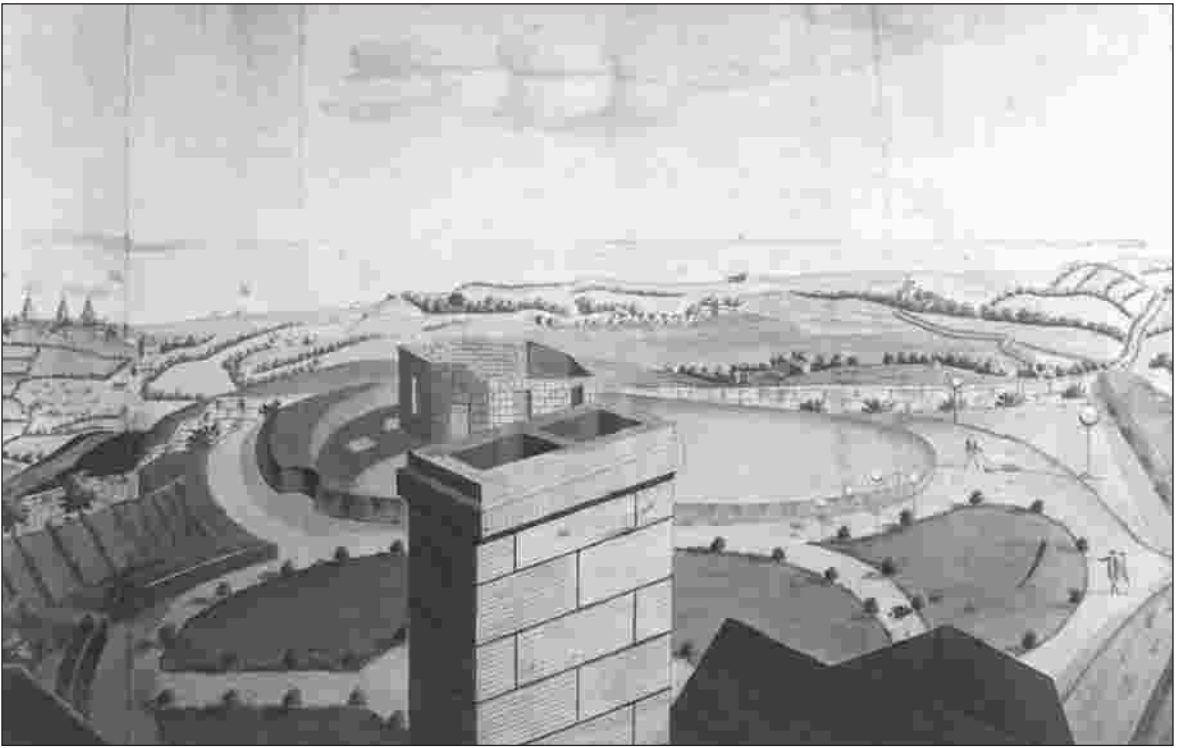


Fig. 3. The incomplete shell of Craig's octagon observatory, as seen from the roof of the dwelling house and makeshift observatory. Detail from 'A Panoramic View of the City of Edinburgh', engraved in aquatint by J. Wells, after R. Barker (1790). (*University of Edinburgh*.)

approximately 20 feet square. This, Short's dwelling house, is largely built from rough hewn masonry, with window openings and buttress quoins in dressed stone. The chimney stack of the house abutted the north side of this flat roof and is the only part of the completed building that appears in Barker's Panorama, which was taken from the top of the building. That illustration also shows the wall surrounding the site. It was flat-topped, stepping down the hillside to the north east, and devoid of the faux battlements and embrasures suggested by Adam. The earliest detailed illustration that has been located of this building dates from the late 1840s. By this date the conical roof no longer opened or rotated. It had been clad with tiles and topped by a large weather vane (fig. 4).

In 1886 the Astronomer Royal for Scotland, Charles Piazzi Smyth, reported that Her Majesty's Office of Works had completed the conversion and extension of Craig's makeshift observatory and dwelling house so that it could become a home for the first assistant observer (fig. 5):⁹

This improvement was indeed a very old question; for it was almost scandalous to expect that a good University man would be always content with a house of two rooms only, in a very exposed situation — because he had chosen Astronomy for his life's pursuit. But every proposition for increasing the said two rooms had been previously met with the local objections that the picturesque architecture of the Calton Hill must not be tampered with, that the people's historical and social landmarks must not be removed ... Genius however of the right kind can do wonders in the present as well as in any past age; and it is surely nothing short of genius which enabled W. W. Robertson Esq, the present superintendent of HM Office of Works in Edinburgh to design and then have practically carried out in hard sandstone and mortar ... such additions to the Assistant's Old Tower at the south west corner of the Observatory grounds, as have not only converted it into a suitable tasty residence, though decidedly of the small or *bijou* order, — but have won praises from all men, so far as I have heard, for its happy mixture with the older masonry, and its increase, rather than decrease, of the appropriate beauties of the situation, while adding substantially to the security and efficiency of the Observatory as such.

Robertson mirrored the first floor run of pointed windows with their prominent drip-stones, and the squared fenestration on the ground and second floors.



Fig. 4. The dwelling house and makeshift observatory, designed by Craig with the technical specification provided by Professor John Robison, and probably completed by 1777. From the title page to *Astronomical Observations made at the Royal Observatory, Edinburgh* [for 1843] (1850). (Bodleian Library.)



Fig. 5. Additions designed by H. M. Office of Works to convert the 1777 building to an enlarged dwelling house, 1886. (Photograph: the author, 1988.)

He put a prominent buttress on the new south east corner, matching those on the round tower. Reflecting Robert Adam's whimsy, the new block planted immediately east of the existing front entrance was topped by battlements set out on corbels and suggesting machicolation. To the north and set back to the west a more domestic-looking range has a crow-stepped gable, topped with an emblematic thistle. The front entrance porch sits in the angle between the two extensions. The whole is finished in well dressed regular stone, and would not have been out of place in the growing Victorian suburbs of the city. The ashlar is in stark contrast to the rough uneven courses of Craig's 1777 building.

Today, from the grounds of the Playfair Observatory, the east and north elevations of Observatory House are mid Victorian. It is the Victorian east elevation that is reproduced in Youngson's influential *Making of Classical Edinburgh* — captioned as 'Craig's Observatory, Calton Hill'. However, this part of what 'looks a little like a converted castle, with a strong hint of domestic gothic, and is really rather extraordinary' is not Craig's work at all.¹⁰ That later authorities have judged this part of the complex to be a century older than it is, is a compliment to the skills of the Office of Works in melding the new domestic buildings to the old dwelling house and makeshift observatory tower. And Charles McKean's more recent description of Observatory House as an 'extraordinary example of ham-fisted picturesque castellated Gothic' does not make clear whether he is referring to the Craig original or the building as a whole.¹¹ The student of architectural history who wishes to judge the merits of a well authenticated building that is the work of

the prize-winning planner of the New Town, must view Craig's makeshift observatory and dwelling house from southerly elevations. From the south east (fig. 5) Craig's work can be compared with the Victorian additions, whilst from the south and the south west the Victorian additions are quite hidden from view. Given the entry in the authoritative *Buildings of Scotland* Edinburgh volume, which appears to confuse the dates of Craig's Observatory and those of Observatory House, it is important to underline that the round tower, with its roof and top floor adapted for astronomical use, and the associated domestic block were Craig's 1777 response to the passing comment that Arnot attributed to Robert Adam, in a picturesque design where visual aesthetics ignored scientific functionality.¹² Indeed, in terms of the prime purpose of the site, the surviving building is an incidental accretion to Craig's centrally sited octagon Observatory.

If Arnot's contemporary memory is to be relied upon, Adam had envisaged towers at each corner of an enclosure that was walled with battlements and embrasures. The whole was to be perched on the Calton Hill to reflect the ancient fortified castle on the other side of the North Loch. Grandiose architectural ambition undermined the scientific purpose of the scheme. Fortunately for the Edinburgh skyline, funding ran out before more than one corner of the whole folly could be completed. In the next century a similar financial factor was to affect completion of the nearby and ambitious National Monument to Scots who died during the Napoleonic wars. Such saving graces have been denied to more recent Edinburgh buildings now all too visible from the Calton Hill!

NOTES AND REFERENCES

- 1 Most accounts do not distinguish clearly between the two separate buildings designed by Craig, or between the two separate parts of Observatory House. See, however, Anthony Lewis, Kitty Cruft and Andrew Fraser, 'Descriptive List of Works and Projects by James Craig', in Kitty Cruft and Andrew Fraser (eds), *James Craig, 1744 [1738]–1795* (Edinburgh 1995), pp. 108–109.
- 2 D. J. Bryden, 'The Edinburgh Observatory, 1736–1811: A Story of Failure', *Annals of Science*, 47 (1990), pp. 445–474. Full references to details cited without reference in the present note are to be found in this article.
- 3 Bodleian Library, Oxford, Gough Scotl. 263 (23). There are minor differences in capitalisation, whilst the second paragraph of the handbill opens 'Contributions' in contrast to 'Subscriptions' in the press notices.
- 4 For an account and an illustration of the proposed building, see William Maitland, *The History of Edinburgh* (Edinburgh 1753), p. 375.
- 5 Contemporary press reports, cited in Bryden, 'Edinburgh Observatory' (note 2).
- 6 Hugo Arnot, *The History of Edinburgh* (Edinburgh 1779), pp. 416–417. Arnot's attribution to Adam is quite unequivocal, though the suggestion may have been no more than a passing remark. It does not appear to be supported by any records in the voluminous Adam archive, not being mentioned in such comprehensive studies as Geoffrey Beard, *The Work of Robert Adam* (Edinburgh 1978) or David N. King, *The Complete Works of Robert and James Adam*, new edn (Oxford 2001).
- 7 See Ralph Hyde, *Panoromania* (London 1989), chap. 2 and fig. 27.
- 8 The completed building is shown in a printed key to Barker's Panorama in 1795, reproduced in Bryden, 'Edinburgh Observatory' (note 2).
- 9 Charles Piazzi Smyth, *Astronomical Observations made at the Royal Observatory, Edinburgh, 1878–1886*, vol. 15 (1886), p. 2.
- 10 A. J. Youngson, *The Making of Classical Edinburgh 1750–1840* (Edinburgh 1966), pp. 158–159.
- 11 Charles McKean, *Edinburgh, An Illustrated Architectural Guide*, new edn (Edinburgh 1992), p. 103.
- 12 John Gifford, Colin McWilliam and David Walker, *The Buildings of Scotland: Edinburgh* (Harmondsworth 1984), p. 436. Craig's short-lived Observatory is not mentioned, but the completion of Observatory House is given as 1792, with the quote that the style was 'far inferior to what had been intended' apparently applied to the latter.