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The Bell Tower at Berwick-upon-Tweed

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The Bell Tower lies to the north of the town of Berwick, and is located mid-way between the Tweed estuary and the sea, approximately 100m to the west of Lord's Mount (fig. 1). It is an octagonal structure with a roughly circular basement, stands four stories high and is tiered, with a chamfered plinth course between each storey (figs. 2, 3). In addition to the (now blocked) doorways on its east-west axis, which once gave access to a wall-walk, there are rectangular window openings on the cardinal faces of its upper three levels. At one time it formed an integral part of the northern mural defences, whose exposed core can be seen to be bonded to the tower on its western face (Face 1). Defences in this area began as a palisade and ditch built by Edward I after his capture of the town in 1296, though the medieval stone wall here is primarily of early fourteenth century date. These northern defences were critical to the security of the town, since it lies to the north of the Tweed, a river which elsewhere forms a natural boundary between England and Scotland.

CONSERVATION

The Bell Tower is in the guardianship of English Heritage. By the early 1990s the monument was in need of consolidation, with the decay of timber lintels causing the collapse of areas of masonry, particularly in the upper storeys. Moreover, the exposed position of the tower, together with the damaging effects of a rapid-hardener cement used in earlier consolidation projects, had caused serious weathering of both masonry and joints. A first-aid consolidation project was undertaken in 1992,¹ involving the removal of harmful vegetation, the replacement

of defective timber lintels, limited stone replacement and substantial areas of repointing. The project aimed to preserve as much of the original fabric and its historic repairs as possible; replacement stone was closely matched with the original, as were the various mortar mixes used. To assist in this conservation strategy a survey of the monument was commissioned. This was based upon a photogrammetric plot of the exterior elevations of the tower which was subsequently enhanced by the author, who added architectural details, the identification of stone and mortar types, and the degree of weathering (figs. 4a and 4b). Following the clearance of fallen debris and masonry from the interior of the tower, a small-scale excavation was undertaken in an attempt to determine the date and nature of its internal circular basement – and to see if this correlated with documentary references to earlier bell towers on this site.

HISTORY

Earlier research into the Bell Tower at Berwick has been limited,² but this distinctive landmark has attracted considerable attention through the ages, being depicted in various guises and receiving brief mention in many accounts of the town's fortifications. Bell towers were of considerable strategic importance in the middle ages and their construction and maintenance are repeatedly mentioned in accounts of Berwick's fortifications. The correlation between such references and the surviving Bell Tower is however difficult, as there appears to have been more than one such tower within this area of Berwick's northern defences, with the nomenclature for these towers not being static

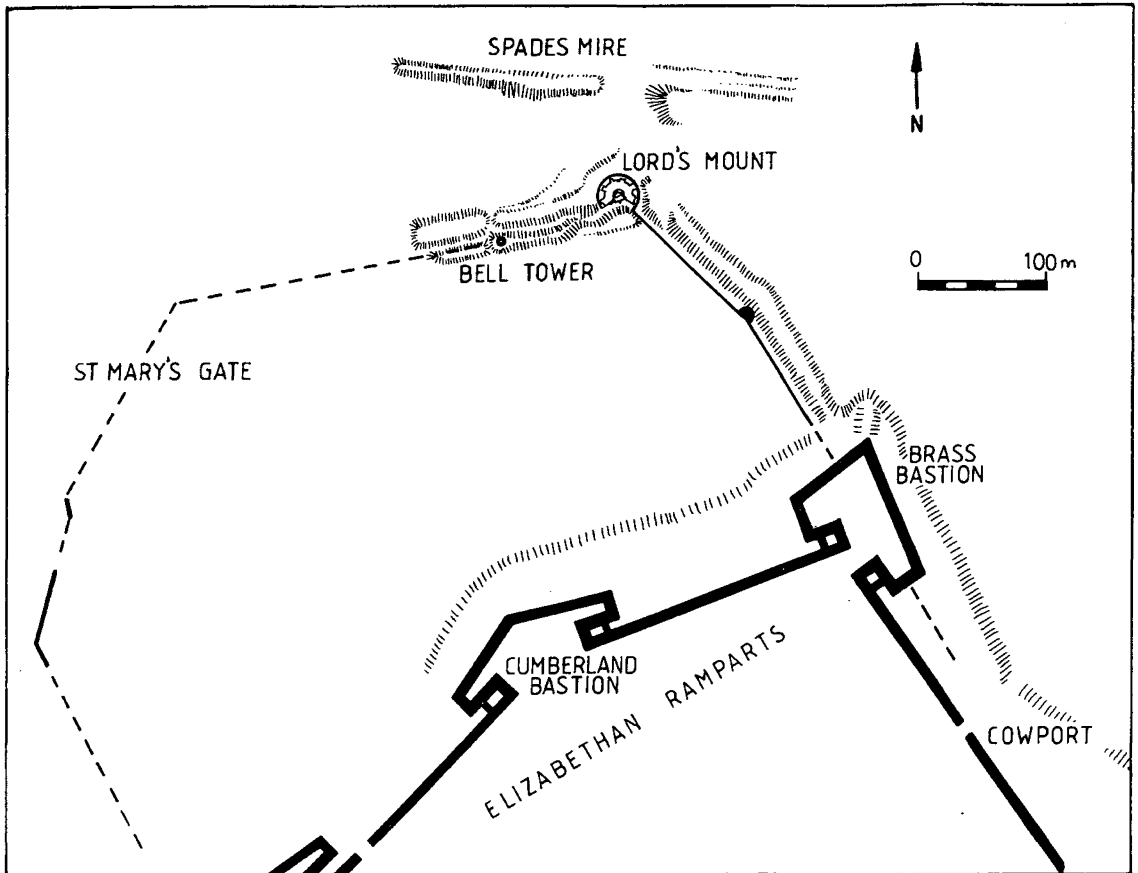


Fig. 1 The location of the Bell Tower in Berwick's northern defences.

through time, varying from 'bell tower' to 'day-watch tower' to 'alarm bells'. Several early accounts of strategic towers cannot therefore be ascribed with any certainty to the site of the present Bell Tower. Nevertheless, it is worth referring to some of these, as they give an indication of the important role such buildings played, as well as providing descriptions of possible forerunners to the present structure.

The earliest reference to a watch tower on Berwick's defences is in an account by King Richard II's chamberlain, Sir Gerard Heron in 1392:

and in money paid to John Wirsoppe, mason, for making and repairing a tower near Walleisyate in Berwick town, and for one "day-wache" and one

alarm bell in the same tower, made under a form laid down by the said earl of Northumberland, using timber, stone, lime and other things necessary for the tower at John's expense, under an agreement made with him by the earl and Gerard Heron, in all for the task, £28.13s.4d. . . The same chamberlain accounts for three fir spars bought and used on the repair of the watch-houses, 12d. . . and on lead bought and used on the hooks of six new windows in the upper houses of the tower above the watch bell at Walleisgate in Berwick town. . .16d. . . And on fifteen stones of iron bought for the fastenings of doors and windows in that tower and doing other necessary things, at 10d. each, 12s.6d.³

From the above description it can be inferred that a tower located near Wallsgate (and therefore in the vicinity, and possibly on the site, of

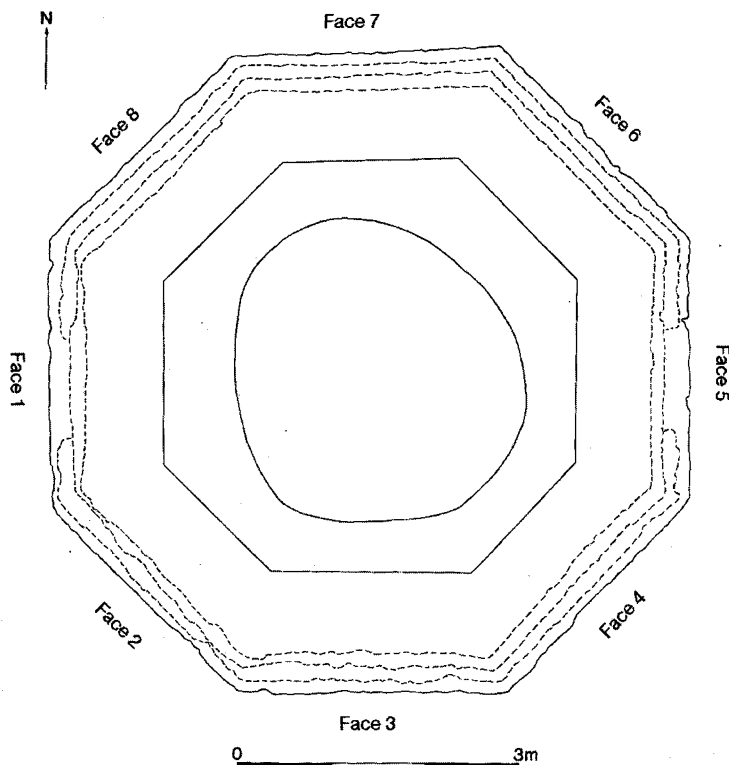


Fig. 2 Schematic plan of Berwick Bell Tower at ground level (solid lines), with stepped rises (hatched lines).

the present Bell Tower), was in the late fourteenth century, primarily a stone structure, with windows for observation and an alarm bell. Between the years 1446–9 a new alarm bell was transported from London to Berwick,⁴ but it is not known whether this was intended for the same day-watch tower as that described above.

A comprehensive survey of Berwick's walls was undertaken by Christopher Morris and Richard Cavendish, probably in 1533; it refers to several observation towers in this critical northern portion of the town's defences.⁵ An unnamed tower and Wawles Tower, on the line of the northern medieval wall, were then reported to be 'dampned and fylled full of erth' and clearly in a sorry state of repair.⁶ At the north eastern corner of these medieval defences this survey does refer to a bell-tower, but this structure was clearly not on the same site as its present namesake, and can in fact be identified as the corner tower which was replaced in 1539

by a circular artillery fort known, by 1564, as Lord's Mount.⁷

In 1547 there was renewed interest in the effectiveness of Berwick's defensive warning mechanisms when a request was made for a new alarm bell for the 'day watchhouse'.⁸ The importance now placed upon an effective watch tower and signalling system is illustrated by the Ancient Statutes of Berwick, signed by Queen Elizabeth I on 1 October 1560, which prescribe the death penalty for failure to man the day-watch and ring the alarm bell in an emergency.⁹ Unfortunately these documents give no specific location to this 'day-watchhouse' and watchbells, but they do indicate the existence of several watchbells in various quarters of the town.

It will be evident from this review that we lack conclusive documentary evidence for the existence of a tower on the site of today's Bell Tower before Elizabeth's period. However, by



Fig. 3 Berwick Bell Tower, view from the south-east 1994: English Heritage. Copyright English Heritage Photo Library/Neal Askew.



Fig. 4a Berwick Bell Tower: elevations of faces 1-4.



Fig. 4b Berwick Bell Tower: elevations of faces 5–8.

the mid-sixteenth century there clearly was a tower on or near the site because it is depicted on two Elizabethan pictorial maps, dating from 1561 and 1570.¹⁰ On both these maps the tower is shown with a semi-circular ground plan (fig. 5), but an enlarged detail on Rowland Johnson's 1561 map represents the ground plan as a complete circle.¹¹ Whether this was a stylistic convention or was intended as an accurate depiction of the existing tower's ground plan is uncertain.

In 1558 the eminent military engineer and Surveyor of Berwick, Sir Richard Lee, embarked on the programme of bastion fortifications which remain such a prominent part of Berwick's visible history.¹² As part of this project Lee proposed the demolition of the ancient bell tower on the grounds that it might prove to be of use to an approaching enemy.¹³ Although Lee had not included the outer northern defences in his new defence scheme, he wished to retain them until work on the inner bastioned scheme was well advanced. Delays on this enormously costly project fuelled mounting concern over the effectiveness of the town's northern defences. In a change of policy, the tower was therefore retained until 1577, when a substantial programme of maintenance on the northern medieval walls, including the rebuilding of this 'day watch tower' was implemented. The location and dimensions of this tower accord so well with the present Bell Tower that the two can be regarded as certainly one and the same structure:

Since the 29th April last, the castle, town walls betwixt it and the Bell Tower, and the fallen wall at Mary gate, are made up – a new ward house built at Mary gate – the old palace, windmills and other places repaired. The day watch tower is rebuilt in rough stone in eight "cantes", 26 feet high above the walls, and 14 feet in timber above the same stone work, surmounting the old tower six feet in height.¹⁴

Despite this account, there were some suggestions at the turn of the twentieth century that the surviving octagonal Bell Tower was a relic of the thirteenth-century Edwardian walls.¹⁵ Although these were quickly dispelled at the

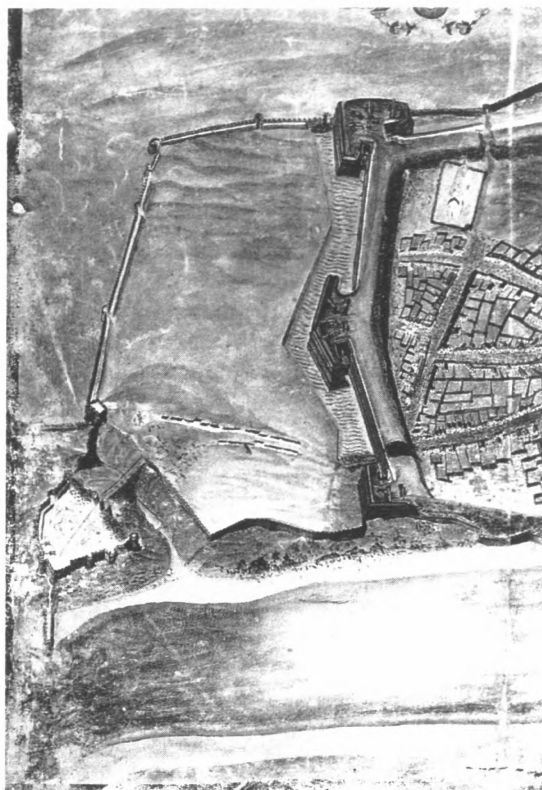


Fig. 5 The location of a semi-circular tower on the site of the present Bell Tower as depicted in a plan of circa 1570: British Library, Cotton MS, Augustus I ii 14 (Reproduced by permission of The British Library).

time, there remains the possibility that the sixteenth-century tower was built on the site, and more significantly on the foundations, of a pre-existing tower, as proposed by Commander Norman in his 1907 official guide to Berwick's fortifications:

It must be explained that the octagonal structure which meets the eye is not the original Edwardian Beacon or Bell Tower, which was pulled down by Elizabeth, but its "Tudor representative" or successor erected not long after. The circular base of the first tower may be seen by looking down through one of the window openings.¹⁶

The theory that the existing Bell Tower stands on an Edwardian base was endorsed by Pevsner

and by Cowe,¹⁷ but would appear to conflict with the pictorial representations of a *semi-circular* tower in this location on the two Elizabethan maps already cited. Unfortunately, partial excavation of the interior of the tower was inconclusive in providing a date for the circular platform on the interior of the tower, nor does the exposed fabric unequivocally indicate that it belonged to a pre-Elizabethan phase.¹⁸ It remains a possibility therefore that the circular base is contemporary with the octagonal construction and was a device employed to assist in the laying out, and subsequent construction, of the existing tower.

The *rough stone* described in the account of the 1577 construction appears, from the original fabric surviving on today's Bell Tower, to have consisted of roughly dressed, coursed, sandstone rubble with ashlar quoins, pointed with a lime-based mortar. Some of the original architectural details were, however, far from "rough": thus although now weathered, the surviving window jambs and lintels are all chamfered and a depressed Tudor arch formed a lintel over the wall-walk doorway of Face 1. Moreover, the blocked recesses above this doorway, and its counterpart on Face 5, originally held decorative coats-of-arms, which were only lost towards the end of the last century.¹⁹

The present height of the tower is only marginally less than the measurement recorded in 1577 for the top of the stone structure, showing that little besides the timber superstructure has been lost from the height of the building. A late seventeenth-century oil painting of Berwick,²⁰ provides the only picture of this timber superstructure, which extends a couple of stories above the stone walling and may represent the original observation platform erected in 1577. The (now blocked) wall-walk doorways indicate that the medieval wall, though lowered, had been maintained and strengthened to resist artillery bombardment, its height being recorded in 1587:

The old wall from the Mary gate to the Day watch, with the "vamure" 4ft high, 17ft high. From the Day watch to the Bell Tower, same height.²¹

In 1587 the tower is called the "Day watch", but by the early seventeenth-century the term "Bell Tower" was applied to the octagonal structure which survives with that name in Berwick today; this is illustrated by a description of the town, probably dating to the 1620s:

It hath five goodly Gates, a Watch Tower called the Bell Tower which gave warning by towleing a Bell at the sight of any Shippes and did hang out a Flagge, givinge as many towles as there were Shippes, and such like if they espied any horsemen within our Bounders.²²

In 1619 the Berwick Guild agreed to the sale of the Bell Tower's bell:

It is this day ordered by generall consent of the Guild that the Bell hanging in the Bell tower shalbe sold to Mr John Durie of Burnt Island in the kingdome of Scotland which Bell and lockers being weighed amounteth to six hundred fiftie eight pound five stone and twelve pound to the hundreth wher that wick att xiid the pound amounteth to thirtie sixe poundes tenn shillings for wich some a bill is taken from the said John Durie and Mr John Wilkyn burgesse to be paid within one month next after the shipping of the said bell.²³

The fate of this bell can probably be traced because a recast bell contemporary with these events (fig. 6) still survives in Burntisland, Fife, where it is housed in the former burgh chambers.²⁴ This bell was recast in 1677, but local tradition preserved the story that the original bell, cast in 1595, had been purchased from Berwick, where it had supposedly hung in the tower of the Castle.²⁵

The next Government was however concerned over the absence of Berwick's bell and, overlooking the earlier decision about its sale, tried to bring the Mayor to account during a visit from Charles I to the town in 1633.²⁶ A replacement bell for Berwick's Bell Tower was finally installed in 1639²⁷ at a time when improvements were being made to the northern medieval walls as an outer line of defence;²⁸ its last recorded tolling was staged by Charles Jackson and William Couttie in 1683 as a symbolic gesture over a border salmon fishing dispute.²⁹

By the eighteenth century the Bell Tower and northern defences of Berwick had lost their



Fig. 6 The bell that was possibly sold to Burntisland, Fife, in 1619 (Reproduced by permission of Fife Council Museums: Kirkcaldy Museum & Art Gallery). (Height of bell 810 mm)

strategic importance. Despite this, the question of the Tower's maintenance was raised again in 1714, as it had proved a useful navigational landmark,³⁰ a function which is fully apparent in the Buck brothers' 1745 engraving of the town. In 1799 Fuller refers to the Bell Tower as a "ruin" of only four stories in height, but recommended that further stories be added:

and the furnishing of it with a proper telescope, would answer the purpose, 1st, of a useful observatory in time of war, 2dly, of an excellent land-mark for ships at sea, and 3dly, of a great ornament to the town'.³¹

By the turn of the nineteenth century attention was largely focused on Fuller's third category, that of an ornament to the town. It was clearly an important landmark on Berwick's skyline and as such features in a painting by that most

famous of landscape artists, J. M. W. Turner dated 1797.³² Somewhat later Robert Good's fanciful lithograph of 1853 gives the four storied Bell Tower an onion dome worthy of the Kremlin, but his illustration bears little, if any, resemblance to the actual structure – nor in all probability to the northern defences as they appeared in 1296, which it purports to depict. However, more accurate depictions of the Bell Tower based on observation do survive from the nineteenth century, and help to provide a rough chronology for the early modern repairs which are still evident in the fabric. The tower appears as a romantic ruin *par excellence*, complete with dairy maid and stray cow, in an inset to a plan of Berwick on the frontispiece to Sheldon's 1849 history of the town³³ (fig. 7). Although the setting is slightly contrived, this engraving provides a good record of the ruinous state of the tower at the time. The central face depicted is that of the east-facing Face 5, as can be confirmed by the upstanding sections of wall behind the monument. The quoin stones at its north eastern angle are shown as missing, this area having subsequently been replaced with roughly coursed limestone. The jambs of the wall-walk opening on the second tier are depicted as incomplete and are likewise now replaced with limestone. The upper storey is drawn as being in a ruinous state, with the uppermost courses having crumbled to below the level of the window lintels.

What is probably a more accurate depiction is provided by John C. Buckler's illustration of the 'Watch Tower at the NE angle of Fortification' of 1877 (fig. 8),³⁴ which was clearly produced from direct observation and provides an extremely useful record of the tower's condition at this slightly later date. Faces 1–3 have been sketched in such detail that individual quoin and lintel stones can be matched with those surviving today. The uppermost storey had by now been consolidated,³⁵ and the masonry appears to be in a stable condition, apart from substantial sections of curtain wall butting up against Face 1, of which little evidence now remains. In the sketch a further octagonal tier is revealed underlying the lowest chamfered

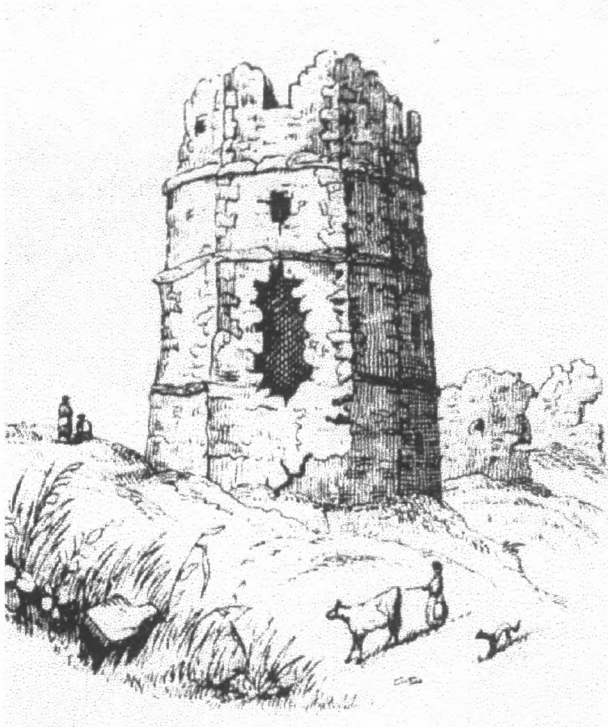


Fig. 7 Sketch of the Bell Tower in the frontispiece to Sheldon's 1849 *History of Berwick-upon-Tweed*.

plinth course; this is now buried beneath the present ground level.³⁶

At some stage towards the end of the nineteenth century further consolidation of the Bell Tower took place, involving the blocking of the wall-walk doorways with small, coursed sandstone and a lime-based mortar. In a separate programme of works at about this time large areas of weathered sandstone were removed and patched with roughly coursed limestone (and an occasional stone of granite or whin), and hand-fired bricks for galetting. It is possible that this limestone cladding of the ground floor tier of Face 1 was in progress when at the turn of the century John Swain produced his engraving of the Tower based on a photograph by W. Green;³⁷ 'work in progress' would account for the bare, uncoursed appearance of his representation of this part of the monument, with

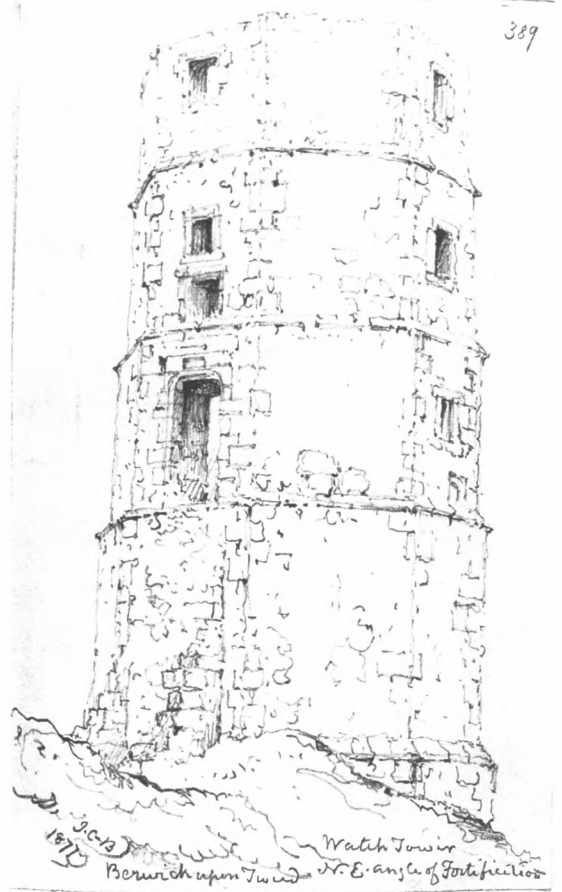


Fig. 8 'Watch Tower at the NE angle of Fortification' by J. C. Buckler 1877: MS Add. 36440 f. 89 (Reproduced by permission of the British Library).

the two reclining men alongside possibly representing workmen.

One of the earliest postcards of the Bell Tower (fig. 9),³⁸ shows it festooned with flags, providing the backdrop for a group of local fishermen and their families, possibly celebrating Queen Victoria's Diamond Jubilee in 1897. The production of such postcards depicting the Tower escalated at the beginning of the twentieth century,³⁹ in response perhaps to civic pride aroused by its proposed destruction at this time. The Rev. James King, vicar of St. Mary's,



Fig. 9 Early postcard of the Bell Tower, BRO.281/14 (Reproduced by permission of Berwick-upon-Tweed Record Office).

organised a campaign against the Town Council's proposed demolition of the two remaining fragments of medieval wall near the Bell Tower for a housing development.⁴⁰ This resulted in the Bell Tower and the afore-mentioned fragments of wall being leased to the Government in 1904.⁴¹ In 1906 the Office of Works carried out consolidation works on the Tower,⁴² this date matching that inscribed into the scotch pointed capping of the uppermost tier of Face 1.⁴³ Further minor works were carried out in the 1930s.⁴⁴

SUMMARY – AND SOME PARALLELS

Although doubt still surrounds the nature of any previous towers on the site of the present

Bell Tower, this octagonal structure was certainly in existence by 1577. Its history has been long and varied, with a gradual shift of function through time from strategic to monumental. Pictorial and written records have made it possible to compile a history of its construction and maintenance for over 400 years; the consolidation project of 1992 being the most recent. Berwick Bell Tower is a unique monument in Britain and remarkable in its survival. Such towers were once numerous: Sheldon recorded 87 such towers as having been extant in Northumberland alone in 1460,⁴⁵ but few free-standing bell towers, with no ecclesiastical association, remain in Britain today. Given this widespread loss it is difficult to find close parallels for the form of the Berwick structure. Loose parallels may be drawn with the upper portion of the octagonal Roman pharos at Dover, which was reconstructed for use as a belfry for the adjoining church of St. Mary de Castro between 1426 and 1437.⁴⁶ One of the best visual parallels to Berwick's Bell Tower, however, is a three-tiered polygonal tower in the walled defences of the Kremlin.⁴⁷ It is described as Ivan the Great's Bell Tower, and appears, on the evidence of a sixteenth-century Leningrad Library codex to have been rebuilt on the site of the church of St. John Climacus (1505), the foundations of which are depicted as octagonal.⁴⁸ Both sixteenth-century bell towers share an octagonal plan, were tiered in their construction and furnished with apertures for observation and to allow for the tolling of their respective bells to warn of attack. With their loss of strategic importance many such towers were left to decay, and it is perhaps thanks to Berwick Bell Tower's additional role as a navigational landmark, that it was maintained sufficiently to survive into the nineteenth century when antiquarian interest ensured its preservation. The 1992 consolidation project with its limited stone replacement, treatment and replacement of defective timber lintels and programme of repointing will ensure that the Bell Tower in Berwick will continue to provide a "great ornament to the town"⁴⁹ for many years to come.

ACKNOWLEDGEMENTS

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NOTES

¹ R. Stockdale was the superintending officer, R. Gardener the site supervisor, and D. Sherlock the inspector of ancient monuments overseeing the project.

² Edward F. Herdman, "The Bell Tower, Berwick", *The Northern Chronicle*, October 1890; F. M. Cowe, "The Bell Tower" (Berwick of Yesterday Series), *The Berwick Bulletin*, 30 August 1978; Liz Maxwell, "16th century Bell Tower is restored", *The Berwick Advertiser*, 12 November 1992.

³ PRO, E101/483/5. I am grateful to Dr. Henry Summerson for this transcription and the next reference.

⁴ Account of Thomas Lematon & Robert Forster, executors of John Lematon's (clerk of the King's Works) will (d.1449), PRO, E101/483/11.

⁵ PRO, E36/173; AA², I (1857), 87-94; "The Booke of the Circuyte and particular Decayes of the Town & Castell of Barwicke" transcribed by M. Woodman in *Hist. Berwick Nat. Club*, 14 (1892-3), 177-9. Marcus Merriman considers the Morris-Cavendish survey to have been conducted early in 1533 (H. M. Colvin (ed.), *The History of the King's Works* IV, 1485-1660 (Part II) (1982), 633 and note).

⁶ Iain MacIvor claims the base of the present Bell Tower to have formed the lower portion of the 'Damned Tower' in "Artillery and Major Places of Strength in the Lothians and the East Border 1513-1542" in David H. Caldwell (ed.), *Scottish Weapons*

and Fortifications 1100 - 1800 (1981), 102, Edinburgh, whilst he and others have claimed elsewhere that the precursor to the present Bell Tower was Walls Tower (J. R. Kenyon, "The Ordnance and the King's Fortifications in 1547-48: Society of Antiquaries MS 129, Folios 250-374", *Archaeologia*, 107 (1982), pp. 199-204. From my sequential reading of the 1533 survey it seems most logical that the tower occupying this site was the unnamed tower, described as "dampned", which may subsequently been modified to "damned", causing some additional confusion. Walls Tower was to the east of this tower, and is depicted in early maps and plans as a rectilinear structure, possibly incorporating a gateway.

⁷ K. G. White, "The Spades Mire, Berwick-upon-Tweed", *PSAS*, 96 (1962-63), 359; I. MacIvor (above note 6), 136.

⁸ Calendar of State Papers Domestic 1601-3, Addenda 1547-65: 175.

⁹ John Scott, *Berwick-upon-Tweed: the History of the Town and Guild* (1888), appendix IV, 451-3.

¹⁰ Cecil Papers Maps I, 22 (Hatfield House); BM Cotton MS Augustus I ii 14 (reproduced in H. M. Colvin (ed.) (above note 5), pl. 41).

¹¹ Cecil Papers Maps I, 23 (Hatfield House).

¹² I. MacIvor, "The Elizabethan Fortifications of Berwick-upon-Tweed", *Antiquaries Journal*, 45 (1965), 64-96.

¹³ Merriman (above note 5), 657.

¹⁴ Joseph Bain (ed.), *Calendar of Border Papers*, I (1894) Edinburgh, 30 August 1577, no. 17, Robert Bowes to Lord Burghley.

¹⁵ Speech by F. M. Norman, June 1904, "Miscellaneous letters and papers of the Berwick-upon-Tweed Historic Monuments Committee, 1905-1918. BRO, Y.4/13.

¹⁶ Francis Martin Norman, *Official Guide to the Fortifications*, Berwick Historic Monuments Committee (1907), 12.

¹⁷ Nikolaus Pevsner, *Northumberland* — [The Buildings of England] 2nd. ed. (1992), 175; F. M. Cowe, *Berwick-upon-Tweed - A Short Historical Guide* (1984), 39.

¹⁸ Undertaken in the autumn of 1992 by D. Sherlock and the author.

¹⁹ 'Over the entrance door to the west may still be traced the Royal Arms of England - three lions rampant' (Frederick Sheldon, *History of Berwick-upon-Tweed* (1849), 234); 'Old inhabitants say that on these stones were carved certain coats-of-arms, but of what nation, or family, is unknown' in Herdman (above note 2).

²⁰ Housed in Berwick Town Hall. Purchased 1959, artist unknown.

²¹ *Calendar of Border Papers*, I (above note 14), 27 September 1587, no. 544.

²² BM MS Harley 7017, ff 167–8 transcribed by F. M. Cowe, "A seventeenth century description of Berwick on Tweed", *Hist. Berwick Nat. Club*, 36 (1964), Pt. III, 297.

²³ BRO, B.I/8 Guild Minute Book, March 1619/20.

²⁴ Dallas Mehan, *pers. comm.*

²⁵ D. MacRae, "Bell in the Town House at Burntisland", *PSAS* (1915), 339.

²⁶ *Calendar of State Papers, Domestic, Charles I, 1633 – 34 (1863)*, 17 July 1633, Secretary Coke to the Mayor of Berwick.

²⁷ Francis Cowe, *pers. comm.*

²⁸ MacIvor (above note 12), 93.

²⁹ Sheldon (above note 19), 231–3.

³⁰ BRO, B.1/14 Guild Minute Book, 4 June 1714.

³¹ J. Fuller, *The History of Berwick-upon-Tweed* (1799), 582.

³² *Sir Walter Scott Countryside* (An album of J.M.W. Turner landscapes), (1976), Ramsay Head Prints no. 2.

³³ Sheldon (above note 19), frontispiece.

³⁴ British Library ADD MS 36440/389/9150125.

³⁵ Partial restoration of the Bell Tower was accredited to the Committee of the Berwick Improvement Society by Herdman (above note 2).

³⁶ 4 December 1991. Letter from R. Stockdale to D. Sherlock concerning the raising of the ground level to the south and east of the tower to the level of the plinth course.

³⁷ W. Dawson, *Illustrated Guide to the Borderland* (1885), 47; Rev. James King, *The Edwardian Walls and Elizabethan Ramparts of Berwick-upon-Tweed* (1906), frontispiece.

³⁸ BRO, BRO. 281/14.

³⁹ *The Berwick Advertiser*, 23 March 1906.

⁴⁰ King (above note 37), 11–18.

⁴¹ BRO, D.1/10 Town Council Minute Book, 5 July 1904.

⁴² *Berwick Journal*, 15 February 1906.

⁴³ Term applied to mortar with high cement content and surface finish of large aggregate pebbles used by the Scottish Office.

⁴⁴ Note on back of photograph of Face 1 in English Heritage archive: "faced up flush where curtain wall meets tower in early '30s".

⁴⁵ Sheldon (above note 19), 234.

⁴⁶ H. M. Colvin (ed.), *The History of the King's Works II: The Middle Ages*, (1963), 640.

⁴⁷ *Litsevoi Letopisny Svod*, f.475 no. 949, Leningrad Library.

⁴⁸ *ibid.*, f.647.

⁴⁹ Fuller (above note 32), 582.

