

Hadrian's Wall: Milecastles, Turrets and the Curtain



ARCHAEOPRESS ROMAN ARCHAEOLOGY 133

HADRIAN'S WALL: MILECASTLES, TURRETS AND THE CURTAIN

Edited by

Derek A. Welsby
and
Nick Hodgson

ARCHAEOPRESS ARCHAEOLOGY



ARCHAEOPUBLISHING LTD

13-14 Market Square

Bicester

Oxfordshire OX26 6AD

United Kingdom

www.archaeopress.com

ISBN 978-1-80358-145-7

ISBN 978-1-80358-146-4 (e-Pdf)

© the authors and Archaeopress 2025

Front cover: The inner west pier and voussoirs of the north gate at Milecastle 37 (photo: Derek A. Welsby). Plan of Milecastle 37, Housesteads overlain by a 10pm grid (this vol., 24, fig. 14).

All rights reserved. No part of this book may be reproduced, stored in retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying or otherwise, without the prior written permission of the copyright owners.

This book is available direct from Archaeopress or from our website www.archaeopress.com

Dedication

To the memory of our good friends
and esteemed colleagues

Julian Bennett (1949 – 2025)

Paul Bidwell (1949 – 2022)

Contents

List of Figures	iii
List of Tables	ix
Introduction	1–2
<i>Derek A. Welsby and Nick Hodgson</i>	
Laying out the ground plans of turrets and milecastles on Hadrian's Wall	3–64
<i>Derek A. Welsby</i>	
Introduction	3
Turrets	5
Square and rectangular turrets	7
Stone-curtain turrets	11
Turf-curtain turrets	17
Thick-walled turrets	19
Anomalous turrets	20
Milecastles	20
The defences – stone-walled milecastles	20
The defences – turf-walled milecastles	31
Internal buildings	32
Discussion	37
Milecastles	37
Gateways	50
Southern corners	50
Turrets	53
Conclusion	58
Acknowledgements	59
Bibliography	59
Did Hadrian's Wall have a wall walk?	65–83
<i>Paul Bidwell</i>	
Introduction	65
The width of the Wall	66
Walls blocking turret recesses	68
The line of the later Stone Wall in relation to the stone turrets originally built as part of the Turf Wall	69
Chamfered stones from a string course	72
The bridges on the line of the Wall	73
A crenellated parapet	76

Weaponry and use of the Wall-walk as a fighting-platform.....	77
Surveillance, patrols and defence.....	79
The Antonine Wall.....	80
Conclusions	81
Acknowledgements.....	81
Bibliography	82

The stones from a chamfered string course on Hadrian's Wall and their implications for the appearance of the Wall-top 85–104

Nick Hodgson

Introduction.....	85
The chamfered string course stones.....	86
The chamfered string course and the wider question of parapet and wall-walk.....	93
The wall-walk as a fighting platform or a sentry walk	97
Acknowledgements.....	99
Appendix 1: Published records of chamfered string course stones from Hadrian's Wall	99
Appendix 2: The Berm Obstacles	101
Bibliography	103

Milecastle gate towers: present or absent? 105–161

Derek A. Welsby

Introduction.....	105
Discussion.....	105
Milecastle gateway plans	105
Milecastle gateway superstructures.....	106
The presence or absence of towers over milecastle gateways.....	111
Load-bearing issues.....	111
Evidence from fort gateways	113
Issues relating to the ground plan	122
Milecastles and the superstructure of the curtain.....	125
Tower or no tower?	128
Conclusion.....	138
Acknowledgements.....	141
Appendix 1. Inventory of milecastle gates where there is relevant data for use in this study	142
Appendix 2. Measurements of the visible stonework in milecastle and fort gates along Hadrian's Wall ...	154
Bibliography	157

List of Figures

Laying out the ground plans of turrets and milecastles on Hadrian's Wall	3
Figure 1. East-west and north-south external dimensions (<i>pm</i>) of turrets measured above the offsets ...	6
Figure 2. Deviation of turret dimensions from the 2 x 10 Roman foot module	10
Figure 3. Turret 48b, Willowford West: the north wall of the same thickness as the side and rear walls, looking south east.....	11
Figure 4. Sections through turret walls (scale 1:50)	12
Figure 5. Thicknesses of stone-curtain turrets' side and rear walls above the offsets. Tapered walls are not included	14
Figure 6. Turret 48b, Offsets on the exterior face of the turret's east wall and on the south face of the curtain.....	14
Figure 7. Offset on the north face of the curtain across the location of Turret 48b, looking south east.15	15
Figure 8. Turret 10a, Throckley East during excavations directed by Julian Bennett in 1980, looking north north west.....	15
Figure 9. Turret 41a, Caw Gap demolished during the Roman period, looking west north west.....	16
Figure 10. Thicknesses of turf-curtain turret walls above any offsets	17
Figure 11. Turret 52a, Banks East: chamfered offset on the north face, looking east (scale bar 200mm)	18
Figure 12. Milecastle 48, Poltross Burn: two offsets on the inner face of the east wall (scale bar 200mm)	21
Figure 13. Sections through milecastle walls (scale 1:100).....	22
Figure 14. Plans of Milecastles 27, 37, 39 and 42 with their layout grid (scale 1:500)	24
Figure 15. Plans of Milecastles 48, 49SW and 50SW with their layout grid. The plan of Milecastle 48 is measured along the slope - the cream fill represents the location of the southern wall in horizontal plan. Milecastle 50SW is shown both with a 10pm grid and a 10pd grid (scale 1:500)	28
Figure 16. Plans of Milecastles 52SW, 53SW and 54SW with their layout grids. Two possible grids are depicted for Milecastle 52SW (scale 1:500)	30
Figure 17. Plans of Milecastle 79SW with layout grids based on the use of a 10pm <i>pertica</i> or a 10pd <i>pertica</i> (scale 1:500)	31
Figure 18. Plans of Milecastles 49TW, 50TW and 79TW with their layout grids. Milecastle 50TW is shown with a 10pm and a 10pd grid (scale 1:500).....	33
Figure 19. Plans of the primary internal buildings in Milecastles 9, 35 and 37 with their suggested layout grid (scale 1:250)	34
Figure 20. Plans of the primary internal buildings in Milecastles 39, 47, 48 and 50TW with their suggested layout grid (scale 1:250).....	36
Figure 21. Milecastle 48, Poltross Burn: view of the interior illustrating the steeply sloping site occupied by this milecastle, looking east.....	38
Figure 22. Satellite images of Milecastles 42, 44, 45 and 48. The dotted outline is that of Milecastle 48. a. Milecastle 42 (Google Earth, 1 st October 2007); b. Milecastle 44 (Google Earth, 1 st January 2002); c. Milecastle 45 (Google Earth, 1 st January 2002); d. Milecastle 48 (Google Earth, 27 th April 2006)	45

Figure 23. Southern corners of milecastles showing the approximate location of the arc centres (scale 1:250)	50
Figure 24. Milecastle 49, Harrow Scar: the south-western angle looking south south east.....	51
Figure 25. Milecastle 42, Cawfields: the south-eastern angle, interior and exterior	52
Figure 26. Turret 48a, Willowford East looking north west	54
Figure 27. Turret 45a, Walltown: the curtain abutting the north-west corner of the turret	55
Figure 28. Stone curtain Turret 26b, Brunton, looking north.....	56
Figure 29. Turf curtain Turret 52a, Banks East, abutted by the later stone curtain, looking south east.	57
Did Hadrian's Wall have a wall walk?	65
Figure 1. Late Roman defensive wall at St Bertrand-de-Comminges, wall top viewed from the south-east. The projecting traverses buttress the merlons; three of the embrasures survive almost to their original height (after Wood 2002, fig. 2, and Esmonde Cleary and Wood 2006, fig. 98)	68
Figure 2. Comparison of stone walls on the British, German and African frontiers, and on the internal line of control in modern Slovenia. A. Hadrian's Wall, Broad gauge, with obstacles and bank on lip of Wall-ditch; height of Wall conjectural (NB arguments that Broad Wall was nowhere completed to its full height are rejected). B. <i>Clausura</i> at Bir Oum Ali, Tripolitania, preserved to point below triangular top (after Mattingly 1994, fig. 5:16); cf. Figs. 4 and 5 C. The Raetian Wall; its height and the scarcements at the rear are conjectural. D. The <i>Limesmauer</i> built between Öhringen and Jagsthausen; the capping-stones (profile as examples shown in Fig. 11), which are narrower than the base of the wall, suggest there was at least one scacement at the back of the Wall; height conjectural but estimated from Fig. 3. E. One of the <i>clausurae Alpium Iuliarum</i> ; this reconstruction is highly conjectural and is based entirely on the sources cited in note 26. Note that a ditch in front of the wall only occurs on Hadrian's Wall	69
Figure 3. The re-assembled remains of the <i>Limesmauer</i> on the Odenwald limes (after Schallmayer 1984, Abb. 95)	70
Figure 4. <i>Clausura</i> at Bir Oum Ali, Tripolitania (southern Tunisia), showing wall with triangular-section top surviving to right (cf. Fig. 5). Previously unpublished photo by Derek Welsby, taken in the 1990s and reproduced by his kind permission	70
Figure 5. <i>Clausura</i> at Bir Oum Ali, Tripolitania (southern Tunisia), showing a section through the wall. The two narrow fragments of walling supported the triangular top which can be seen in the distance, running up the rocky slope (cf. Fig. 4). Previously unpublished photo by Derek Welsby, taken in the mid-1990s and reproduced with his kind permission	71
Figure 6. The relationship of a turret to the Turf Wall and to its replacement by the Intermediate Wall (after Bellhouse 1969, fig. 7)	71
Figure 7. Chamfered stones excavated at Peel Crag in 1909; they formed a string-course with chamfers placed downwards (after Simpson 1976, fig. 26)	72
Figure 8. Merlon caps and string-course slab (shown in section) from the West Gate at South Shields (after Bidwell <i>et al.</i> 1988, fig. 7.8). Scale 1:10	73
Figure 9. Conjectural reconstruction of part of the south side of the Hadrianic Wall-bridge at Chesters, showing its position in relation to the east and west walls of the tower associated with the later road-bridge. The blocks of the 'causeway' are part of a repair following the collapse or demolition of the eastern end arch of the bridge (after Bidwell and Holbrook 1989, fig. 11). The	

remains of the pier and of the ‘causeway’ were incorporated in the east abutment of the later bridge. Scale 1:125.....	74
Figure 10. Conjectural plan of the original Hadrianic Wall-bridge at Willowford (after Bidwell and Holbrook 1989, fig. 55). Scale 1:400.....	75
Figure 11. Conjectural reconstruction of the original Hadrianic Wall-bridge at Willowford, view from south of the Wall (painting by Frank Gardiner, after Bidwell and Holbrook 1989, pl. 7).....	75
Figure 12. Merlon caps from forts at Wiesbaden, Heddernheim, Stockstadt and Lützel-Wiebelsbach, Scale approximately 1:20 (after Bidwell <i>et al.</i> 1988, fig. 7.17,1).....	76
Figure 13. Throwing-stones from the Roman fort at Wallsend, as displayed in the Segedunum Museum	78
Figure 14. Idealised view of the relationship of the Broad Wall to the Wall-Ditch (after Brewis 1927, pl. XXI). In reality the profile of the Wall-Ditch is variable (Welfare 2004), although usually approximating to a V-shaped profile, and there is no evidence for a cleaning-slot (‘Gully’) along the bottom (Wilmott 2006).....	80
The stones from a chamfered string course on Hadrian’s Wall and their implications for the appearance of the Wall-top	85
Figure 1. Reconstructed cross-section of Hadrianic Narrow Wall, showing position of chamfered string course (red) below the parapet and the obstacles described in Appendix 2	86
Figure 2. York legionary fortress wall, showing chamfered string course at wall-walk level. Note marking out line, at this point surmounted by an upper story of the angle tower rather than a parapet (photo: D. A. Welsby)	87
Figure 3. <i>Castra Praetoria</i> , Rome. Projecting course three tiles deep at original wall-walk level, with parapet and merlons visible above within the fabric of the wall face that has been extended upwards (photo: author).....	88
Figure 4. <i>Castra Praetoria</i> , Rome. Projecting course three tiles deep at wall-walk level, with parapet and merlons visible above within the fabric of the wall face that has been extended upwards (photo: author)	88
Figure 5. Gheriat el-Garbia, interval tower 4, SE wall: string course below parapet at top of tower (photo: D. A. Welsby)	89
Figure 6. Gheriat el-Garbia, N angle: string course at wall-parapet level (photo: D. A. Welsby)	89
Figure 7. Chamfered sting course stones found by Simpson at Peel Crag in 1909 (Simpson 1976, fig. 26)	90
Figure 8. Chamfered string course stones from the 1980s excavations in Wall miles 38 and 39, now stacked by the Military Way south of Sycamore Gap (photo: author)	91
Figure 9. Chamfered string course stone from the original Hadrianic build of the Narrow Wall at Wallsend, found in 2015 (scale bars 300mm) (photo: author)	91
Figure 10. Peter Hill’s (1997, fig. 1) proposed reconstruction of a stone wall turret, with thickness of 6-foot wide Extra-narrow Wall superimposed in red to show possible position of door from turret onto wall-top and available wall-top behind the parapet. Note the chamfered string course shown below the parapet. Reproduced courtesy of the Society of Antiquaries of Newcastle upon Tyne	93
Figure 11. The reconstruction of the Hadrianic Narrow Wall at Wallsend (photo: author)	94

Figure 12. The wall-walk of Caunos, of identical width to the Hadrianic Narrow Wall in Britain (photo: D. A. Welsby)	94
Figure 13. Plan of the wall-walk at Caunos (from Maiuri 1921)	95
Figure 14. The fort wall at South Shields reconstructed in 1986, illustrating chamfered string course corresponding to a sloping wall-walk, with stepped crenellation above (photo: author)	97
Figure 15. Plan of excavated emplacements for obstacles on the berm of the Narrow Wall at Shields Road, Byker (Wall mile 2). Foundation of Wall to bottom of image, Wall-ditch at top. The obstacles occupy the berm in between.....	102
Milecastle gate towers: present or absent?	105
Figure 1. Milecastle gate types (after Gibson <i>et al.</i> 1911, 406; Gillam 1953, 167)	106
Figure 2. Milecastle 42, Cawfields: the north-eastern pier at the north gate showing offsets, looking east (scale bar 200mm).....	107
Figure 3. Milecastle 42, Cawfields: the north-eastern projection at the south gate showing offsets, looking south west	107
Figure 4. Milecastle 42, Cawfields: slight projections of the south gateway on the interior and exterior of the adjacent wall	109
Figure 5. Milecastle 48, Poltross Burn: small blockwork lining the passageway in the north gate	110
Figure 6. Fort gate towers: thickness (pm) of the walls	115
Figure 7. Great Chesters: the south-east pier in the <i>porta decumana</i> with chamfered block and the offset in the adjacent tower's rear wall	114
Figure 8. Fort gateways: thickness (pm) of the arches.....	117
Figure 9. Birdoswald: the <i>porta decumana</i> as excavated in 1850 looking north west (Potter 1855b, opp. p. 70). Inset - the rear <i>spina</i> in 2025 looking south east (scale bar 200mm).....	117
Figure 10. Birdoswald: <i>porta principalis dextra</i> , front pier on the north side of the north portal, looking north	118
Figure 11. Great Chesters: the rear <i>spina</i> in the <i>porta decumana</i> with setting-out lines marking an offset on the upper surface of the first course of the superstructure, looking north west (scale bar 200mm)	119
Figure 12. Birdoswald: <i>porta quintana sinistra</i> , rear face, looking north west	120
Figure 13. Chesters: <i>porta quintana dextra</i> , front face, looking north north west.....	121
Figure 14. Chesters: <i>porta quintana dextra</i> , large stone blocks at the inner end of the passageway's south wall, looking north east	121
Figure 15. Plans of milecastle gateways, turrets and fort interval and angle towers at the level of the first-floor 'platform' (scale 1:200).....	123
Figure 16. Chesters: interval tower on the south wall east of the gate, looking north west.....	124
Figure 17. Chesters: south-east angle tower, looking north west	124
Figure 18. Milecastle and fort portal widths (pm).....	126
Figure 19. The northern face of the curtain between Turret 38b and Milecastle 39	127
Figure 20. The northern face of the curtain between Turrets 41a and 41b	127
Figure 21. The southern face of the curtain between Turrets 45a and 45b	128

Figure 22. The northern face of the curtain between Turrets 45a and 45b	128
Figure 23. Milecastle 37: the south face of its north wall	129
Figure 24. Milecastle 39, Castle Nick set within a narrow pass through the Whin Sill, looking north east	131
Figure 25. Milecastle 42, Cawfields set on the steeply sloping ground, looking north east.....	132
Figure 26. The location of Milecastle 42 immediately to the west of Cawfield Crags, looking east south east	132
Figure 27. Housesteads: <i>porta decumana</i> – a. projecting north-west pier in the north portal; b. north-east ‘pier’ in the north portal flush with the passage wall. (scale bars 200mm)	133
Figure 28. Milecastle gateways, thicknesses (pm) of piers.....	134
Figure 29. Plans of fort gateways at the level of the first-floor ‘platform’ over the portals. The largest (Milecastle 48) and smallest (Milecastle 39) ‘platforms’ over milecastle gateways are included for comparison (scale 1:200). For Rudchester see Table 3, note b	134
Figure 30. A selection from amongst the many reconstruction drawings of milecastles. a. Milecastle 35 (© Historic England Archive). b. A generic stone milecastle (Breeze 1982, fig. 14; reproduced courtesy of Michael J. Moore and David J. Breeze). c. Milecastle 42 (© Historic England Archive). d. Milecastle 49 (© Crown Copyright. Historic England Archive)	139
Figure 31. Milecastle 20, Halton Shields: plan of the north gate (after Simpson <i>et al.</i> 1936, fig. 1) (scale 1:100).....	142
Figure 32. Milecastle 33, Shield-on-the-Wall: the inner face of the north gate, looking west	143
Figure 33. Milecastle 42: the footings of the north-east pier in the north gate with the pivot socket (scale bar 200mm)	143
Figure 34. Birdoswald: the footings of the south-east pier in the east portal of the <i>porta decumana</i> with the pivot socket	143
Figure 35. Milecastle 33, Shield-on-the-Wall: block probably from the superstructure of the north-west pier of the north gate, looking west (scale bar 200mm).....	144
Figure 36. Milecastle 37, Housesteads: north gate, rear face, looking north. Type I gateway with large blockwork lining the passageway up to impost level, largely obscured by the walls constructed to reduce the width of the gate	145
Figure 37. Milecastle 39, Castle Nick: north gate, front face, looking south east. Type IIa gateway with small blockwork lining the passageway. The inner end of the passageway was modified in the post-Hadrianic period	146
Figure 38. Milecastle 39, Castle Nick: north gate, north-east pier after excavation and consolidation (scale bar 200mm)	146
Figure 39. Milecastle 39, Castle Nick: south gate, south-west pier and pivot block	146
Figure 40. Milecastle 40, Winshields: north gate (after Simpson 1976, pl. IV) (scale 1:100)	147
Figure 41. Milecastle 42, Cawfields: the north-western pier in the north gate; setting-out lines on the upper surface of the first course superstructure (scale bar 200mm)	147
Figure 42. Milecastle 42, Cawfields: south gate, front face, looking north east. Type I gateway with massive blocks lining the passageway	148
Figure 43. Milecastle 47, Chapel House: the excavators’ plans of the gateways (after Simpson <i>et al.</i> 1936, fig. 7) (scale 1:100).....	149

Figure 44. Milecastle 48, Poltross Burn: The south-west pier of the north gate (scale bar 200mm)	149
Figure 45. Milecastle 42, Cawfields: The south-east pier of the south gate with parts of each block dressed flush with the passageway wall (scale bar 200mm)	150
Figure 46. Milecastle 50TW, the north and south gates (after Simpson <i>et al.</i> 1935, fig. 2) (scale 1:200)	151
Figure 47. Location of the measurements recorded in Tables 6-8.....	154

List of Tables

Laying out the ground plans of turrets and milecastles on Hadrian's Wall

Table 1. Turrets approximately square at the level of the footings or at the level of the superstructure.....	7
Table 2. Turrets where the north-south and east-west dimensions differ or there is insufficient data available to allow a comparison	8
Table 3. Turrets on the stone curtain with side and/or south walls less than 4pm thick before any offsets. Dimensions in red are of walls which may have had an offset at a higher level.....	12
Table 4. Turrets on the stone curtain with side and/or south walls over 4pm thick before any offsets. Dimensions in red are of walls which may have had an offset at a higher level.....	16
Table 5. Wall thicknesses of turrets along the turf curtain. Dimensions in red are of walls which probably had a chamfered offset at a higher level	19
Table 6. Dimensions of Group I milecastles. The upper line in each entry is the theoretical dimension used in the layout, the lower line is the actual dimensions	40
Table 7. Dimensions of Group II milecastles. The upper line in each entry is the theoretical dimension used in the layout, the lower line is the dimensions as recorded by the excavators converted into Roman feet. Values in [] are over the footings.....	42
Table 8. Dimensions of Group IV milecastles. The upper line in each entry is the theoretical dimension used in the layout, the lower line is the dimensions as recorded by the excavators converted into Roman feet.....	44
Table 9. Dimensions of Group V milecastles. The upper line in each entry is the theoretical dimension used in the layout, the lower line is the dimensions as recorded by the excavators converted into Roman feet.....	46
Table 10. Milecastles grouped by their proportions. Note: Broad-wall milecastles approximately fit both outside the grid and within a 2 <i>perticae</i> larger grid. Where milecastles may have been laid out in one of two or three ways, they are in red font	47
Table 11. Approximate internal areas of milecastles (data tabulated in Haigh and Savage 1984, 50).....	49
Table 12. Milecastle corner types with approximate radii of the arcs at footing level. All dimensions in <i>pes monetalis</i> unless otherwise indicated	52

Milecastle gate towers: present or absent?

Table 1. Milecastle gateways of Types I to III, 'platform' dimensions. A sample of turrets and fort towers are included for comparison	107
Table 2. Fort gate-tower wall thicknesses (pm) above offsets	113
Table 3. Dimensions (pm) of main gate passages in the forts.....	116
Table 4. Dimensions (pm) of <i>portae quintana</i> in the forts for which data is available	119
Table 5. Milecastle gateway dimensions (pm). Measurements in square brackets are over the offsets.....	152
Table 6. Widths of the piers (pm) recorded on site	155
Table 7. Milecastle 37: Housesteads: thickness of the voussoirs. All dimensions in <i>pes monetalis</i>	157
Table 8. Widths of the piers recorded in the main gates at Chesters. All dimensions in <i>pes drusianus</i>	157

Introduction

Derek A. Welsby and Nick Hodgson

The four papers contained in this slim volume look in detail at a number of aspects of the layout, design and superstructural appearance of the milecastles, turrets and curtain of Hadrian's Wall between the Tyne and Solway in Britain.

The first paper is probably the least contentious as it is based entirely on the observed and recorded evidence revealed through excavation since the 19th century at milecastles and turrets. The raw data, however, is not free of problems. The quality of recording has varied and occasionally leaves much to be desired. Also it is often unclear exactly what was being measured or what was being planned by excavators: the foundations, footings or superstructure below or above offsets. Where preservation is poor the final thickness of the walls carried up to first-floor level cannot be ascertained. All these factors impact on a discussion of the metrology – the systems of measurement and proportion discerned in this study as underlying the building plans. A further problem was caused by the Romans themselves with their sometimes shoddy building practices which have resulted in variations in plan dimensions and in wall thicknesses which may not reflect the original specifications.

The other three papers, whilst grounded in the observed structural evidence, inevitably involve a greater amount of conjecture. The absence of superstructures collapsed in their entirety, comparable to the fort walls at Wörth, means that certainty in the form of the superstructure once supported on the surviving elevation of the Wall-curtain and over the milecastle gates is unobtainable.

The nature of the upper parts of the curtain has been discussed many times before, often at great length and over many decades, most recently in *Archaeologia Aeliana* for 2024. In light of the relatively poor preservation of the curtain of Hadrian's Wall, parallels from elsewhere in the Empire must be utilised to provide plausible designs for the wall top – i.e. solutions grounded within the Romans' lived experience. The second and third papers take this approach when considering the nature of the curtain's upper parts. Modern concepts of, for example, how wide a parapet walk needs to be to be functional, and the need for a rear parapet, must be discarded when faced with examples constructed and surviving within the frontiers of the Roman Empire at the time that Hadrian's frontier was conceived. Particular importance is attached to the chamfered slabs from a string course found in profusion along the curtain, which on analogy with military defences elsewhere can be shown to have a specific relevance to this discussion.

The final paper looks at the evidence for towers over milecastle gateways. These have usually been assumed to exist over one or both gates but this assumption has never been critically assessed in the light of the structural evidence and a consideration of the standard practices exhibited by the Roman military when constructing elements of their fortifications.

The paper by the late Paul Bidwell on the question of whether there was a wall-walk was originally published by the Arbeia Society in 2008 in a collection of papers, *Understanding Hadrian's Wall*, arising from a conference held two years earlier. This volume never had a wide circulation and is unavailable online and difficult to obtain, even in libraries, hence the decision to re-publish what was a contribution of fundamental importance to the debate on the appearance of Hadrian's Wall. It is hoped that its republication here, alongside the paper on the chamfered string course by Nick Hodgson, will serve to

provide a sounder, evidence-based, assessment of the nature of the curtain superstructure than that made in some recent discussions. The nature of the top of the curtain and of the superstructure over milecastle gateways are not simply structural details of merely academic interest. Both have a profound impact on how we interpret the function of the linear barrier both in its initial conception but also into the second half of the 2nd century AD when the curtain and the milecastles towards the western end of the Wall were rebuilt in stone to basically the same specification as the original early Hadrianic construction.

In Bidwell's article the method of citation for bibliographic references has been left as in the original. Apart from the need for reformatting to fit the dimensions of the current publication the article has been left exactly as Paul wrote it apart from the replacement of Figures 1, 4 and 5 with versions in colour. Derek Welsby has provided the colour versions of Figures 4 & 5 and we are grateful to Simon Esmonde Cleary for kindly providing a colour version of Figure 1. Some commentary on a few points that require correction or modification in the light of research since 2008 can be found in Hodgson's paper. The editors are grateful to the Arbeia Society for permission to re-publish the paper.

Finally, it should be noted that while the editors broadly agree on most of the issues surrounding the design and appearance of the Wall, their contributions represent their individual interpretations of the evidence and their appearance together in this volume does not necessarily denote agreement with every single point in the other's work.

The editors are grateful to Dr Patricia Spencer for copy editing the volume. Any remaining errors are the responsibility of the individual authors.