The Spiral Stair or Vice: its origins, role and meaning in medieval stone castles.

Thesis submitted in accordance with the requirements of
the University of Liverpool for the degree of
Doctor of Philosophy by Charles Ryder
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ACKNOWLEDGEMENTS

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ABSTRACT

The Spiral Stair or Vice: its origins, role and meaning in medieval stone castles.

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This thesis addresses a neglected area of castles studies – the spiral stair. It studies the origins, evolution, placing, structure, role, significance and meaning of spiral stairs in medieval stone castles between 1066 and 1500, so covering the rise, zenith and decline of the castle in England and Wales. Although focussed upon England and Wales, it has a wider geographical spread across Ireland, Scotland, Europe, the Middle East and Japan with particular regard to castles and on even wider when searching for the origins of the spiral stair, encompassing the whole globe. The date range was also extended, both much earlier than 1066 when searching for these origins and very selectively beyond 1500 when exploring how the spiral was used in the later medieval and early modern periods.

It is proposed that the first known spiral stair was employed in Trajan's Column in the first century AD, that it was then used more selectively in secular and later ecclesiastical buildings during the first millennium AD and that, from the eleventh century onwards, the spiral stair became a common feature of the medieval castle.

From the emergence of the spiral stair in Rome, this thesis places its principal use in European elite and ecclesiastical structures. Focusing on the castle, this thesis argues that it was employed as a vertical boundary marker to signal and control movement between two different types of spaces, from a more public to a more private space and from a general or less restricted space to a space which was more restricted, often elite domestic quarters. This use of the spiral is seen in and is

traced through different types of English and Welsh castles, from stronghold to enclosure and on to the so-called sham or cult castles of the late medieval period. The thesis also looks at the spiral in a range of medieval castles and other defensive buildings outside England and Wales and finds that, in the main, spirals were employed in the same way. It also explores the presence and role of the spiral within other medieval buildings, both in England and Wales and further afield, and argues that, although there are some exceptions and variations, in the main spiral stairs played the same role in those buildings.

This thesis interprets the spiral stair within the medieval castle as a key component of the landscape of lordship and argues that the interpretation of this elite landscape, hitherto focused on the environs and outward appearance of the castle, should not stop at the castle gate but should move inside. Accordingly, this thesis takes a step to bring the interior of the castle deeper into research and discussion; to explore individual items and features within the castle; and to consider their placing, access and meaning within the medieval world.

CHAPTER 1 – INTRODUCTION

This thesis is a study of the origins, evolution, placing, structure, role, significance and meaning of the spiral stair in medieval stone castles. Primarily the study is focussed on England and Wales, although it spreads more widely into Scotland, Ireland, Europe and beyond in the search for the origins, meaning and use of the spiral stair. The chronological coverage of the thesis is from 1066 to 1500 and essentially relates to the rise and decline of the castle in Britain, although, again, it has been essential to extend the chronological coverage to pre-1066 for the origins and meaning of the spiral stair and very selectively post-1500 to explore how the spiral stair was used.

The significance of this thesis is that it begins to address a neglected area of castle studies – the spiral stair. Based upon research using fieldwork, primary and secondary sources, this thesis addresses the origins of the spiral stair through a global search of medieval and pre-medieval societies and their architecture; it addresses the spiral stair's military and domestic roles within the castle; drawing a little from art and literature, it considers the meaning of spiral stairs in medieval society; and, through extensive fieldwork, it explores the structure and physical arrangement of medieval spiral stairs. As early as 1990, Jean Mesqui bemoaned the fact that studies of stairs in medieval architecture had not attracted the interest of architectural historians[1] and this thesis seeks to fill that lacuna.

This is a history thesis and it follows the styles, conventions and approaches of that subject in contributing to the field of castle studies. However, in order to make that contribution this thesis will of necessity draw upon a number of allied subjects and a range of source material, going well beyond the type of evidence often found within a history thesis. For example, this study embraces aspects of architecture and architectural history and it certainly draws upon the published work of many scholars who are solely or primarily archaeologists. Such a multi-disciplinary

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[1] J. Mesqui, 'Une Double Révolution à la Rochelle la Tour Saint-Nicolas', <u>Bulletin Monumental</u>, Vol. 148 (1990), p. 185. 'Malheureusement, la typologie des escaliers dans l'architecture médiéval, qu'elle soit religieuse, civil ou militaire, n'a jusqu'à présent guère éveillé l'intérêt des historiens de l'architecture.'

approach enriches castle studies and is essential in pursuing an area such as the spiral stair, where surviving evidence is often limited and is very diverse. However, this thesis is essentially a historical contribution to castle studies and thus is not concerned with the finer points of the theories or philosophies of archaeology and architecture.

This thesis references castles and, despite many other works discussing various aspects of castles today, it remains perhaps more unclear what constitutes a castle than previously. This thesis argues that a castle may be defined by particular features and while the presence of a spiral stair is certainly not an essential element in designating a castle, this study emphasises the presence of the spiral stair as a main internal feature that denotes the domestic space of lordship and thus the absence of a spiral stair would lead to the conclusion that the structure under analysis was not a castle in the true sense of it being a strongly fortified dwelling of a lord. To this end, it is important to review the castle and how it has been perceived and this serves as a basis to develop the theme of this thesis.

This introductory chapter describes and outlines the theories to be analysed in the main chapters and places this new and important research in the context of castle studies. This chapter continues by describing the problems involved in research into castle studies and in particular that of research into spiral stairs and includes a literature review of past and current views on approaches to and descriptions of castles, as well as of the limited published work on spirals. Beyond that, this chapter advances by describing the research methods used to capture the data upon which this thesis is based.

Chapter 2 will describe the search for the origins of the spiral stair. This wide and thoroughly researched chapter covers many civilisations from all continents prior to and during the medieval period and even some of the post-medieval period to make a point of reference. The search also moved into the later medieval and early post-medieval period to clarify and support a number of the ideas promoted by this thesis. The importance of this research into the origins of the spiral stair is that the geographical and cultural path taken by the idea of the spiral stair could illustrate links between societies and lands as yet unproven. The chapter concludes with the

probable location of the first known spiral stair and of the first known use of a spiral stair in a medieval castle.

As part of the process of understanding how space was used and accessed in castles, a number of methods for spatial interpretation were considered. These creations by Faulkner,[2] Mathieu,[3] Dixon[4] and Richardson[5] are useful but each has its own place in the interpretation of space. None of them was found to be exactly right for this research and a new approach was adopted. Thus Chapter 3 will advance a new method of spatial documentation and interpretation by the author which is supported by graphical examples.

Chapter 4 will describe a selection from the extensive fieldwork undertaken for this thesis and is structured by grouping castles into Great Towers, Welsh castles, Edward's castles in Wales, enclosure castles and castles without spiral stairs. Comments are made for each castle in the group with regard to location, brief history, historical role, current state of repair, description of the castle buildings with specific emphasis on those in which spiral stairs are located, a description of the stairs and a description of the spaces which the stairs linked. This analysis is strongly supported by photographs and diagrams.

Chapter 5 will draw upon previous chapters' evidence springing from the case studies of selected English and Welsh castles presented in chapters 3 and 4, in order to test the theory and interpretation of spiral stairs advanced in those earlier chapters. It will do this by placing that theory and interpretation in a much wider context, exploring a wide range of English, Welsh, European and Middle Eastern castles, as well as by exploring the presence, position and role of spiral stairs in a range of other medieval buildings and structures, in this case embracing England and Wales, Scotland and Ireland, continental Europe and the Middle East. It will

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[2] P. A. Faulkner, 'Castle planning in the fourteenth century', Archaeological Journal, Vol. 120 (1963), pp. 215-235.
[3] J. R. Mathieu, 'New methods on old castles: generating new ways of seeing', Medieval Archaeology, Vol. 43 (1999), pp. 115-142.
[4] P. Dixon, 'The Influence of the White Tower on the Great Towers of the Twelfth Century', in E. Impey (ed.), The White Tower, (London, 2008).
[5] A. Richardson, 'Gender and Space in English Royal Palaces c. 1160-c. 1547: A Study in Access Analysis and Imagery', Medieval Archaeology, Vol. 47 (2003), pp. 131-165.

also gather together the fieldwork evidence concerning the physical structure, dimensions and orientation of medieval spiral stairs. The chapter as a whole will develop the idea that the role and the symbolic meaning of the spiral stair are linked and it will explore and explain that link.

Chapter 6, the concluding chapter, will draw together the important points from the previous chapters and will suggest conclusions about the origins, structural development, uses and meanings of spiral stairs in medieval stone castles between 1066 and 1500. This chapter concludes with a plea for the widening of the understanding of castles by placing them within the context of the architecture of the period and the culture that produced and employed them and for extending the study of the landscape of castles inside as well as outside the castle gate.

A number of approaches from different academic viewpoints have been taken in studying the castle: from the architectural historian, the spatial analyst, the landscape historian, the military historian, the political/administrative historian, the social historian and more recently from a more blended view of some of the above from the 'castellologue'. Each specific category of historian has concentrated on their own specialism. According to Philippe Durand, co-founder of the castellology team at Centre d'Etudes Supérieure de Civilisation Médiévale, the castellologue is the one who brings together many of the above areas with reference to the castle to study that form in its own right.[6] This thesis takes the part of the castellologue in that it brings together many different points of view, as suggested by Durand, and expands on them.

Various terms are used in this thesis to describe castles and their features and this paragraph is designed to act as a guide to specific usage in this thesis. For example, Pevsner uses the terms 'newel stair' and 'winder stair' and in his glossary provides a brief description: 'Newel stair: ascending around a central supporting newel (q. v.); called a spiral stair or vice when in a circular shaft, a winder when in a rectangular compartment.'[7] In this thesis, the terms 'spiral stair', 'newel stair',

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[6] http://www.mshs.univ-poitiers.fr/cescm/spip.php?rubrique12, (accessed December 2010).
[7] N. Pevsner and W. Wilson, The Buildings of England: Norfolk I: Norwich and North East, (London, 2002), pp. 761-762. It is worth noting that Pevsner includes many but not all spiral stairs

'turret stairway', 'vice', 'winder stair' and 'pikestaff stair' are taken to be interchangeable and, thus, for consistency the more commonly used term 'spiral stair' or 'spiral' will be employed throughout, except in direct quotations. Specifically, the spiral stairs referred to are sited in stone or brick castles and the spiral stairs are made from stone and brick. Where there is any deviation from this, the construction material will be detailed. For the purposes of this thesis, 'right-handed' may be used to describe a spiral stair that as one ascends one turns to the right or clockwise; 'left-handed' is the converse. The term 'keep', although it did not appear in records until 1586[8] – well beyond the end of the main period covered in this thesis – will generally be used instead of 'donjon', 'great tower' or 'arx' to refer to the main tower structure of castles – where there is one. Capitalised names reference the location name of a castle's component feature used in the castle's guidebook and plans[9] such as the keep at Raglan, Monmouthshire, labelled the 'Great Tower'. The term 'Welsh', when used to describe a castle, specifically refers to castles built by and for native Welsh Princes and lords and does not refer to all of the castles geographically in the modern or historical Principality of Wales, many of which were built by non-Welsh invaders and settlers. The term 'ruinous', although used as an alternative for 'uninhabited' during the Tudor period,[10] is here used as meaning in a very poor state of repair.

Undertaking research into castles is beset with problems and researchers soon discover that very few original plans of castles (or indeed major medieval buildings generally) survive. The preference of the medieval architect or Master Builder was for architectural plans to be drawn on damp plaster on a board – as described by Gimpel[11] – and then wiped over with wet plaster for the next drawing.[12] Gimpel describes surviving thirteenth-century sketchbooks of Villard de Honnecourt and parchment plans of the Rheims Palimpsest and of Strasbourg

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in his descriptions of buildings: at Kenilworth Castle he notes a 'polygonal stair turret' but not the stair inside, whilst at Norwich Castle he notes a 'turning stair'. N. Pevsner and A. Wedgewood, Buildings of England: Warwickshire, (London, 1966), p. 321; Pevsner and Wilson, Buildings of England: Norfolk I, p. 259.

[8] M. W. Thompson, 'A suggested dual origin for keeps', Fortress, Vol. 15 (1992), p. 3.

[9] Some of which are to be found in the appendices.

[10] M. W. Thompson, 'The abandonment of the castle in Wales and the Marches', in J. R. Kenyon and R. Avent (eds), Castles in Wales and the Marches: Essays in honour of D. S. Cathcart King, (Cardiff, 1987), p. 206.

[11] J. Gimpel, (trans. T. Waugh), The Cathedral Builders, (London, 1988), p. 117.

[12] There is a tracing floor at York Minster with wooden templates.

Cathedral, both dated shortly after 1200.[13] Early building plans or preparatory drawings also exist for a church at St. Gall, Switzerland.[14] However, these are noted as surviving rarities rather than a few examples of a major set of materials. Medieval architects would also develop plaster models for important persons to view and wooden templates from which the masons would carve stone. However, these also very rarely survive. More recently-drawn plans of castles create difficulties to the researcher. The National Monuments Record Office's collection deserves great praise and, for some, the plans are, no doubt, useful for the purpose to which they are put. However, most castle plans are purely of the ground floor of the sites, as all too often are those found in the English Heritage and Cadw guidebooks (more recent editions of these guidebooks are dealing with this by including some plans of the upper levels of buildings). The dubious quality of the more recently-drawn plans and interpretations is a further problem. Taking the Cadw guidebook for Beaumaris Castle, Anglesey, as an example (an otherwise excellent publication), not all the spiral stairs are shown because the plan shows nine spiral stairs when in fact there are twelve.[15] Typically, guidebooks and academic volumes reuse the same plan apparently without reference to what really exists. Furthermore, in some plans the direction of the spiral is unclear and on occasion incorrect.

Recent work is correcting some of these errors and lacunae. For example, Hedingham Castle, Essex, had not been revisited or revised for some time and only recently has the standard interpretation been challenged by Dixon and Marshall,[16] who offer proof that the original keep was three storeys and not four and this in turn has new implications for interpretation of access. The new interpretation suggests that the original keep was of three and not four principal storeys and that it had no private accommodation. As well as challenging our views of the keep in general, this might also lead to a re-evaluation of access and stairways at Hedingham. However, even with increased revisiting and reinterpretation of

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[13] Gimpel, Cathedral Builders, p. 89.
[14] R. Stalley, Early Medieval Architecture, (Oxford, 1999), p. 116.
[15] D. M. Robinson (ed.), Beaumaris Castle, (Cardiff, 4th edn, 1999), p. 45.
[16] P. Dixon and P. Marshall, 'The Great Tower at Hedingham Castle: A Reassessment', Fortress, Vol. 18 (1993), pp. 16-23.

castles of this sort, the spiral stair remains ignored, especially in English and Welsh castles.

Because few castles remain in their original state, access to original plans would facilitate understanding the castle, for most have either fallen into ruin or have been damaged or slighted at some point in their history, though few English and Welsh castles were extensively damaged by conflict, or have been plundered for stone and brickwork. Work has also been undertaken over time to maintain castles in some form of safe repair, often using inappropriate materials, and parts of the building have been reconstructed in ways that do not reflect the original.

If the architectural sources are scanty and the physical remains often problematic, research into other contemporary medieval sources to assist in this study found limited accessible or relevant evidence. Although castles are mentioned in the *Anglo-Saxon Chronicle* as early as 1051-1052 and the entry for 1066 is often quoted – 'bishop Odo and earl William stayed behind and built castles far and wide throughout this country, and distressed the wretched folk'[17] – there is little detailed, contemporary documentation regarding the castles themselves, especially regarding spiral stairs. There is very little documentary evidence from the early years post-1066 with regard to English and Welsh castles, building theory and the construction of specific castles. The major survey work undertaken by William I and known as Domesday Book records some 47 castles and strong houses and hints at a few others, whilst other pre-1086 documents record 21 castles and strong houses not included in Domesday.[18] There were perhaps more castles that were not included or documented, perhaps because a castle was 'an item of expenditure rather than one of income'.[19] Higham disagrees with this, believing that the survey was related to fairer billeting of mercenaries.[20] Whatever the argument, Domesday Book is of little help in this research. It is only beyond the reign of William I that business documents become increasingly common and, in following centuries,

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[17] Anglo-Saxon Chronicle, Version D, (1066).
[18] C. Harfield, 'A handlist of castles recorded in Domesday Book', English Historical Review, Vol. 106 (1991), pp. 371-392.
[19] R. Shoesmith and A. Johnson (eds), Ludlow Castle its History and Buildings, (Logaston, 2000), p. 9.
[20] N. J. Higham, 'The Domesday Survey: context and purpose', History, Vol. 78 (1993), pp. 11-18.

detailed accounts of royal expenditure are found. Ridgway states that accounts start with Henry III and are especially good for crown castles during the reign of Edward I.[21] However, even these accounts may force the historian to make assumptions. For example, in the detailed accounts for Flint Castle, Flintshire, are found the costs for the building of a wooden stair by Master Henry of Rhyull but not its proposed location.[22] From such limited research sources, it has been a challenge to build a larger construct regarding spiral stairs.

Not only are the contemporary documentary sources of limited value but also reading the physical remains as a source is problematic. As Stalley says, 'Most castles were in fact an amalgam of separate buildings, erected at different times by different owners, forming an agglomeration of structures rather than a single monument'.[23] Moreover most castles were altered during their working lives to incorporate new architectural styles. Austin comments, 'Nor were things static through the Middle Ages: the castle of the Norman Conquest and the intentions of its builder are different from Edward I's masterpieces in North Wales and Sir John Fastolf's Caister...'.[24] With the updating and refurbishment of castles comes a problem in dating the spiral stairs and beyond this, the problems of the use or, in many instances, the multiple uses, of spaces joined by spiral stairs that may have changed over time and with changes in ownership. For example, the Keep at Peveril Castle, Derbyshire, (dated to the 1170s)[25] has, in its eastern corner, a spiral stair that links the basement to the roof. However, closer examination of the north-west wall of the Keep reveals two large windows set on the diagonal and, if a line is drawn through them, it appears to indicate the line that a straight intramural stair rising from the first floor would have taken. More research may reveal if, in fact, a straight intramural stair did exist and was subsequently replaced by a spiral and, if so, why this occurred.

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[21] M. H. Ridgway and D. J. C. King, 'Beeston Castle, Cheshire', Journal of the Chester and North Wales Architectural Archaeological and Historical Society, Vol. 45 (1958), p. 8.
[22] Ibid., p. 67.
[23] Stalley, Early Medieval Architecture, p. 83.
[24] D. Austin, 'The castle and the landscape: Annual lecture to the Society for Landscape Studies, May 1984', Landscape History, Vol. 6 (1984), p. 70.
[25] B. Morley, Peveril Castle, (London, 1999), p. 9.

The ensuing literature review outlines the main approaches taken to studying the castle and also assesses the hitherto very meagre coverage of stairs in general and spiral stairs in particular. Towards the end of this review the few authors who have made substantial reference to spiral stairs or who have specifically focussed on them will be discussed in more detail. The main work on spiral stairs comes from France and this creates a difficulty in that French castles develop during the medieval period from vertical movement between the public to the private areas to horizontal use of space for that movement. However, across the Channel, English, Welsh, Scottish and Irish castles continued to favour vertical demarcation of privacy. A noted exception to this 'English' style is Thornbury Castle, Gloucestershire, where Edward Stafford, third duke of Buckingham, was given a licence to crenellate in 1510 and work stopped in 1521 when he was executed for treason.

The literature on castles can be broadly categorised into four main but sometimes overlapping areas: military, domestic, landscape and status. The four categories generally follow a historical sequence beginning with the military view, which has dominated most of the history of castle studies and has generated far more publications than the other three areas combined.

Castle Studies: Military Perspectives

The earliest work of significance on castles is taken to be Clark's two-volume work that draws on his civil engineering background and regards castles and their development from a militaristic viewpoint that set the tone for some considerable time.[26] Clark believed castles to be created for military purposes and unequivocally asserts that 'The Norman castle was a purely military building'.[27] However, elsewhere he appears to contradict himself, writing that later castles 'were not posted for the defence of the March or a threatened district, but for the residence, more or less secure, of the lord, usually of a newly acquired estate…' and that 'In the royal castles, and others the "capita" of estates and seats of the

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[26] G. T. Clark, Medieval Military Architecture in England, (2 vols, London, 1884-85).
[27] Ibid., Vol. 1, p. 46.

greater barons, great attention was paid to domestic comfort and splendour'.[28]
Later he writes that keeps had 'limited and very inconvenient accommodation
….not meant for residence, save during a siege' and that 'The castles of Henry and
Edward combine the palace with the fortress, but the domestic are always
subordinate to the military arrangements'.[29] Perhaps, in part, this apparent
contradiction can be attributed to his attempt to present a single interpretation
encompassing all medieval castles in England.

Clark includes spiral stairs in his work and refers to them as 'well stairs' and
'turnpike stairs'[30] but it is not fully clear what difference, if any, he draws between
them. It would appear that, to Clark, a 'well stair' is a wide spiral stair such as the
'grand vice' in the White Tower in the Tower of London, that joins the basement
with all the floors up to the top floor and to the wall walk, whilst a 'turnpike stair'
is a much narrower stair such as the two in the White Tower, that join the floor
above the entrance floor to the floors above and to wall walk. Clark interprets the
presence of spiral stairs in castles as a defence function, claiming that 'The curves
and angles in those narrow staircases facilitated the defence of them' and that 'as a
rule, one stair, descending to the storeroom, seems to have been enough: but it was
thought an advantage to have two or three ascending from the hall or upper floor to
the ramparts, for readiness during a siege'.[31]

In summary, Clark interprets early castles and smaller castles as military in their
origin and later castles and the castles of those of highest status as a mixture of
military and palace but also claims that domestic need is always subordinate to the
military arrangements. From this stance, Clark interprets his observations on
stairs, portcullis, wall walk and other features of castles through their military
usefulness rather than as domestic, ceremonial or status features.

The military viewpoint continues through the works of Hamilton Thompson, who
describes how changes in military tactics relating to attack and defence of the
castle galvanised the castle builders into developing the castle form in response to

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[28] Ibid., Vol. 1, pp. 4, 155.
[29] Ibid., Vol. 1, pp. 136, 170.
[30] Ibid., Vol. 1, pp. 127, 140.
[31] Ibid., Vol. 1, p. 127.

those attacks, almost akin to a process of Darwinian evolution.[32] This emphasis is reflected in the use of the term 'military' in both Clark's and Thompson's titles. The military emphasis is carried through the early and mid twentieth century by Oman,[33] Braun[34] and Toy,[35] none of whom add anything further with regard to the spiral stair, although Oman's work deserves consideration in regard to his attempt to define and explain the origins of castles. In the same year as Thompson's principal study appeared, Armitage, drawing on the newly available Ordnance Survey maps, published a work that argues that castles were introduced into England by the Normans at the time of the 'Conquest' and that gave weight to the view that castles were for military purposes in subjugating a conquered nation.[36]

Oman, who was greatly respected for his views on medieval warfare and influenced thinking in this area for a considerable time, defines a castle as a 'fortified dwelling intended for purposes of residence and defence', though he concedes that other definitions exist, such as 'the private stronghold of a single owner' and 'product of the feudal system, and the home of the feudal lord'.[37] A similar description for a castle exists in France: 'un édifice fortifié habité par un seigneur'.[38] However, Oman notes that the Swiss and Venetians also employed castles but that these were state owned and thus these definitions did not apply. He asserts that although there was lack of clarity and consistency in the use of the word 'castellum' earlier, by the tenth century it was being used as the word for a 'feudal lord's stronghold'.[39] Oman then states that the purpose of the castle in England was to dominate the baron's 'fief' because, unlike the continent, where private wars between barons were common, in England the greatest threat came from 'the danger of civil strife'; thus castles were intended to 'hold down a discontented nation' immediately after the invasion of 1066 and castles were constructed and presumably designed to avoid assassination and were positioned to

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[32] A. Hamilton Thompson, Military Architecture in England During the Middle Ages, (Oxford, 1912).
[33] C. Oman, Castles, (London, 1926).
[34] H. Braun, The English Castle, (London, 1936).
[35] S. Toy, The Castles of Great Britain, (London, 1953); S. Toy, A History of Fortifications from 3000 B. C. to A. D. 1700, (London, 1955).
[36] E. Armitage, The Early Norman Castles of the British Isles, (London, 1912).
[37] Oman, Castles, p. 3.
[38] L. Salch, L'atlas des châteaux forts en France, (Strasbourg, 1977), p. 9.
[39] Oman, Castles, p. 5.

overawe large towns or placed at strategic points.[40] Verbruggen adds evidence to support Oman's view on the difference between England and the continent, when he writes that in eleventh-century Burgundy, family clashes went on for some 30 years with a loss on average of eleven men per clash.[41]

Oman continues by describing methods of attacking castles and claims that castle design changed to resist those methods of attack. The problem he then addresses is that of the demise of castle building and castle usage in the later medieval period, despite the times being 'no less turbulent'.[42] Oman attributes this to the fact that owners 'abandoned them as places of habitual dwelling' perhaps because the 'system of passive defence behind stone walls may not protract a war but does not decide it' and that in 1453 the walls of Constantinople fell to Mahomet II's artillery, thus making those who had sought refuge in a keep or castle vulnerable.[43]

Overall, Oman's work is limited in that it appears to have been primarily a guidebook, with descriptions of the castles he and his son visited and focussing on ownership, with only around 30 or so pages on Oman's castles' theory. Interesting as these are and potentially relevant to spiral stairs, the nature and length of the work does not permit him to expand his views and provide proof for them but does permit him to make statements of his views that are representative of his time.

Militarism as the driving force in castle construction is developed by Brown[44] and King, who held the view that 'a castle is the fortified residence of a lord' and thus gives weight to the view that castles are feudal and appear in England post-1066.[45] One hundred years after Clark, King was upholding the military view throughout his 1988 study.[46] King claims that a castle must be able to withstand a serious attack – whatever that is – though he appears to vacillate in his military interpretation, at one point arguing that 'possessing a castle was to advertise one's

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[40] Ibid., pp. 10-12.

[41] J. F. Verbruggen, The Art of Warfare in Western Europe during the Middle Ages, (Woodbridge, 1954), p. 29.

[42] Oman, Castles, p. 21.

[43] Ibid., p. 23.

[44] R. A. Brown, H. Colvin and A. Taylor, The History of the Kings Works, (6 Vols, London, 1963-82). The medieval period and castles are discussed in Vols 1 and 2.

[45] D. J. C. King, Castellarium Anglicanum, (London, 1984).

[46] D. J. C. King, The Castle in England and Wales: an Interpretative History, (London, 1988).

importance', before reverting to a military line in claiming that 'castles in fact, were built to hold territory'.[47] Burne also takes the military view and emphasises the apparent military weakness of the castle when he describes how at Château Gaillard, France, when it was taken by Philip Augustus, the defenders tried to escape through a postern gate; he also states that 'whereas they could boast one man could prevent an enemy from coming in, the enemy could retort that two men, stationed outside the door, could keep any of the garrison from coming out'.[48]

In the huge publication The History of the King's Works Brown, Colvin and Taylor discuss the structures built and enhanced by the crown during the medieval period.[49] Drawing heavily upon surviving written records, especially the Pipe Rolls, the focus is on the 'who, what, when and how much' of the crown's castles and palaces, religious and other buildings. Occasionally, staircases are mentioned, such as the observation that Edward the Confessor's Westminster Abbey in London had 'prominent stair turrets', based on the evidence of their depiction on the Bayeux Tapestry.[50] In terms of castles, the work emphasises the militaristic interpretation, though not ignoring the domestic. For example, it is noted that the White Tower 'had all the essential accommodation of a royal residence' but also that 'So strong a tower could withstand assault by any military engine known in king William's day'.[51] Passing references to spiral stairs in the Pipe Rolls are noted, such as at Harlech, Gwynedd, in 1286 'dressing of steps for staircases in the towers' and also the existence of a south stair-turret of the gatehouse and at Flint in 1281 reference to 150 steps and tower staircases.[52] However, despite its length, this work offers very few new insights into spirals.

In his 1980s work, Brown reasserts the military role of the castle, though linking it to a particular social system, which in turn has implications for the chronology of the castle. He declares that 'the integrated combination of residence and fortress … is peculiar to the castle (giving us also the clue and key to its social

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[47] Ibid., pp. 4, 11.
[48] R. V. H. Burne, 'The Evolution of the English Castle', Journal of the Chester and North Wales Architectural Archaeological and Historical Society, Vol. 50 (1963), pp. 18, 20.
[49] Brown, Colvin, Taylor, History of the King's Works.
[50] Ibid., Vol. 1, p. 16.
[51] Ibid., Vol. 1, p. 29.
[52] Ibid., Vol. 1, pp. 313, 361.

significance)' and he claims that the castle was 'the characteristic product of the ruling class of medieval Latin Christendom', which no other society produced.[53] This is not factual, for Japan produced castles apparently independently of Latin Christendom. Brown links castles and feudality by stating that Doué-la-Fontaine and Langeais in the Loire Valley were constructed at a similar time to the emergence of vassalage in that area.[54] However, later in this work Brown reflects and adjust his position by stating that castles are products of the 'feudal period', that the castle's existence begins and ends with the feudal period and that the castle is a defensive solution to the cavalry charges that dominated the feudal period in Europe.[55] However, Brown notes that castles could also have an aggressive role in controlling potentially hostile country and acting as a base from which to advance.[56] Brown relates the decline of the castle to the re-centralisation of power and military control rather than the advent of guns and gunpowder because guns are more effective in defending than in attacking a castle.[57] Brown therefore considered all so-called castles built from the seventeenth century onwards to be following an architectural tradition rather than serving a castle's true purpose.

By the time of his later work on castle architecture, Brown saw castles as 'fundamentally offensive', while still associating castles with the feudal system in the West and seeing a link between the construction of Doué-la-Fontaine and Langeais (Figure 1) and the beginning of vassalage. Accordingly, he asserted that England did not have castles before 1066 because government was still centralised, whilst on mainland Europe it had fragmented after the collapse of Charlemagne's empire and vassalage arose to fill the vacuum. In due course in England, as on mainland Europe, 'castles were the method of imposing lordship' and after 1066 the pace of castle building in England was far quicker than elsewhere.[58]

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[53] R. A. Brown, <u>Castles: a History and Guide</u>, (London, 1980), pp. 12-13.
[54] <u>Ibid.</u>, p. 11.
[55] <u>Ibid.</u>, p. 14.
[56] <u>Ibid.</u>, p. 18.
[57] <u>Ibid.</u>, p. 24.
[58] R. A. Brown, <u>The Architecture of Castles</u>, (London, 1980), pp. 8, 17. Around the same time, Brown's co-author in <u>The History of the King's Works</u> published his own studies of castles very much within this military camp: A. J. Taylor, <u>The Welsh Castles of Edward I</u>, (London, 1988) and <u>Studies in Castles and Castle Building</u>, (London, 1984).

Figure 1. The Chateau at Langeais: Remains.
Illustrating two-storey stone structure with windows on the upper level.
Photographer: C. Ryder.

Later in the 1980s, in his study of the decline of the castle, which again privileges military factors, Thompson claims that the history of the castle and its role in society in England are different from the continent, Scotland and Ireland, basing this on the advent and application of artillery. He argues that in late medieval England the vulnerability of castles to artillery led the elite to move away from castles, while elsewhere the castle was adapted to meet the threat of artillery. However, it is possible that broader cultural, social and economic factors were at work here. Thompson himself admits this when he states that by the sixteenth century it was acceptable for a noble to live in a house.[59]

By the 1980s, some historians were beginning to question the military interpretation of castles. For example, Forde-Johnson states that 'however large military considerations loomed, the medieval castle was never an entirely military establishment' and argues that in time the balance between military and domestic changed. Thus he sees courtyard castles such as Bolton, North Yorkshire, and

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[59] M. W. Thompson, <u>The Decline of the Castle</u>, (Cambridge, 1987), pp. vii, 2.

Bodiam, East Sussex, as more domestic than military internally and he describes tower houses as more fortified manors than castles. In some ways Forde-Johnson undermines this balanced view by consistently interpreting spiral stairs in a military context, as 'not infrequently' discontinuous in order to confuse an attacker.[60]

By the 1990s the military interpretation was certainly losing ground.[61] In 1992 McNeill presented a more balanced view on the military and other roles of castles when he described how lords were often absentees and

> violence was always a possibility, and the root of the aristocrat's power was their prowess in war…and out of this dual role came the castle; a place where a lord could live and exercise his power through personal contact with the principal men of the area, and a fortification to protect him from attack or as an expression of the threat that underpinned his power.[62]

McNeill claims that 'castles were built to reinforce lordship or to establish a new lord in the possession of his lands' and 'this brings us back to the basic point of castles, that they were concerned with political control of the population, not with a purely military force; the locals could not be relied on to rally to their lords defence automatically'.[63] Building on this, McNeill states that the style of the castle and its accommodation reflect how power was gained and held in medieval society. The rulers were required to earn the respect of those whom they ruled and also to work through alliances and 'castles were one of their main instruments in this'.[64]

While neither Forde-Johnson nor McNeill specifically or explicitly addresses the issue of stairways in their broad reinterpretations of the castle, this issue is taken up by Davis in his descriptive study of the castles of South Wales. Without offering a

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[60] J. Forde-Johnson, <u>A Guide to the Castles of England and Wales</u>, (London, 1981), pp. 15, 19, 24, 35, 37, 63.
[61] An early sign of this was N. J. G. Pounds, <u>The Medieval Castle in England and Wales</u>, (Cambridge, 1990), which although primarily a military study does embrace some other aspects of the castle consistent with the sub-title of the book 'A social and political history'.
[62] T. McNeill, <u>Castles</u>, (London 1992), p. 16.
[63] <u>Ibid</u>., pp. 45-46.
[64] <u>Ibid</u>., p. 122.

broader interpretation of the role of castles, Davis does in the main emphasise their military attributes in his survey of their features. Within his broad overview of the internal arrangements and structures of the castle, he claims that 'all wall-walks, towers, and rooms were linked by stairways formed of stone steps rising in a spiral around a central post or newel. Sometimes the stair would be in a straight flight within the thickness of the wall (intramural)'.[65] Where this and other statements may be true of the castles in South Wales upon which he focused, they are not true of all castles, even those in Wales.

Castle Studies: Domestic Perspectives

Despite the dominance of the militaristic viewpoint, the residential functions of the castle were not totally dismissed and some ground-breaking work was being quietly undertaken in the mid-twentieth century that would lead to divergent theories about castles and to the second main focus of castle studies, the domestic role of the castle. In articles published in 1958[66] and 1963,[67] Faulkner explores the residential functions of castles, suggesting that at least in part castle planning was driven by domestic use of space. But it was several years before Faulkner's ideas came to the fore in castle studies.

A move in this direction was made by Simpson at the end of the 1960s. He argues that

> In sober fact, the medieval castle was first and foremost a country gentleman's seat, upon which the needs of a scambling and unquiet time imposed a fortified carapace. It was not normally armed to the teeth or stuffed with a garrison of professional soldiers, each at his action station. In time of peace it would contain simply the lord's *familia* or household.

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[65] P. Davis, <u>A Company of Forts</u>, (Llandysul, revised edn, 2000), p. 53.
[66] P. A. Faulkner, 'Domestic planning from the Twelfth to the Fourteenth Century, <u>Archaeological Journal</u>, Vol. 115 (1958), pp. 150-183.
[67] Faulkner, 'Castle planning'.

During his frequent absences, no more than a caretaker and a few servants would be at hand. [68]

Simpson does not deny that castles played a military role in time of war and he discusses how garrisons were formed and how key vassals might be assigned particular towers within royal castles, evidencing this through tower names at Dover Castle, Kent. Thus Simpson sees castles not merely as examples of military architecture nor simply as places for historical scenes but as centres of feudal government. Simpson does briefly address spiral stairs, for example when describing the keep at Caldicot Castle, Monmouthshire, which he sees as clearly 'designed to be a lord's residence', as having three storeys of high status rooms with a spiral stair that 'rises to the two upper floors', a stair to the basement following the curvature of the wall and another stair which follows 'the curvature of the wall, [and] leads up to the battlements'. [69] Simpson notes the presence of spiral stairs throughout this work, though sadly, when describing Colchester Castle, Essex, he falls into the old trap of claiming that the spiral clockwise spiral stair aids the defender. He also suggests that various features, for example in the Keep at Flint, are primarily defensive and this weakens his case that the castle was 'first and foremost a country gentleman's seat'. [70]

In the late 1970s, Coulson, too, moves away from the militaristic view and suggests that apparently military features of castles were more symbolic than hitherto appreciated, such as the use of crenellations to denote lordship. Many castellologues warmed to his fresh views that, as in other parts of medieval society, nostalgia was important in castle design, which reflected 'the moeurs of chivalry, the lifestyle of the great, and the legends of the past'. [71] There is, perhaps, more weight in Coulson's argument when addressing it to the later medieval period.

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[68] W. D. Simpson, Castles in England and Wales, (London, 1969), pp. 13-14.
[69] Ibid., pp. 15-16.
[70] Ibid., p. 56.
[71] C. Coulson, 'Structural Symbolism in Medieval Castle Architecture', Journal of the British Archaeological Association, Vol. 132 (1979), p. 79. See also Coulson's later article, 'The state of research: cultural realities and reappraisals in English castle study', Journal of Medieval History, Vol. 22 (1996).

What Coulson considers important and is highly relevant to this thesis is that 'the regulation of access to the lord's presence transcends the period' and is a constant feature of 'domestic planning'; thus he claims that guard chambers were stocked with weapons not for reasons of defence but to attend on the lord – nobly – and to prevent intruders from entering into the lord's presence.[72] He draws on a communication from Edward I to the seneschal of Gascony where Edward states 'a measure of military affectation, and a modicum of actual defensibility, were considered appropriate to a gentleman's residence'[73] and Coulson adds that castles 'symbolised dominion' and also, as Edward I indicated in 1290 when he ordered the purchase of a castle in south-west France (Quercy), castles are proper places to do business. Coulson later asserts boldly that the 'strictly military contribution [to the castle] was slight'.[74]

In his more recent work, both in collaboration with Higham and alone, Creighton also emphasises the domestic role of castles, though often placing them within a wider landscape than Coulson, and he too supports the view that castles 'illustrate the common aspiration of rich medieval people to display their strength and status through private fortifications' and that there was a move by new lords to 'consolidate their social and economic positions' by constructing castles.[75] Creighton also states that access to different spaces within the castle was restricted according to social grouping and he raises the concept of internal 'social space', designed to impress through the architectural features and by the use of bright colours – green, red and blue. Even when exploring military features, Creighton indicates that not all castles were created equal in terms of defence and that some military features may have been for display, with the castle increasingly seen as a 'high-status gentry house'[76] so that it is too simplistic to assert that defence comes first and comfort second when designing a castle.

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[72] C. Coulson, <u>Castles in Medieval Society</u>, (Oxford, 2003), p. 71.
[73] <u>Ibid</u>., p. 85.
[74] <u>Ibid</u>., p. 205.
[75] O. H. Creighton and R. Higham, <u>Medieval Castles</u>, (Princes Risborough, 2003), pp. 7, 13.
[76] <u>Ibid</u>., p. 28.

Castle Studies: Landscape Perspectives

A third theme that moved on from the militaristic viewpoint originated with Austin, who discusses the place of the castle in the landscape and the landscape in relation to the castle in a 1984 lecture to the Society for Landscape Studies where he bemoans the fact that 'the academic literature and excavation reports on individual castles are dominated by debates on forms of defensive structure, such as the development of the keep' and insufficient weight is given to the domestic side.[77] Austin sets the scene for the difficulties that are encountered in castle research and asks 'can we genuinely understand the meaning of the castle today without knowing how the contemporary mind viewed it? Yet can we achieve this or come close?'[78] He then describes how things were not static throughout the Middle Ages and uses as an example differences between Edward I's castles and Sir John Fastolf's Caister, Norfolk, asking 'What were the intentions of each?'[79] Austin further notes that not all castles were the same size and neither did 'their activities remain the same at all phases of the Middle Ages'.[80] Turning to the domestic aspects of castles, Austin suggests that the actual private space or 'residential arrangements' for the lord in a castle were relatively small compared to the total space, using Richmond, North Yorkshire, and Ludlow, Shropshire, as examples.[81] Austin makes one aware that we require knowledge of 'the functions conducted in the great open spaces of certain castles' but this is not enough; we need to understand the functions and events of what went on in medieval society if we are truly to understand castles.[82]

As well as looking at the wider social and domestic roles of castles, Creighton has also worked on castles in the landscape, stressing that when looking at castles we must consider 'their setting within, and their contribution to the medieval

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[77] Austin, 'The castle and the landscape', pp. 69, 72.
[78] Ibid., p. 69.
[79] Ibid., p. 69.
[80] Ibid., p. 76.
[81] Ibid., p. 76.
[82] Austin has recently taken this further in an excavation report which draws extensively upon history as well as archaeology better to understand a specific castle and its wider context; see D. Austin, Acts of Perception; a study of Barnard Castle in Teesdale, (2 vols, Durham, 2007).

landscape'.[83] Seen within the wider landscape, Creighton emphasises that 'castles served a number of diverse needs….high status private residences and estate centres as well as military strongholds. As judicial centres and seats of local government, castles were commonly venues of manorial and honorial courts, while many strongholds were also armouries and treasuries'.[84]

Creighton also moves the castle in the landscape beyond its immediate environs with his 1997 work on a small number of Leicestershire castles that develops the view that castles 'must be viewed holistically as manorial components within their contemporary landscapes'.[85] He takes the case for landscape study further, with the potential for opening up a wider field of study for castle-landscape research, when he raises the concept of castle landscapes having regional trends. By 1999, Creighton had undertaken research in Rutland to develop his earlier viewpoint.[86] From this research, he concludes that the castle cannot stand alone as a definer of medieval lordship for it is an item within a set of landscape features such as churches and estates, encouraging further research into this area.

Liddiard is probably best know for his work Landscapes of Lordship[87] based on his PhD thesis of 2000, in which he explores the distribution, quantity, siting and associated structures of castles in Norfolk. He melds together documentary evidence, architecture, but especially landscape history to form a picture of the medieval Norfolk landscape – at least that relatively close to 'elite residences' – and how people perceived that landscape.[88] He argues and concludes that castles were merely one element of consciously-developed lordly landscapes and can only be understood when viewed within that wider landscape of lordship. Liddiard's 2005 work, designed to promote more widely recent scholarly findings, succinctly covers the major fields of castle research, encouraging those weaned on the

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[83] O. H. Creighton, Castles and Landscapes: Power, Community and Fortification in Medieval England, (London, 2002), p. 2.
[84] Ibid., p. 1.
[85] O. H. Creighton, 'Early Leicestershire Castles: Archaeology and Landscape History', Transactions of the Leicestershire Archaeological and Historical Society, Vol. 71 (1997), p. 21.
[86] O. H. Creighton, 'Early Castles in the Medieval Landscape of Rutland', Transactions of the Leicestershire Archaeological and Historical Society, Vol. 73 (1997), p. 19. See also his work on 'Early castles in the medieval landscape of Wiltshire', Wiltshire Archaeological and Natural History Society Magazine, Vol. 93 (2000).
[87] R. Liddiard, Landscapes of Lordship, (Oxford, 2000).
[88] Ibid., p. 1.

militaristic viewpoint to reconsider the castle story. He also entreats the reader to consider – not blindly accept – the 'revisionist' views that he has presented and which are considered in this chapter.[89] Returning to a small but significant part of his 2000 work,[90] and maintaining the challenge to generally accepted views, Liddiard has edited a work on medieval parks that, through showcasing recent work, moves the knowledge of parks from a local basis to a more general.[91] This work underpins the knowledge of parks, including the relationship between parks and castles and other elite residences, by drafting in a wide range of topic experts and in so doing improves our understanding of the medieval world and the interaction of its component parts. As ever, one of Liddiard's strengths is to pull apparently disparate elements together and to produce a concise and coherent synopsis whilst aiming to encourage the reader to think, to research and to come to his or her own conclusions.

Lowerre proudly asserts that his 2005 work is from the 'revisionist camp' that rejects the 'battleship in the landscape' view of castles. From this point his research covers four south-eastern Midland counties with particular reference to the reasoning behind castle location. Admitting that it is difficult to uncover the reasons for a specific castle location, but not irrecoverable as Brown purports, Lowerre states that there is no one reason for a castle to be on a specific site but 'multiple causation' and he dedicates a chapter to each cause, most of which he sees as linked directly or indirectly to the landscape, concluding that there are patterns within patterns.[92] Another recent work which emphasises the wider landscape of the castle, albeit in this case on a single specific castle, focuses on a project undertaken at Weobley Castle, Herefordshire. The author, Hillaby, attests that 'Politically, socially, administratively and economically, castles were actually a part of the fabric of the local community, from the people they employed and to the functions that they undertook…. Castle landscape and community were, in

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[89] R. Liddiard, Castles in Context: Power, Symbolism and Landscape, 1066 to 1500, (Macclesfield, 2005), pp. 151-152.
[90] Liddiard, Landscapes of Lordship, p. 51.
[91] R. Liddiard (ed.), The Medieval Park new perspectives, (Macclesfield, 2007).
[92] A. Lowerre, Placing Castles in the Conquest, (Oxford, 2005); the short quotations are from p. 1.

effect, all facets of the same dynamic within medieval society, rather like the inter-linked circles of a Venn diagram'.[93]

Thus much recent work has stressed that in landscape as well as in architectural terms the castle stood not in isolation, but as part of a development that typically could include ecclesiastical buildings, palaces, hunting lodges, hunting grounds, forest, variously regulated woodlands, mews for hawks, stables, domestic buildings for those of the non-lordly classes, agricultural buildings, mills, inns, workshops, Guild structures, docks, warehouses, shipyards, and temporary structures for fairs, markets and whilst undertaking building projects. As far back as the 1960s, this was hinted at by Musset in a French context, who states that it was 'the introduction of much more formidable combination of château, bourg et monastère' that created the local community. Within this widely varied architectural structure existed a social structure of relationships driven by status, religion, wealth, power, degrees of ownership and law all overlaid with the normal human emotions, love, fears, hopes and aspirations.[94]

Castle Studies: Status Perspectives

The fourth area of castle studies, castle as status symbol, overlaps with and is seen in works covering the social and landscape aspects of castles – we have already seen how Simpson, Coulson, Creighton and Liddiard, amongst others, have contributed to this theme. However, this has been a growth area in castle studies over the last two decades. For example, much of the work of Thompson reflects upon this theme.

Focussing mainly upon England, Thompson places the origins of the castle in the need for the aristocratic hall culture to defend itself in the turbulent times of the eighth century. This led progressively to the invention and construction of castles

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[93] J. Hunt, 'An Overview: Castle, Landscape and Community', in G. Nash and B. Redwood (eds), Looking beyond the castle walls: The Weobley Castle project, (Oxford, 2006), p. 59.
[94] L. Musset, 'Peuplement en bourgage et bourgs rureaux en Normandie du X au XXIII siècle', Cahiers de civilisation médiévale X - XII siècles, Vol. 9 (Poitiers, 1966), pp. 177-208.

that incorporated the main elements of the hall culture into a defensible whole.[95] This solution produced the keep that was not a refuge but a full-time dwelling and accordingly Thompson devotes a lot of attention to the domestic facilities of a castle.[96] The castle residents made use of existing and earlier defences where available but these were frequently too extensive to be defended by the far smaller medieval household and garrison.

Turning his attention to the later years of the castle, Thompson roots the decline of the castle in changes in society, where service – especially military – to one's superior in the hierarchy was being substituted by payment; this led to the demise of the castle in large numbers and in its original form, although some castles continued to function as high status residences. He also draws attention to the number of structures termed 'castle' that were built in the later medieval period but, partly returning to a militaristic interpretation, he argues that they were not true castles because they lacked a 'massive wall encircling the site, thick enough for defenders to stand on its top behind the shelter of its parapet'.[97] Even though Thompson pays attention to the domestic and status role of a castle, like almost all historians he ignores stairways, excepting a passing comment that the stairs in Fulk Nera's castles were made of wood.[98]

A few years later Thompson restates the case for militarism in castles when in a short article he writes that 'the military approach to castles was initially dictated by the fact that only the fortifications usually survive and these are the main features they all share'.[99] He further argues that 'nevertheless we have to bear in mind that the prime consideration of the builder was to make the site defendable and if we overlook that we lose sight of the reason for the castle's existence'.[100]

The Battle for Bodiam was a key conflict in the debate comparing the importance of militarism to the importance of domestic comfort and status. Bodiam is well

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[95] M. W. Thompson, The Rise of the Castle, (Cambridge, 1991), p. 33.
[96] Ibid., passim.
[97] Thompson, Decline of the Castle, p. 2.
[98] Thompson, Rise of the Castle, p. 39.
[99] M. W. Thompson, The military interpretation of castles', Archaeological Journal, Vol. 151 (1994), p. 444.
[100] Ibid., p. 439.

sited to defend the Sussex coast against invasion from France and its moat, towers, gun ports and crenellations give the appearance of a heavily defended structure. Research by Coulson and separately, but in parallel, by Everson and Taylor, produced strong evidence to support the view that Bodiam was quite weakly defended.[101] Sometimes now called 'old soldier's dream house', the castle and surrounding landscape at Bodiam are now more often interpreted in terms of aesthetics and status symbols. Picking up this theme, Johnson looks at the design of Tattershall Castle, Lincolnshire, where its owner wanted things to be 'proper',[102] arguing that an owner would wish his castle to reflect his social as well as his military status.[103] He describes Cooling Castle, Kent, as sited to present a fine view from the south but this means that it is poorly defended from the north from where the biggest threat is likely to come. Building on this, Johnson argues that physical forms in castles should not be taken literally but should be interpreted symbolically. He describes the castle as having 'formal elements' associated with controlling ceremonial movement and 'framing elements' associated with presenting views both interior and exterior.[104] He asserts that early research into castles was by ex-military figures and thus the military viewpoint was taken, but that the military case has little substance after the thirteenth century.[105] Thus castles are neither symbols of power nor about balancing defence and comfort nor about social status nor about conspicuous consumption in isolation but about all of these things and none of these things. He argues for new areas to be investigated: circulation patterns; organisation of space; social status and relationship to castles; and castles as theatre.[106] Specifically with regard to space and relevant to this thesis, Johnson states that 'a porch or a flight of stairs or both, defines the next step upwards in the social and spatial ladder'[107] and adds that 'the third element is that

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[101] D. Thackray, Bodiam Castle, (London, 1991); C. Coulson, 'Bodiam Castle: truth and tradition', Fortress, Vol. 10 (1991); P. Everson, 'Bodiam Castle', Château Gaillard, Vol. 17 (1996); N. Saul, 'Bodiam Castle', History Today, Vol. 45 (1995); D. Stocker, 'The Shadow of the General's Armchair', Archaeological Journal, Vol. 149 (1992); C. Taylor, R. Wilson-North and P. Everson, 'Bodiam Castle', Medieval Archaeology, Vol. 34 (1990).
[102] M. Johnson, Behind the Castle Gate: from Medieval to Renaissance, (London, 2002), p. 57.
[103] Ibid., p. 13.
[104] Ibid., p. 3.
[105] Ibid., p. 3.
[106] Ibid., p. 7.
[107] Ibid., p. 77.

of twists and turns. Late medieval buildings almost always involve turns at critical moments, when one crosses a threshold into a space of different social status.'[108]

It is this controlled movement around the castle interior that reflects the controlled movement around the castle exterior, with water features for example, and the castle visitor would 'understand the arrangement of the castle' and would know 'when to stop, when to turn, which areas where accessible to his or her rank, even demeanour and bodily position at each appropriate point in his or her progress through the castle',[109] although climbing or descending spirals may temporarily disorientate the visitor – perhaps deliberately. Woolgar develops this when he states that it was etiquette and not physical barriers that gave people the private space to which they were entitled.[110] The militarists might argue that the turns are to give the advantage to the defender, such as the zigzag streets in Kyoto, whilst others might look at the work of Frank Lloyd Wright, where turns into rooms are one of his design features that open up a fresh vista to the visitor. It is this understanding on a small scale that brings about wider understanding.[111]

In her work on knights and knights' fees, Harvey notes that 'by the early thirteenth century the word knight did not denote simply a military function; it had also become a title with attendant civil duties', which would require a suitable space or spaces where they could be undertaken. She further states that the first generation of knights were expected to be 'full timers', and in the eleventh and early twelfth centuries were of low and 'unfree origin', but that from 1150 onwards knights increased in 'grandeur'.[112] This suggests that after 1150 there would be a significant change in the type and quantity of accommodation required in castles.

Bloch supports Harvey when he states that the twelfth century saw the emergence of the nobility.[113] Bloch describes life in the castle as rather crowded not only

[108] Ibid., p. 83.
[109] Ibid., p. 69.
[110] C. M. Woolgar, The Great Household in Medieval England, (London, 1999), p. 203.
[111] See also M. Fradley, 'Space and Structure at Caernarvon Castle', Medieval Archaeology, Vol. 50 (2006), discussed further in Chapter 4, and also R. Gilchrist, Gender and Material Culture, (London, 1997) and Gilchrist, Gender and Archaeology, (London, 1999).
[112] S. Harvey, 'The knight and knights' fees in England', Past and Present, Vol. 49 (1970), p. 43.
[113] M. Bloch, (trans. L. A. Manyon), Feudal Society, (London, 2nd edn, 1962), p. 283.

because of lack of space but also because it was 'the result of habits, which in that age seemed inseparable from the position of a chief';[114] it was understood that 'it was not seemly that a lord should eat alone' and in this togetherness knowledge would be transferred 'much less by books and study than by reading aloud, the reciting of verse, and personal contacts'.[115] Bloch also sheds light on the move from wooden castles to stone, as it would take more armed men to defend a wooden castle than a stone one; he quotes Bertrand de Born, the troubadour from Périgourd, 'from lime, sand and freestone…gateways and turrets, vaults and spiral staircases'.[116] It is under these staircases that poor persons took up their lodgings and some died there – such as Count Simon of Crépy.[117]

McNeill adds a further twist when he takes a societal view of castles as he describes how 'Violence was always a possibility, and the root of the aristocrats' power was their military prowess.' He stresses that the lord's power was based upon personal contact with his followers and where this was insufficient, as in Ireland, problems ensued. McNeill concludes that 'Out of this dual role came the castle; a place where a lord could live and exercise his power through personal contact with the principal men of the area, and a fortification to protect him from attack or as an expression of the threat that underpinned his power.'[118] However, McNeill does consider that certain castles were designed to hold a large number of men and as such were purely military, citing Neroche, Somerset, Deddington, Oxfordshire and Richmond as examples.[119] However, he suggests that many castles were sited for convenience rather than for sound military reasons and, after describing how the inner household functioned, he demonstrates the castle's need for 'elaborate accommodation' where the basis of power in Europe – consent and respect of the ruled classes – was sought, given and reconfirmed.[120]

Some ten years before McNeill's work, in a wide-ranging study of the castle in England and Wales which touches on many aspects but which stresses their social

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[114] Ibid., p. 302.
[115] Bloch, Feudal Society, p. 21.
[116] Ibid., p. 20.
[117] Ibid., p. 21.
[118] McNeill, Castles, p. 16.
[119] Ibid., p. 33.
[120] Ibid., p. 122.

and status roles, Platt suggests that there were two essential pre-conditions for castle building: a breakdown of central authority and recognition of the castle as 'the most appropriate symbol of lordship'.[121] Platt sees a direct correlation between castle building and the power of the king, so that 'castle building in England either advanced or stagnated in close harmony with the waning or waxing of royal government'. (Gravett, too, suggests that the lack of central authority forced the nobles to set up personal defences against the invader and the castle became a symbol of authority, 'a relatively recent phenomenon. They seem to have arisen to the response to the situation in north-western Frankia after the death of Charlemagne'.[122]) Platt also advances the view that castles, at least in the immediate post-Conquest years, were used 'during subjection of the countryside, the castle's essential purpose was as forward base and refuge, the fighting hub of an appropriated estate'.[123] However, in England just after the Conquest, there were too few castles to establish the castle as a symbol of lordship. So although Platt makes a case for castle as status symbol, he links this to the military role of the castle and often privileges military factors. Platt returns to the fray in 2007 with his case for defence being the primary motivator for castle building throughout the Middle Ages and in the later medieval period class mobility and fear of social unrest requiring a defendable structure.[124]

Linked very much to his wider 'landscape of lordship' thesis, Liddiard tellingly comments that 'it is misleading to think that castles need to belong to one category and is fruitless'.[125] He argues that 'to the medieval mind, the castle was therefore far more than a place to live or an administrative centre: it represented and reflected the rank and dignity of the lord' and thus castle construction was 'at least in part, for social and ideological reasons';[126] he suggests that 'men of rank built castles simply because they were expected to do so'.[127] The importance of imagery in a castle design is emphasised by Liddiard when he states that by

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[121] C. Platt, The Castle in Medieval England and Wales, (London, 1982), p. 2.
[122] C. Gravett, Norman Stone Castles (2) Europe 950-1204, (Oxford, 2004), p. 4.
[123] Platt, Castle in Medieval England and Wales, p. 1.
[124] C. Platt, 'Revisionism in Castle Studies: A Caution', Medieval Archaeology, Vol. 51 (2007), pp. 83-102.
[125] Liddiard, Castles in Context, p. 39.
[126] Ibid., p. 41.
[127] Ibid., p. 42.

blocking the arrow slits a castle was considered slighted.[128] Liddiard does not deny the impact of military factors upon the castle. Thus with the increasing use of gunpowder castle design changed, Liddiard notes, with the advent of features such as gun ports even in castles like Baconsthorpe, Norfolk, which were too fragile to withstand an attack by guns, yet the design outwardly appears to accommodate changes in warfare. Liddiard notes that a 'demand of social rank necessitated at least an awareness of the latest forms of military hardware'[129] but always stresses the importance of symbolism in castles as well as in the landscape surrounding them. He notes how the Peasants Revolt of 1381 targeted for destruction all the symbols of lordship, for example dovecots, mills and fish ponds as well as castles. Finally, Liddiard appeals for further work to position events and functions within specific places in castles, better to enable those spaces to be interpreted, with closer examination of things like the quality of design and workmanship of features such as fireplaces to determine how a room would have appeared and thus to help establish the hierarchy of the space. He does not include spiral stairs in this. In response to Platt's 2007 article reasserting the military, Liddiard together with Creighton published what cannot be called a defence or a repost but certainly was a call for sanity in the defence-status debate and recommended that a more holistic and wide-ranging approach be taken, so that we attempt to look at the castle through the eyes of medieval folk.[130]

The various approaches to the study of castles do, of course, have implications for space, access and stairs, but only very rarely do stairways of any type or spiral stairs in particular receive detailed attention in general works of this sort. Indeed very few published works assess medieval stone stairs or spiral stairs. One historian who has looked at this area is Tenen, who describes staircases as being:

> built into the thickness of the walls and were of two types. One was quite simple, a flight of stone stairs ascending diagonally from behind say the bottom left-hand corner of a wall to behind its top right-hand corner. The next flight reversed the direction, say, at right-angles to the first. The other

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[128] Ibid., p. 68.
[129] Ibid., p. 64.
[130] O. H. Creighton and R. Liddiard, 'Fighting Yesterday's Battle: Beyond War or Status in Castle Studies', Medieval Archaeology, Vol. 52 (2008), pp. 161-169.

type was more interesting. They called it a vice – that is a screw – and we should call it a spiral staircase.[131]

Tenen continues by describing the stone for the steps in a spiral stair as being made of 'keyhole' blocks that created a central post called a newel and that spiral stairs were usually constructed inside a circular shaft – usually a corner turret – but a spiral stair could be constructed in a tower of rectangular section, though this would require steps of different sizes. Tenen does not discuss the stair beyond this and he is not fully accurate in his descriptions of where they are to be found nor in the assertion that all spiral stairs are made from keyhole shaped blocks, but at least he describes spiral stairs.

Gravett mentions a number of spiral stairs in his wide-ranging work, linked to his broader assessment of a castle as 'a statement of power, used for receptions and state occasions' and also residences.[132] Gravett explores a range of spirals in English and European castles and other military structures, noting in passing how 'numerous cupboards, closets and stairs weaken the walls' of tower houses.[133]

Castle Studies: French Sources

The widest ranging work on spiral stairs of the medieval period is that of Mesqui in the chapter 'La communication verticale: les escaliers' in his two-volume work Châteaux et enceintes de la France médiéval.[134] Mesqui is an engineer who held senior responsibility for the bridges and roads of France, a former President of 'Société française de archéologie' and a prolific writer on feudal architecture. In this chapter, Mesqui discusses differences between minor and major spiral stairs based upon the diameter of the stair and describes the mutation of the spiral stair in French châteaux between the tenth and fifteenth centuries. He argues that in the earlier medieval buildings there was no need for vertical communications because there were no levels between which to circulate, for example at Fécamp near

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[131] I. Tenen, This England, (London, 1948, reprinted 1955), pp. 173-174.
[132] C. Gravett, Castles and Fortifications from around the World, (Ludlow, 2006), p. 18.
[133] Ibid., pp. 23-26, 42.
[134] J. Mesqui, Châteaux et enceintes de la France médiéval: de la défense à la résidence, (2 vols, Paris, 1993), Vol. 2, pp. 162-168.

Rouen in the tenth century, where the kitchen and multi-functional hall were adjoined horizontally. Once more levels were introduced into castles in the following centuries, the problem of moving from one to another needed to be solved. Mesqui suggest that this multi-storey arrangement was inhibited, not by the inability of builders to construct tall buildings – typically early medieval Norman structures were built wide, strong and plumb vertical because the builders appeared not fully to comprehend stress, compression and oblique loading[135] – but by the heating arrangements, with a centrally located hearth with the smoke venting through the roof; this had effectively limited most residential buildings to a maximum of two storeys, with an unheated ground or basement level and a heated upper level. The advent of the mural chimneys, with the fire set against a wall and smoke sucked up through a wall cavity, now allowed buildings to rise above two storeys and for each storey to be heated. This in turn promoted the development of stairs including spiral stairs.

Mesqui describes how in the twelfth century small spiral stairs were used to access residential space in castles and cites Beaumont-le-Richard near Bayeux where there exists a *vis mineure* (1.60 metre diameter) in the corner of the *grande salle*, accessed by an arch.[136] Mesqui describes how from the thirteenth century the large spiral stairs called *grandes vis* in corner turrets were replacing the large stair called *grands degrés*,[137] which were wide, straight intramural stairs.

Because no wooden interior or exterior stairs remain, Mesqui questions whether they have subsequently been removed and/or replaced. In England and Wales there is sufficient evidence to argue that some structures with an entrance at first storey level (typically, the two storey structures of the lesser ranks) had wooden stairs and that some of these stairs were removed and replaced by stone fore-buildings. Mesqui does find tangible evidence for a fourteenth-century wooden stair at Ceccano's library in Avignon.[138] Constructed as a fortified house with no ground floor openings, it is clear that a now lost stairway in wood or another

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[135] See J. E. Gordon, <u>Structures or why things don't fall down</u>, (London, 1978).
[136] Mesqui, <u>Châteaux et enceintes</u>, Vol. 2, p. 163
[137] <u>Ibid</u>., p. 164
[138] This name has only been used in the relatively recent past and commemorates Cardinal Annibale Ceccano who stayed here from 1333 to his death in 1350 and continued the building's construction.

material led from the *grande salle* floor to the floor above. The painted wall decoration in the *grande salle*, particularly five arches painted on the north wall, has remained in an excellent state of preservation, revealing the line of the now lost stairway. There are no signs in the stonework that there was ever a stone stair here.[139] From this, Mesqui suggests that the wooden stairs were probably partitioned from the rooms in which they were located and that the partitions have now disappeared too.

The thirteenth century sees the development of the spiral stair from being inside the thickness of the walls to becoming exteriorised. Essentially, argues Mesqui, the *grands degrés* are replaced by the *grands vis* and he supports this by citing examples at Montelimar (early thirteenth century) and Saint-Louisa Septmonts (mid-thirteenth century). The spaces to and from which the spiral stairs led were no longer limited to the private space of the lord except the stair to the *grande salle*. To this effect, flanking towers became stair turrets containing large spiral stairs for internal use and the stairs leading to the *grande salle* were highly decorated, as at le Tour Jean sans Peur, Paris, where the ceiling of the spiral stair at *grande salle* level is decorated with carving evoking the origins of the builder's family, the dukes of Burgundy. The carving in stone shows oak to represent the duke's father, Philipe le Hardi; hawthorn for his mother, Marguerite de Flandre; and hops for himself. As well as the decorative elaboration, Mesqui argues that this period experiences the growth in numbers of spiral stairs and a diversification in their usage. In parallel to this, there is a movement in château design towards horizontal planning, where the visitor moves on the same level from the public rooms to the increasingly private rooms through doorways.

Mesqui discusses the uncertainty of the status of the stair before the fourteenth century, though he notes that despite status variations between residences, the spiral stair became the stair of choice and was becoming as common in secular buildings as it was in religious buildings. Initially hidden in the walls of buildings, from the thirteenth century the spiral stair was more often built into stair towers that became a more obvious external feature. Mesqui makes a key point that

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[139] Mesqui, Châteaux et enceintes, Vol. 2, p. 164, plate 182.

unless the spiral stair or other type of stair led to the *grande salle*, it was not considered to have a noble function.[140] These other spiral stairs Mesqui considers insignificant in movement around the building. We might note that this thesis will dispute this interpretation, though in fairness while this work will concentrate primarily on the castles of England and Wales, Mesqui concerns himself solely with those of France.

Towards the end of the fourteenth century, argues Mesqui, there are three strands to the development of the spiral stair: it becomes an external part of the architecture; its use becomes more diversified; and spirals appear in larger numbers in buildings. In exploring the exteriorisation of the spiral stair, Mesqui draws on the recent work of Mary Whiteley as well as on the seventeenth-century writings of Sauval to reassess the Louvre's large external spiral stair that was named 'grande vis' in the accounts for 1360-1370 during its construction. This *grande vis* was decorated with figures representing the royal dynasty. The design of the stair is uncertain in that it was spiral but it is unclear if it consisted of a true continuous spiral or a number of flights of stairs because the stair was destroyed and no surviving description covers this aspect. Mesqui assesses other exterior stairs, such as that at Saumur built prior to 1371 under Louis II of Anjou, which has four balconies (one at each revolution of the stair) overlooking the courtyard. The stair in this form does not detract from its nobility but adds to it, argues Mesqui, and he gives four other examples to support his view.[141] This trend for the spiral stair to be enclosed in a clearly observable, external stair tower spread widely. Mesqui attempts (albeit briefly) to relate the change in stairs to a change in mindset, from the need for straight stairs (*grande degréz and perron*) for knights to ascend when armed perhaps in formal procession, to the external spiral stair reflecting a more courtly comportment on an abundantly decorated stair that reflects the heritage of the building's owner or resident.[142]

The second theme covered by Mesqui is the diversification of usage. Firstly, the *grande vis* of the Louvre no longer led directly to the *grande salle* but to the

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[140] Ibid., p. 165.
[141] Ibid., pp. 166-167.
[142] Ibid., p. 167.

chambre de parement[143] (ante-chamber through which access to the *grande salle* must be made). Mesqui notes that the hotel d'Artois, Paris home of the dukes of Burgundy had a magnificent independent stair tower (Tour Jean sans Peur, described above) that has a small spiral stair leading to the noble chambers above; from this Mesqui suggests that the spiral stair is now commonplace by being used for access to residential zones and not only to the *grande salle*.[144] Spiral stairs also came to be used for servants to service the lords' apartments. Mesqui continues with other examples, including the external spiral stair tower at the early fifteenth-century castle at Tarascon near Avignon that links the chapel and royal apartments.

The third strand to Mesqui's view is the 'multiplication' of the spiral stair and through that its 'banalisation'.[145] This 'banalisation' idea is reached through examples of spiral stairs being used not only to reach the lesser lordly chambers like the *chambre a parer*[146] but also to reach the battlements (such as at Coucy in northern France *circa* 1380s), a spiral stair for the private use of the lord and a spiral kitchen stair. Mesqui claims that of the multiplicity of spiral stairs found at Coucy, it is the *grande vis* which still stand out, both through its decoration and the fact that it physically protrudes from the façade further than the other spiral stair towers, so still demarcating it as the main access route to the *grande salle*.[147]

In his assessment of vertical communication in the noble residence, Mesqui summarises the evolution of the stair in the château as springing from a new concept of the château, starting in the 1360s when the building was organised both horizontally and vertically, with the stairs giving or limiting vertical access and the corridors giving or limiting horizontal access. Then the spiral stair developed in its own tower and became a common solution to vertical communication in France.[148] Thus within his comprehensive work on the châteaux of France, Mesqui has made a great contribution to the small pool of knowledge that existed on spiral stairs and stairs in general. His intention was to limit the research to France and that must

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[143] Interestingly the verb 'parer' can be translated as 'to adorn' and 'to protect'.
[144] Mesqui, <u>Châteaux et enceintes</u>, Vol. 2, p. 167.
[145] <u>Ibid</u>., p. 168.
[146] Note that at Coucy the stair to the antechamber to the 'grande salle' is an intramural stair and follows the curved line of the wall and is not a spiral stair.
[147] Mesqui, <u>Châteaux et enceintes</u>, Vol. 2, p. 31.
[148] <u>Ibid</u>., p. 168.

always be considered when applying his comments to non-French lordly structures. Châteaux are not castles and despite the commonality of culture and structures of France and England *circa* 1066, the two develop differently; given that structures reflect the needs of the culture that constructs them, this is not surprising. This idea will be revisited later in the thesis.

Whiteley supports Mesqui's interpretation of the 'evolution' of the spiral stair in French architecture, though adding a note of caution that more work is needed.[149] Using the example of Philippe le Bel, in 1298, modernising his Paris residence (le Palais de la Cité, next to Sainte Chapelle) including a new and much larger *grande salle* with an external spiral stair from the courtyard, she describes how the spiral stair became a major element of French civil architecture by the later Middle Ages. Whiteley notes that terms for grand stairs were *degréz* and *les grands degréz*, denoting a substantial stair. Whitely argues that another name for this particular stair in early text was *le perron de marbre* and that this term probably referred to a block of marble at the foot of the stair and not the whole stair. This is important because it defines two aspects or functions of this particular spiral stair and weakly implies that this twin functionality may be found elsewhere. The *perron de marbre* is noted as the 'stone of justice' and it is from this stone that parliamentary decrees were announced by the crier and that some people were by law publically humiliated. Having reviewed further evidence, Whiteley concludes that, in its design, the type of stair found at le Palais de la Cité was a prestigious symbol of monarchy and played an important part in the ceremonial life of the court. Unfortunately a fire in 1776 destroyed the stair.[150] Although this stair was a straight not a spiral stair, it does give rise to reflections that (in some instances) the stair was more than a method of moving from one level to another in a building: it had a wider meaning.

Whiteley also assesses the role of spirals within the Louvre, the official centre of the court, developed from an old *château-fort* in the mid-fourteenth century. The architect, Raymond du Temple, built around the old donjon, which was retained

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[149] M. Whiteley, 'Deux escalier royaux du XIV siècle : <<les grands degréz>> du palais de la cité et la <<grande vis>> du Louvre', <u>Bulletin Monumental</u>, Vol. 147 (1989), pp. 133-154.
[150] <u>Ibid</u>., pp. 133-142.

and must have been a significant symbol, and this limited space, creating some challenges. The second problem was that there were two main accesses to the palace requiring a grand stair: namely to the king's apartments and to the queen's. The building was constructed with a set of rooms for the king on the second floor and a set for the queen on the first. Each of these sets of rooms was accessed horizontally, with the rooms becoming progressively more private as one moved through them away from the main door. The main spiral stair which gave access to both sets of royal rooms was designated as the principal stair even if it was not the largest, and it soon became known as the *grande vis*, echoing the *grand degréz* term for the straight main access stair.[151] Placed in a rectangular turret, the clockwise spiral stair with seats did not give access to the ground floor, only to the first and second floors for the queen's and king's apartments respectively. (The rectangular or polygonal stair turret containing a spiral was not unusual in France from the end of the fourteenth century to the middle of the fifteenth century and the clockwise direction was more common.[152]) Whiteley describes how appropriate the spiral stair was for these royal tasks in that it took the shape of a tower, this reflecting the symbol of the *grand seigneur*, namely a tower or donjon.[153] Here, as in other examples of *grande vis*, there is evidence that the stair was decorated in a form to reflect the heritage of the occupier, in this case with exterior stone statues (created by some of the greatest sculptors of the time) to show the 'solidarity and continuity of the Valois' dynasty.[154] Two statues of sergeants at arms were placed each side of the ground floor entrance. The stair turret had many window openings and Whiteley gives three reasons for their use: increased light, the opportunity to look out on the following procession and the opportunity for those climbing the stairs to be seen from outside.[155]

Similar stairs were to be found in many locations in France associated with high-level lordship but few, for example Saumur, or the partially ruined spiral in the donjon at Lavardin, north of Tours remain today. Smaller but still similar spiral stairs in decorated stair turrets are also found internally, such as at Westminster

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[151] Ibid., p. 144.
[152] Ibid., p. 147.
[153] Ibid., p. 144.
[154] Ibid., p. 144.
[155] Ibid., p. 148.

Abbey leading to the Chantry Chapel of Henry V and part-internal part-external at the Musée Cluny, Paris (Figure 2). Whiteley concludes that the *grande vis* was an immediate success as a principal entrance to high status civil buildings because it offered prestige and practicality for ceremony and large numbers of owners copied the stairs of both the Louvre and the Palais de la Cité in humbler residences for the next 150 years.[156]

Figure 2. Paris, Musée Cluny: Decorative Spiral.
Illustrating the decorated stair from garden to chapel.
Photographer: C. Ryder.

Whiteley describes how stairs were both a meeting and a greeting point for important visitors to the Palais de la Cité and the Louvre and she concludes that was a standard form for the times as part of court ceremonials. The stair at the Louvre was a spiral and Whitely asks why this was so. Was this for sound logical reasons? Was the use of the spiral stair for access to private quarters a new innovation or did its use hark back to earlier times when the spiral stair always led to the private quarters of a lord? The term 'private' may well give the wrong impression, for the lord or king was rarely alone: it is more a question of increasingly restricted access, for as Brooke says about the king's chamber, it 'had little or no privacy in it'.[157]

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[156] Ibid., p. 150.
[157] C. Brooke, The Saxon and Norman Kings, (London, 1967), p. 67.

A rather special type of spiral stair is addressed by both Whiteley[158] and Mesqui,[159] the double spiral stair, and the existence of such leads to consideration of why such a difficult construction was agreed to and made when a single stair giving access to more than one level could be successfully employed.

Figure 3. La Rochelle, Tour Saint-Nicolas.
http://en.structurae.de/structures/data/index.cfm?id=s0014799.

Mesqui describes the double spiral in Tour Saint-Nicolas, La Rochelle, a tower built as part of a complex to guard the entrance to the port (Figure 3). There is some doubt as to its exact date of the construction, with Claude Masse stating 1490,[160] whilst it is generally held that it was built when the defences at La Rochelle were upgraded between 1373 and 1376. The tower, which probably takes its name from the patron saint of mariners, is at the narrow entrance to the port and a chain was slung from it across the river to a second construction on the opposite bank, thus blocking the river until the chain was lowered. The construction on the opposite bank consisted of two towers, '*la petite tour de la chaine*' and '*la grande tour de la chaine*', which controlled the chain.[161] Mesqui describes Tour Saint-Nicolas as having three functions: to defend the passage into the harbour, to act as an attachment for the chain across the river and to give visible affirmation of the

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[158] M. Whiteley, 'The Role and Function of the Interior Double Staircase', English Architecture Public and Private: Essays for Kerry Downes, (London, 1993), pp. 1-9.
[159] Mesqui, 'Une double révolution', pp. 155-190.
[160] Ibid., pp. 156, 164.
[161] Ibid., p. 160, Fig. 5.

power and wealth of the city by imitating a donjon or keep of a lord. However, Mesqui notes that there is some doubt as to whether the third function was the original intention because there is evidence that there were plans, never completed, to build a grand arch across the river between the two towers. Nonetheless, Mesqui notes that La Rochelle was a royal port and that in 1372 the people of the city were given a high level of autonomy, thus supporting the contention that the tower was designed to have a lordly appearance.[162]

Plans (Figure 4) of the three-storey (basement, ground and first floor) Tour Saint-Nicolas[163] clearly show two entrances leading to two clockwise spiral stairs that commence on the ground floor (labelled *niveau* 1 on the plan).[164] One spiral is accessible from just inside the entrance to the tower at ground level, to the right of the main door, and the other from inside the large ground-floor chamber. Both are found in the extreme thickness of the tower walls and intertwine. The one that leads directly from the large, vaulted, octagonal, ground-floor chamber leads to the equally large, vaulted, octagonal, first-floor (top-floor) chamber (labelled *niveau* 2 on the plan); entrances from this stair to the chambers are directly through doorways. The spiral stair that begins just inside and to the right of the main door does give access to the first floor chamber (*niveau* 1) but not directly; the access to the first (top-floor) chamber (*niveau* 2) is through corridors and leads to a chapel that is not directly accessible from the main chamber on the same floor (*niveau* 2). (Note that the current main door may not have been the original main door.) Mesqui continues by describing Tour Saint-Nicolas as having the same structural layout as a donjon or keep (although unusual for an urban structure) and supports his argument by describing the locations of the oven, chimneys and garderobes.[165] Whilst the highest level in the tower is a luxurious residence, the lower levels are designed for functionality: defence, service and public receptions. For a diagrammatic explanation of the flows around Tour Saint-Nicolas see http://www.mesqui.net/Page-d-accueil/indexfran.htm.

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[162] Ibid., p. 187.
[163] Ibid., p. 167, Fig. 12.
[164] Ibid., p. 167, Fig. 12.
[165] Ibid., p. 174.
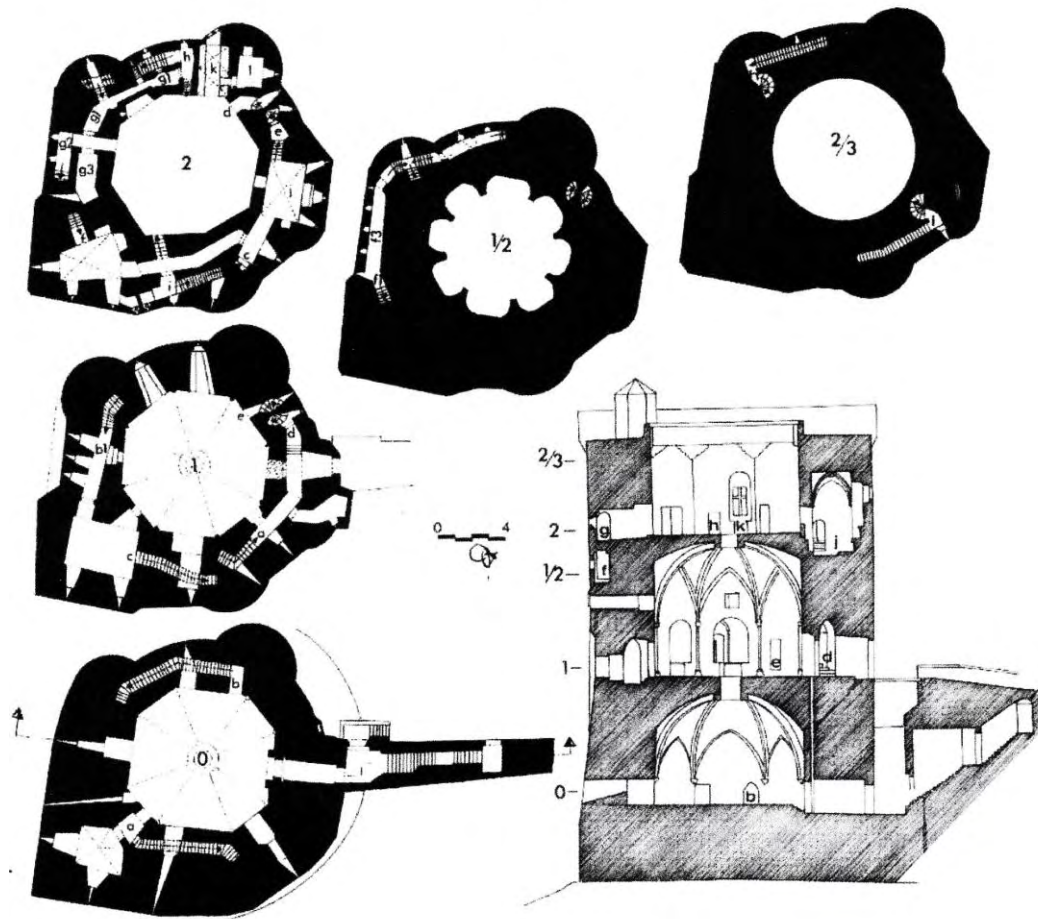
Figure 4. La Rochelle, Tour Saint-Nicolas: Site Plan.[166]

Mesqui describes two main circuits using the stairs – spiral and 'straight' – as well as the corridors and chambers.[167] He concludes that there is a utilitarian and defensive circuit and a 'noble' circuit and that these circuits are distinctly separate. Furthermore, he observes that the double revolution at La Rochelle is rare but not unique, with further examples at Collège des Bernardins, Paris (although less spectacular than La Rochelle), Chambord[168] and Saumur (built *circa* 1356). Mesqui goes on to consider the placing and role of the spiral stair in medieval architecture and considers the presence of two separate spirals at Tour de Vincennes, Paris: one small and one large (in diameter).[169] The small spiral is used for service and accessing all levels, whilst the large spiral accesses only the 'noble' levels (Mesqui notes that this large spiral was not initially planned). Another

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[166] Ibid., p. 167.
[167] Ibid., p. 177, Fig. 18.
[168] Note that Chambord is different in that there is access from the double revolution to all floors from both spirals and that there are links between each spiral at each floor.
[169] Mesqui, 'Une double révolution', p. 186.

example given is the donjon at Château de Largoët-en-Elven, Brittany, with a small and large spiral similar to Tour de Vincennes.

Whiteley develops Mesqui's work on the 'double revolution' in her own examination of the role and structure of the interior double staircase and of double and triple straight stairs. She describes how double staircases 'are first found as an established feature in Europe as early as the fourteenth century'.[170] Later in this work, Whiteley uses the phrase 'double newel spiral' which is a rather inaccurate description in that it indicates that there are two newels when there is only one. Whiteley's first example is of the south-west turret of the west tower of St. Editha's church, Tamworth, Staffordshire. It is a double spiral around a common newel. As seen in Tour Saint-Nicolas, there are separate entrances to each of the two spirals. The staircase from the interior of the church rises to the ringing chamber, belfry and two eastern turrets (all ecclesiastical spaces), whilst the staircase from the exterior gives access to the 'tower terrace, a room on the first level in the north-west turret that bypasses the ringing chamber via a corridor'.[171] Whiteley offers no explanation of the use of this second stair other than it was intended to give a circulation separate to the ecclesiastical one. Other examples offered by Whiteley to support her view that 'many staircases, similar both in type and function to the double newel spiral at Tamworth, were built in western Europe during the late medieval period' are principally found in religious establishments.[172] This does not prove that double spirals were never found in non-ecclesiastical buildings, especially when we consider that these buildings have generally survived less well than medieval ecclesiastical buildings. In a religious context, Whiteley looks at continental examples in Gascony, Paris, Prague and Bavaria, whilst in England she cites examples at the, *circa* 1500, Prior's Lodgings, Much Wenlock, Shropshire, (Figures 6 and 7) and at All Saints Church, Pontefract, West Yorkshire (fifteenth century); she also looks at French non-religious buildings, namely La Châtelet, Paris (second half fourteenth century), Saumur and Tour Saint-Nicolas. In five of these examples, the spirals each have a clear individual role and function. At Saumur one flight of the spiral stair commences at

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[170] Whiteley, 'Double Staircase', p. 1.
[171] Ibid., p. 1.
[172] Ibid., p. 2.

the ground floor and finishes at the 'lookout tower on the roof', whilst the other
flight of the spiral commences at the first floor and joins private apartments over
just two levels of the building; thus it is much shorter than the first. It appears that
one spiral is for 'military' use and more public than the shorter spiral that is for
'private' or residential use.[173] At Collège des Bernardins the double spiral is used
to give separate circulation for church and college. Here one flight starts at the
sacristy and leads to the upper levels in the church, whilst the second acts as the
night stair to link the dormitory to the choir. At La Romieu, near Condom on the
pilgrim route to Santiago de Compostela, there is a curving corridor that links the
two spirals, which Whiteley interprets as enabling the cardinal to transfer from one
spiral to the other when on his way to and from his palace. Whiteley takes her
argument further by stating that the 'use of double spiral staircases was
widespread', citing churches in the Czech Republic (Sázava, Milicin and Kutna
Hora) quoted from M. Radova-Stikova; and minarets in the Middle East (for
example, the Minaret of Jam (Figure 5), Afghanistan,[174] and Emir Taylan's
Mosque, Tripoli, Lebanon (thirteenth to fourteenth century) quoting J. Moline; and
Manar Khwadjeh 'Alam, Isfahan (fourteenth to fifteenth century) quoting M.
Smith. With so little work produced on this topic, it is difficult to counter
Whiteley's case that the double spiral stairs were as prolific as she propounds.

Whiteley continues by quoting from Leonardo da Vinci who states that in military
architecture there should be two flights of stairs: one for the castellan and one for
the mercenaries. Leonardo offers illustrations of the double spiral stair and the
double straight stair, of which Whiteley notes there are numerous examples in
Venice, Italy.[175] In the 1520s at Chambord, a large double spiral was constructed,
not in the main building but in a lesser building in the park; Whiteley wonders if it
was intended for fun, such as playing hide-and-seek. She also describes the double
spiral at south-central France's Rodez Cathedral, where the double spirals are
linked at each of the seven levels, thus creating a large number of different options
for routes to the top.

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[173] Ibid., p. 2.
[174] See http://www.youtube.com/watch?v=2R5cS58k65Y&NR=1for an interior view of the minaret.
[175] Whiteley, 'Double Staircase', p. 3.

Figure 5. Minaret of Jam.
http://antiquity.ac.uk/projgall/thomas/index.html.

Whiteley concludes that in the late medieval period the double spiral stair offers a practical solution to the problem caused by the need to have separate circulations around a building. The benefit of the double spiral stair is that it solves the problem and uses little space. In fact, it uses little more space than a single spiral stair. Beyond the late medieval period the double staircase is more typically, if not almost exclusively, of the straight type and is used for ceremonial or display purposes.[176]

While this work by Whiteley is important to this research, it is unfortunate that she does not bring sufficient examples of double spirals to the work, despite stating that double spirals were common. Fewer than twenty examples across Europe are offered by Whiteley and these are mainly in religious buildings. The double spiral at Chambord appears to have been for pleasure and it is only at Saumur and La Rochelle that there is any military aspect to the double spiral. This does not detract from the later arguments on the use and meaning of the spiral stair but rather adds to them. The double spiral stair will be returned to later.

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[176] Ibid., p. 9.

Figure 6. Wenlock Priory: Prior's House Spiral.
Illustrating how the edge of the step is cut away to facilitate movement on the double spiral stair.
Photographer: C. Ryder.
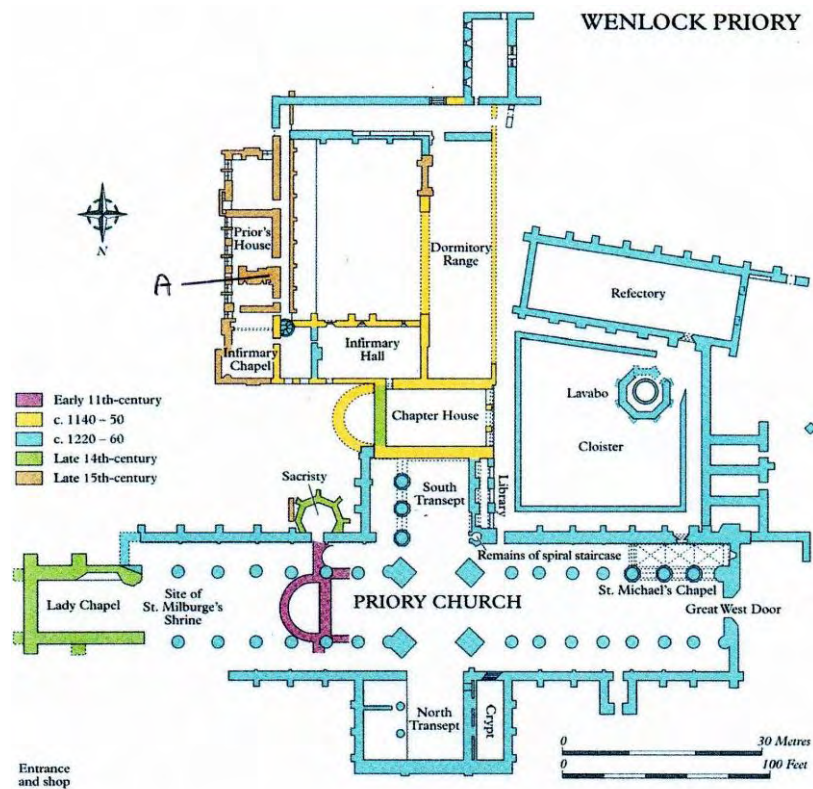
Figure 7. Wenlock Priory: Site Plan.
Illustrating the location of the double spiral stair – marked A on the plan.
Courtesy of English Heritage.

In her work of 1989, Vergnolle discusses passages and stairs of the eleventh century with specific regard to Romanesque churches, whose greater heights posed new problems for architects. Noting that there had been little work in this area, she focuses on how in the eleventh century stairs started to give 'access uniquely to roof space' in some churches.[177] Vergnolle suggest that the eleventh-century architects had to make a conscious choice between the Carolingian visible stair tower and the hidden Roman stair, and gives examples of existing earlier stairs of both types which may have served as models in the eleventh century. This suggests that, in Vergnolle's opinion, medieval spiral stairs have an origin in Carolingian or even Roman architecture. She continues by stating that 'Leaving aside a few early and exceptional experiments (Saint-Bénigne, Dijon), it was only in the last third of the eleventh century that, notably in Normandy but occasionally elsewhere (Abbé de Cluny near Lyon), stairs were finally linked together by real circulatory networks.'[178]

In the paleo-christian era, comments Vergnolle,[179] it was rare to find a stair in a church, though exceptions are found in Italy at San Vitale, Ravenna (*circa* 526 AD), and San Lorenzo, Milan. However, with the arrival of the Carolingian era, towers became of unprecedented importance in the design of the church: towers for bells and for lanterns. Spiral stairs were built in their own small towers – *tourelles* – also known as *cochleae*. The trend was for stone stairs giving access to passages high in the transept and in the crossing tower.

Much earlier, Cook published a work specifically on spirals. In it he describes the need for a newel, essential because the stress of the weight of the stairs would cause them to break, though he suggests that the first overlap of stairs to form a newel may have been an accidental discovery.[180] Spiral stairs were known to the Romans, he claims, but he does not substantiate this with evidence.[181] However, he does give a list of advantages of the spiral stair which are: doors open inwards

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[177] E. Vergnolle, 'Passages muraux et escaliers: premières expériences dans l'architecture du XIe s', Cahiers de civilisation médiévale, 32e année Vol. 1 (1989), pp. 43-60.
[178] Ibid., p. 43.
[179] Ibid., p. 44.
[180] T. A. Cook, Spirals in Nature and Art, (London, 1903), pp. 133-134.
[181] Ibid., p. 137.

at any point on the stair; they are easily lighted; construction is simple and rapid; they are easily repaired; they can be held by a few men; they can join the top and bottom of the building; and their ascent may be made gentle or steep as required.[182]

With very few exceptions, surviving medieval literary and artistic sources throw very little light on spiral stairs in castles. However, one historian who has marshalled literary evidence in a way that is relevant to this subject is Akkari.[183] He notes how the château is a motif in medieval literature but is also at the centre of medieval society. He describes the simple château as having a ground floor, where the services are found, and a *grande salle* on the upper floor and to move between the two it is necessary to go up or down the staircase or *degréz*.[184] Akkari explores the meaning of the term *degréz* and literary motif of stairs through the use of language, some of which is now archaic. Found at the foot of the grand stairs is a *perron*, typically of marble, where the guest would be greeted and then be led up to the great hall. The *perron* is seen symbolically as a place of transit and the stairs from the *perron* would have a symbolic and ostentatious air and be seen as an extension of the great hall.[185] According to Akkari, who draws from Mesqui, the *grande salle* had evolved over the centuries as the major element in all castles. The grand hall is a place for the dispensation of justice (Akkari draws from the 'Death of King Arthur'), a council chamber, a place for diplomatic reception and a banqueting chamber; Akkari suggests it is a private place and yet it appears to be open to the public.

Akkari interprets 'La vie de Saint Alexis' (1040) as describing how Alex leaves his riches behind and undertakes many adventures and chivalrous exploits on his travels and, after many years of this, Alex returns home and asks to live under his father's stairs. This seems a strange request and use of language and it is this that Akkari explores. He concludes that because Alex chooses to live '*desoz les degrés*' he is choosing not to live a noble life.[186] For Akkari, the term *dessus*

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[182] Ibid., p. 138.
[183] H. Akkari, 'Par desuz et par desoz le degréz: fonctions et symboles de l'escalier dans le château au Moyen Age', Château et société castral au Moyen Age: actes du colloque des 7-8-9 mars 1997, (Rouen, 1998), pp. 221-228.
[184] Ibid., p. 221.
[185] Ibid., p. 222.
[186] 'under the stairs'

(above) and *desoz* (below) refer not just to the position relative to the top of the stairs but also to a position in society. The stair is a symbol of double ascension, one earthly and negative, the other spiritual and positive. Thus the stair represented material and spiritual movement and by living below the stair Alex has rejected the life of court, the justice of man and all those elements related to the use of the *grande salle*.[187]

This work by Akkari is useful in linking the physical components of the castle, château or palace to the ideas expressed in the literature of the time. It illustrates that the stair was significant in medieval society and was linked to those who held a high place within that society. This throws light on both the use and meaning of the spiral stair. In similar vein, Southern has also written about the men who 'rise to great places by a winding stair'.[188]

Another historian who has examined the stair in the medieval period, though in this case in a more explicitly military context, is Templer. He notes that the ladder and the stair were carefully considered elements in the arsenal of offence and defence.[189] He describes how the external stair could be pulled up or destroyed (by fire from the defenders) to prevent attack. Ranging more widely and exploring the origins and structure of stairs, he also suggests that the 'straight flight stair' that is common today originates in ancient Egypt and Mesopotamia and that the trade-off on the straight flight stair is the steepness of the gradient and the floor space needed for the stair base.[190] Stairs prepare us for the view that we are to meet by controlling our view of it.[191] He describes how the size of the stair can affect the speed of travel and uses the example of the château of Vaux-le-Vicomte, south-east Paris designed by Le Notre and Le Vau in 1661, where the stair makes use of larger treads and lower risers to force a more leisurely gait (Figure 8); in this case the stairs descended into the garden and thus the lower treads were wider than the upper and the gait would become more leisurely on the descent.[192] Templer states

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[187] Akkari, 'Par desuz', p. 226.
[188] R. W. Southern, Medieval Humanism and other studies, (New York, 1970), p. 214.
[189] J. A. Templer, The Staircase: History and Theories, (Boston, 1994), p.16.
[190] Ibid., p. 19.
[191] Ibid., p. 23.
[192] Ibid., p. 23.

that medieval stairs were seldom hidden from view except for reasons of 'defense or economy'.[193] He describes the symbolic and ritual use of stairs in pre-Columbian architecture as all pervading, with the cities being an accumulation of stairs.[194]

Figure 8. Vaux-le-Comte: Garden Stairs.
Illustrating the steps with larger treads and low risers down to the garden.
http://www.bc.edu/bc_org/avp/cas/fnart/arch/17thc/VauxleVicomte09.jpg.

Viollet-le-Duc, architect and author, writing in France during the mid-nineteenth century, had a strong interest in medieval architecture and was responsible for restoring several medieval structures in France based upon his research and 'interpretation' of medieval architecture. In his restorations, Viollet-le-Duc did not so much pursue the objective of restoring the structures to their original state but of developing them to the perfect style of the medieval building. This was controversial at the time and continues to be so, although over time the changes he made have become accepted because people do not remember how the structure looked previously (for example, the addition of a third tower at Notre Dame de la Cité, Paris). His seminal work is a multi-volume dictionary of French architecture

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[193] Ibid., p. 32.
[194] Ibid., p. 38.

covering the period from the eleventh to the fifteenth centuries.[195] Viollet-le-Duc has more than 50 pages on stairs (*escaliers*), covering wooden and stone stairs; internal and external stairs; straight and spiral stairs; and a number of variations. It is necessary to be careful with the work of Viollet-le-Duc and due consideration must be given as to what is historical fact and what is created in his imagination. Many examples are cited and illustrations support much of his taxonomy, descriptions and definitions, but those without illustration and/or reference to an actual existing example are to be accepted only with care.

Viollet-le-Duc commences his section on *escalier* by stating that the Romans employed straight and spiral stairs but did not consider them to be an architectural statement of style because, quite simply, stairs were a method of communication between different levels.[196] After considering straight external stairs, Viollet-le-Duc directs his attention to spiral stairs and declares that the medieval architect adopted the spiral stair in preference to any other and that the spiral stairs were of different sizes depending upon their purpose. Viollet-le-Duc then lists nine advantages of spiral stairs: enclosed in the construction they leave no weakness; take up a small amount of space; possible to make openings for doors at any point on their circumference; easy to light; fast and easy construction; using the same building technique the steepness can be varied; easy to barricade if attacked; can be built to a great height without affecting the strength of nearby parts of structures; and easy to repair.

Viollet-le-Duc gives a brief history of the development of the spiral stair, stating that the newel of the earliest spiral stairs was made from core stone, and a cradle was used to cement in place the steps that were often of more than one piece of stone, all set within a round tower.[197] The stones for the steps in these early spiral stairs were rarely more than one metre wide, with approximately 80 centimetres of step. However, from the beginning of the thirteenth century, larger pieces of stone were employed in the construction of the spiral stairs, with the newel post incorporated in the stone step (thus accelerating the speed of construction) and the

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[195] E. E. Viollet-le-Duc, <u>Dictionnaire raisonné de l'architecture française du XIe au XVe siècle</u>, (9 vols, Paris, 1854-68).
[196] <u>Ibid.</u>, 'Escalier', para. 1.
[197] <u>Ibid.</u>, 'Escalier', fig. 8.

step chamfered underneath to give more headroom.[198] This fits broadly with Toy, who describes how the early spiral stairs were constructed on vaults around a central newel but, because this was a slow and costly process, from the twelfth century spiral stairs were constructed from steps consisting of a single piece of masonry.[199] However, Viollet-le-Duc then proceeds to state that most spiral stairs rise in a clockwise direction to give the defenders an advantage by having more room to swing their weapons and argues that spiral stairs that rise anticlockwise are designed thus because the defender would not always be higher on the stair.[200] This appears to be seeking a reason to fit a theory. Viollet-le-Duc then moves on from the plain stair to the decorative and complex spiral stair (such as the double revolution stair), the double newel stair, the stair with open work columns such as the spiral at Mainz Cathedral, and the introduction (from the fourteenth century onwards) of the stone handrail as an integral part of the newel. The description of 'escalier' in the dictionary is completed with a section on wooden stairs that flows from plain to elaborate. Viollet-le-Duc's description of stairs is totally focussed on the development of the stair in medieval France in secular and religious buildings and does not reflect its development in the castles of the British Isles.

Defining the Castle

It appears from the literature review that a clear idea of what constitutes a castle has been decided. As early as 1912, Ella Armitage was arguing that castles were private defences to protect a ruling feudal class as opposed to the Saxon *burhs* that were communal defences. Armitage argues that the term *castel* is used to denote the private defended residence of a feudal lord and claims that the word came into the English language after the Norman Conquest.[201] This interpretation by Armitage has influenced castle studies since 1912. However, there has been and is a linked debate on this issue, focused upon how we define a castle and upon whether we can see structures in England before the Conquest which can be

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[198] Ibid., 'Escalier', fig. 9.
[199] Toy, Castles of Great Britain, pp. 254-255.
[200] Research for this thesis demonstrates that this is incorrect.
[201] Armitage, Early Norman Castles, p. 24.

defined as a castle.[202] The first debate revolves around the degree to which militarism and Norman-style feudalism are essential attributes of a castle, and the validity of a brief definition of castles as 'seriously defended residences of a lord' which gained popularity in the second half of the twentieth century; the second debate explores Anglo-Saxon society and buildings to see whether true castles or proto-castles may be found in England in that era, drawing on historical, archaeological, architectural and linguistic evidence.[203]

In the most detailed recent evaluation of these issues, Wheatley takes issue with Armitage's view that a castle was not only a technological introduction to England in 1066 but also a new 'concept'.[204] Wheatley argues that the concept of the castle was not imported into England with Norman feudalism by analysing the use of the term *castle* and its various roots and derivatives in pre-Conquest texts.[205] Wheatley draws upon a range of primary sources to support her point – Orderic Vitalis, the *Anglo-Saxon Chronicle*, the Vulgate Bible and others – and on selected recent publications such as that of Coulson[206] – to come to a conclusion that her judgement is sound when she asserts that 'The castles that came over with the

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[202] B. H. St. J. O'Neil, Castles: an Introduction to the Castles of England and Wales, (London, 1953), p.1; Coulson, Castles in Medieval Society.

[203] The twin debate on the definition of the castle (and, within this, how far that definition needs to be linked to the medieval concept of lordship in general and feudalism in particular) and on whether the origins of the castle can be seen in pre-Conquest England and Wales is also explored: in the now slightly dated but strong and outspoken exchange in the Archaeological Journal between an archaeologist and a historian who certainly linked the castle to feudalism – see B. K. Davison, 'The origins of the castle in England', Archaeological Journal, Vol. 124 (1967), R. A. Brown, 'An historian's approach to the origins of the castle', Archaeological Journal, Vol. 126 (1969) and B. K. Davison, 'The origins of the castle in England: a reply to R. A. Brown', Archaeological Journal, Vol. 126 (1969); in the attempt, launched at the time of the 900th anniversary of the Conquest, archaeologically to investigate a handful of early post-Conquest castles to see if they had any castle-like pre-Conquest antecedents – see A. Saunders, 'Five castle excavations', Archaeological Journal, Vol. 134 (1977), reprinted together in a single volume called Five Castle Excavations (London, 1978); in archaeological work on a small number of Anglo-Saxon elite sites and 'palaces', conveniently summarised within M. Lapidge (ed.), The Blackwell Encyclopaedia of Anglo-Saxon England,(Oxford, 2001); in the interpretation of the remains found at pre-Conquest Goltho, as published in G. Beresford, Goltho, (London, 1987); and in recent suggestions that some of the smaller Anglo-Saxon burhs, in Wessex and elsewhere, may have been intended more as selected defences of the elite and elite families (and thus perhaps sharing key attributes with the definition of a medieval castle) than as general communal defended towns – see R. Lavelle, Fortifications in Wessex, c800-1016, (Oxford, 2003).

[204] Wheatley, Idea of the Castle, p. 23.

[205] Ibid., pp. 15-45.

[206] Coulson, Castles in Medieval Society, p. 45.

Norman Conquest were to some extent innovations, but their novelty was not necessarily their defining concept'.[207]

The French, having brought or returned the word castle to England, replaced it with another in French – *le château*. The concept, however, remains the same and Salch writes that a *château-fort* is '*un edifice fortifié habité par un seigneur*' – a private residence from which the lord would dispense justice and command his people.[208] Salch continues by stating that there is a need to differentiate between *le château-for*t and *la maison-forte* because the *maison-forte* has more limited resources. There is, however, a more significant difference in the use of the masculine for *le château-fort* and the use of the feminine for the *la maison-forte*. The difference in gender would promote the idea that the château was more related to higher lordship and control through its masculine gender. This use of masculine gender when feminine is expected is also reflected in the term *le siege* to mean seat or headquarters when it would be expected to be a feminine noun. Salch describes the château as 'Born in the tenth century, the château disappears or is transformed around 1500 – the end of the Middle Ages.'[209]

Wheatley argues that contemporary definitions of a castle consider the term to apply to 'a collection of architectural elements in relation to one another' rather than a concept.[210] She supports this with quotations from contemporary texts that indicate that 'Any tower within a wall around it is called a castle',[211] and quotes Aelred, the mid-twelfth-century Abbot of Rievaulx, that 'Three things make up a castle, so that it may be strong, and they are a ditch, a wall and a tower.' These descriptions of the term castle appear rather loose to modern academics for they can be applied equally to an Anglo-Saxon burh or an Irish Tower House.

If we take Wheatley's arguments that the earliest Norman castles in England were 'innovations' in the landscape but not necessarily entirely new as a concept,[212] and

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[207] Wheatley, Idea of the Castle, pp. 42-43.
[208] C-L Salch, L'atlas des châteaux forts en France, p. 9.
[209] Ibid., p. 10.
[210] Wheatley, Idea of the Castle, p. 28.
[211] Ibid., p. 29.
[212] Ibid., pp. 42-43.

that the term castle may be used for any structure with a tower and a wall, it puts one at odds with the older interpretations of a castle (such as Armitage's) being the private defended space of a lord. One must consider if there are other signs or features that distinguish a castle from other structures. This thesis argues that the spiral stair is one of those features that help define a castle and distinguish it from other non-religious buildings by signifying the private space of a lord.

As there is some doubt what a castle is, it is worth considering if a castle can be defined by its features. People wish to mimic those above them in a strongly hierarchical society (categorised by Hofstede as high Power-Distance)[213] and given that crenellations, towers, moats, gatehouses, portcullises, arrow slits, gun ports and spiral stairs were associated with high status, some would copy these to give the impression that they had a higher status in the society than they actually held. A fine example of this is at Tower, Nercwys, Flintshire, where an unremarkable two-storey tower house of an insignificant family has had added to it, over the centuries, a stair tower containing a spiral stair, crenellations (so large and heavy that they are putting the building at risk) and arrow slits.

Architectural Symbolism and the Castle

In the medieval period, art and literature were very largely under the control of the elite who acted as patrons. Thus one might expect the arts to reflect the interests, outlooks and contexts of the elite. As many members of the elite owned or occupied castles, we might find imagery and other allusions to castles in surviving literature and art, many of which might make reference to objects from the past. For example, the castle appears in medieval literature as an unassailable stronghold as an allegory linked to the Virgin Mary and in the later medieval period to love.[214] Thus, objects would represent concepts and specific objects become strongly linked to concepts. For example, we have seen in the work of Akkari that stairs are an image relating to the concept of lordship.

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[213] G. Hofstede, Culture's Consequences, Comparing Values, Behaviours, Institutions, and Organizations Across Nations, (Thousand Oaks, CA, 2001).
[214] I. A. Corfis and M. Wolfe (eds), The Medieval Castle Under Siege, (Woodbridge, 1995), p. 200.

Hunt had made the point that 'The castle and what it represented was deeply embedded in the fabric of medieval society. From its inception it was fundamental to the psychology and function of lordship, and lordship touched upon all aspects of medieval life'.[215] Wheatley argues that 'castles invite an interdisciplinary approach' in that 'Castles have for a long time been excluded both from the mainstream of medieval architectural studies and from any ideological or symbolic significance';[216] referring to Rickman's typology of ecclesiastical architecture, she suggests that church and military architecture have been looked at as separate entities, though she appears to be using the term military rather broadly given her previous comments on castles.

Picavet predates Wheatley by some considerable time when he wrote about medieval philosophy and how it and its images were paramount, though they have been supplanted in modern society by logic and science: 'la société moderne remplace la société médiévale. La philosophie rationnelle et scientifique se substitue à la philosophie théologique'.[217] Religion was central to the medieval day: people would pray several times each day and images were used allegorically. Oakshott adds to this in part when he states that 'history is related intimately to the history of ideas as a whole', and he goes on to discuss the use of allegorical figures in art.[218]

The issue of symbolism within medieval society and how it links to architecture was explored in detail by Baldwin Smith in the mid-1950s. He described how rulers of Roman and medieval periods used architecture to support their status and image, stating:

> only by the machinery of scholarship can one begin to demonstrate the
> extent to which the controlling patrons of architecture, the State and the
> Church, succeeded in conveying ides of heavenly powers, universal
> authority, and awe-inspiring grandeur by means of architectural forms that

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[215] Hunt, 'An overview: Castle, Landscape and Community', p. 49.
[216] Wheatley, Idea of the Castle, p. 4.
[217] F. J. Picavet, Esquisse d'une histoire générale et comparée des philosophies médiévales, (Paris, 1907), p. 313.
[218] W. Oakshott, Classical Inspiration in Medieval Art, (London, 1959), p. 15.

we today have come to believe, because of changing interests and repetition, were never anything more than conventions of design.[219]

For Baldwin Smith, symbolism was so embedded into medieval life that it was only necessary for a few contemporary scribes to document it. Although the thin contemporary evidence upon which he builds his case has led to subsequent criticism, he goes on to argue that Romans had their own symbolic traditions regarding architecture, stressing particularly the symbolic nature of gates and noting that Augustus built gates in all his cities. Smith makes a great play of the City Gate with its towers and takes its image back to Mesopotamia and its later absorption into Byzantine architecture, whose gate he describes as a 'monumental baldachin'.[220] Oakshott notes that in the baptistery in Ravenna all the saints are under baldachins.[221] The concept of the arch is then carried forward by Smith as its shape metamorphoses into a colonnade, a blind arch and the cupola and dome, whilst retaining the symbolic meaning of the location of something or someone special. Symbolic features change in this way but they can also endure in active or archaic forms, the latter sometimes causing difficulties once the true meaning has become detached from the symbol. For example, the gorget – a small metal plate hung around the neck that symbolised a knight's armour – continued to be worn by British officers in the Napoleonic Wars.[222] Smith argues that, in particular, rulers would 'most emphatically' revert to the 'prestige of the past when their positions were being challenged'.[223] There is merit in this when considering how Edward I used symbols to stabilise his position in conquered Wales.[224]

With more specific reference to the medieval period, Smith notes that the Carolingians revived 'motifs of Roman architecture for the expression of religious and political ideas' that would support their move to develop a theocratic state.[225]

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[219] E. Baldwin Smith, <u>Architectural Symbolism of Imperial Rome and the Middle Ages</u>, (Princeton, 1956), p. 3.
[220] The baldachin or 'ciborium' is a canopy held above the head of important personages and statues.
[221] Oakshott, <u>Classical Inspiration</u>, p. 11.
[222] L. and F. Funcken, <u>L'uniforme et les armes des soldats du premier empire</u>, (Tournai, 1968), p. 99.
[223] Baldwin Smith, <u>Architectural Symbolism</u>, p. 8.
[224] See Chapter 4.
[225] Oakshott, <u>Classical Inspiration</u>, p. 74.

Thus a structure with towers at each corner would be interpreted as a palace and it is worth considering if it is more than coincidental that the White Tower has such a design. Consideration needs to be given to the upper chamber looking down into the royal chapels in the castles at Conwy, Conwy, and Beaumaris, Anglesey, as this reflects Corvey, Germany, where the Emperor was 'enthroned in the upper gallery so that he could look down into his private chapel' and 'could be seen in majestic elevation against the light of his sun window';[226] this backlighting could give a 'mandorla' effect.[227] Recently Smith has been criticised for stretching the point but he does make a good case – supported by other evidence – that symbolism was hugely important in medieval society and that there was a medieval tendency to hark back to Roman times for images to underpin tenuous positions of authority.

Also of relevance to symbolism is Krautheimer's work that describes the development of religious architecture and some ceremonies that accompany it. He notes that bishops sat in an armchair on a platform – 'tribunal' or 'solium' – and in particular that in 265 Paul of Samosate, bishop of Antioch, sat on 'a lofty throne atop a dais' and had an audience chamber.[228] He also notes that in the early days on Christianity when a meal – agape – was served after the service the room was divided between clergy and laymen – possibly by a rail. These images have echoes in medieval castles.

In this same area but relating to ecclesiastical symbolism, a translation of William Durandus's work, describing church features linked to symbolic meaning, adds to this debate.[229] Durandus was born in Puy-Moisson, Provence, *circa* 1220 and wrote this detailed interpretation of church symbolism *circa* 1286. The translators of Durandus's work stress that not all church features had symbolic meaning in the early days of the church and ask 'we want in this case to be informed when the change took place, from what period architects began to symbolise intentionally, at

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[226] Ibid., pp. 85-86.

[227] This effect my also be generated when a lord is sat between a fire in his great hall and a visitor e.g. Hedingham.

[228] R. Krautheimer, Early Christian and Byzantine Architecture, (London, 4th edn, 1986), p. 36.

[229] J. M. Neale and B. Webb, The symbolism of churches and church ornaments – a translation of the first book of the 'Rationale Divinorum Officiorum' by William Durandus sometime Bishop of Mende, (Leeds, 1843).

what time they forget traditions of church-building, which they must have had, and commenced to carry new principles into practice'.[230] Durandus's work takes the view that all ritual systems are symbolic and claims that the early church buildings are wider in the middle to be symbolic of a boat or ark. Doors are seen as important symbols from the Bible's text 'I am the door' and doors and windows with two parts are interpreted as symbolic of the two parts of Christ's nature, whilst doors and windows with three parts are symbolic of the trinity. Durandus interprets the symbolism of numbers, animals and flowers, with the number eight symbolic of regeneration and explains that this is why fonts have been octagonal since the early days of the Christian church.[231] The fifteen steps to the altar are symbols of Jacob's Ladder and the fifteen virtues.[232] With regard to spiral stairs, they are termed 'circular staircases' and Durandus writes 'the circular staircases, which are imitated from Solomon's Temple, are passages which wind among the walls, and point out the hidden knowledge which they only have, who ascend to celestial things. Concerning the steps, by which ascent is made to the Altar, hereafter.' The difficulty with this work is the level of uncertainty in its portrayal of medieval symbolism, with suggestions that it might have been merely an intellectual exercise, but it does give an insight into the importance of symbolism in medieval society. This is clear and, despite the now accustomed lack of information regarding spiral stairs, this thesis will return to interpret the symbolism of the spiral stair.

Architecture is also a form of symbolism and the manner in which a structure is designed reflects upon its use by the society that constructed it. A common theme in the research into architectural theory is that gateways and thresholds mark a point of transition;[233] Heidegger states that 'a boundary is not that at which something stops but, as the Greeks recognised, the boundary is that from which something begins its presence'.[234] Alexander and his colleagues add to the gateways debate when they describe how religious sites are designed in the form of

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[230] Ibid., p. XXIX.
[231] Ibid., p. LXXXI.
[232] Ibid., p. 49.
[233] C. Alexander, S. Ishikawa and M. Silverstein, A Pattern Language: Towns – Buildings – Construction, Oxford (1977), p. 278.
[234] M. Heidegger, 'Building, Dwelling, Thinking', in N. Leach (ed.), Rethinking Architecture – a reader in cultural theory, (London, 1997), p. 105.

'a series of nested precincts, each marked by a gateway, each one progressively more private and more sacred than the last, the innermost a final sanctum that can only be reached by passing through all the outer ones' and the view through each of these gateways in termed a 'Zen view'.[235] Furthermore, 'unless the spaces in a building are arranged in a sequence which corresponds to their degree of privacy, the visits made by strangers, friends, guests, clients, family will always be a "little awkward"' because the 'movement between rooms is as important as the rooms themselves; and its arrangement has as much effect on social interaction in the rooms, as the interiors of the rooms'.[236] They continue by addressing stairs and state that 'internal staircases reduce the connection between upper storeys and the life of the street to such an extent that they do enormous social damage'[237] and that 'authoritarian societies have internal stairs'.[238] It is these stairs and corridors[239] that join the internal spaces and direct the people in the building in certain pre-determined directions either horizontally or vertically; the spaces and the manner in which they are joined – or not – reflect the culture of the society using the building, for 'a building cannot be a human building unless it is a complex of still smaller buildings or smaller parts which manifest its own internal social facts'.[240]

Eco takes this further when he states that 'an article allows a function and communicates the function to be fulfilled'. He uses an example of a stair to support his case, when he describes how a stair has 'meaning' for there is 'a codified meaning between the form and the function but also a conventional conception of how one fulfils the function with the form';[241] in particular, Gothic architecture had a 'symbolic' dimension, for example the vaulted roofs were seen as symbolic of the 'Celtic forests'.[242] Beyond this, Eco states that the form may have primary and secondary functions and these might undergo 'losses, recoveries and substitutions' over time as much as the 'codes and sub-codes' change meaning.

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[235] Alexander, Ishikawa and Silverstein, A Pattern Language, p. 334.
[236] Ibid., pp. 610, 628.
[237] Ibid., p. 741.
[238] Ibid., p. 742.
[239] 'indoor streets', Ibid., p. 494.
[240] Ibid., p. 469.
[241] U. Eco, 'Functional Sign: the Semiotics of Architecture', in Leach, Rethinking Architecture, p. 183.
[242] Ibid., p. 188.

If one applies these ideas on architectural theory to castles and in particular spiral stairs in castles, it not only places the spiral stair as a means to move from one level in a structure to another but also would indicate that a decision had been made to utilise a stair rather than a ladder; to utilise an internal stair rather than an external stair; and to utilise a spiral stair rather than a straight stair. Some of this may be for practical reasons, it may be argued. For example, the use of a permanent stair rather than a ladder could be for ease of access. However, research shows that the use of a ladder or 'gryce' to move vertically within a structure is associated with the lower levels of medieval society even though there appears to be no legal reason for the absence of stairs. In accepting that some groups in medieval society chose a ladder and others a stair, it would appear that the form of a stair had a meaning in medieval society. It appears to be contrary to architectural theory for this to be for practical purposes alone and Locock supports this by referring to Morris who shows that 'the variation within a single type of structure and settlement can be ascribed almost wholly to the social context of the builders, rather than the supposed structural constraints'.[243] However, this would not explain why some stairs are spiral and others are not and this thesis draws from architectural theory to explain this.

Scott's work, while based on fourth-century Romano-British villas, is relevant here for comparison purposes, even though, as Smith confirmed in her work on Romano-British aisled houses,[244] Romano-British structures did not have spiral stairs.[245] Scott describes how the Roman house was a place where business and private lives took place and the 'design and decoration were the means by which a person was guided through the space within a house, in addition to indicating the social status and aspirations of the house owner';[246] within this, 'corridors would have provided access to most of the rooms, encouraging patterns of movement which avoid entering "unnecessary" spaces',[247] while 'the architectural planning allows the villa owner to manipulate social encounters with large numbers of

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[243] M. Locock (ed.), <u>Meaningful Architecture: Social Interpretations of Buildings</u>, (Aldershot, 1994), p. 10.
[244] J. T. Smith, 'Romano-British Aisled Houses', <u>Archaeological Journal</u>, Vol. 120 (1963), pp. 1-30.
[245] S. Scott, 'Patterns of Movement: Architectural design and Visual Planning in the Romano-British Villa', in Locock, <u>Meaningful Architecture</u>, pp. 86-98.
[246] <u>Ibid</u>., p. 87.
[247] <u>Ibid</u>., p. 90.

people from different social backgrounds'.[248] Through everyday use of the architectural layout, social relations were established and constantly reaffirmed, she argues. This final point is reinforced when she states that 'villas were media through which daily interaction could be controlled, and positions within the social order established and maintained'.[249] This view is upheld by Samson in his work on Carolingian palaces, where he states that 'the structuring of palace space suggests complex orchestration of events and probably a formalisation of ritual royal activities'.[250]

All of this has parallels to medieval castle life, which functioned in a hierarchical society with a pyramid of power held together by personal contact and relationship; thus access to people and space would be hierarchical to support that pyramid. Because space in castles was typically placed vertically, the movement from public to increasingly private space could no longer be by the use of doors and thresholds, as was the case in Minoan halls where double doors separated the spaces.[251] In medieval castles, stairs were used to move vertically and the higher up in the physical structure the more private the space and the more important its occupant. It seems reasonable to propose that the stair acted as a demarcation of the end of one space and the beginning of another in that the stair was a large threshold set vertically – a transition space.

Conclusions

Pulling together all these disparate and at times rather limited sources, this thesis is structured to develop an understanding of where the spiral stair was first employed in buildings and in castles and then explores the evolution, placing, structure, role, significance and meaning of the spiral stair in medieval stone castles. The research is principally based on English and Welsh castles but draws in research from further afield, including castles in Europe, the Middle East and Japan. For the

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[248] Ibid., p. 91.
[249] Ibid., p. 97.
[250] R. Samson, 'Carolingian Palaces and the Poverty of Ideology', in Locock, Meaningful Architecture, pp. 99-131.
[251] L. A. Hitchcock, 'The Minoan Hall System: Writing the Present out of the Past', in Locock, Meaningful Architecture, pp. 86-98.

origins section of the thesis, very wide-ranging but detailed research was undertaken on all continents and across many cultures and centuries to uncover the origins of the spiral stair. It is believed that this has been identified as far as possible from the data available.

The thesis then moves on to discuss diagrammatic methods for describing and interpreting castles. It is only fairly recently that academic work has focussed on methods of analysing spaces in castles rather than simply describing them and the work of Faulkner, Mathieu, Dixon and Richardson has given an insight into the castle both as military and domestic dwelling. There are strengths and weaknesses in all these analytical methods but they were all found wanting for this research and, as a result, the author developed his own method based upon those of Faulkner, Mathieu, Dixon and Richardson. This method is included in this thesis.

In the light of not only the very limited secondary literature specifically on medieval spiral stairs but also the paucity of surviving contemporary primary source material, documentary, artistic, literary and illustrative, this thesis is based very heavily upon extensive new fieldwork. A large enough sample of sites with stairs was required to give a view of the location of stairs in castles. The primary data was collected by measurements and observations at castles and other religious buildings and pre-castle structures. Measurements were taken of the width, outer tread and riser of the stairs, the newel size and shape and the size of doors giving access to the spirals, while records were kept of the floor where the spiral started and ended, the presence of a passage and the form of lighting (see Appendix A).

The selection process to determine which castles to visit was very fraught. Standard statistical sampling techniques – Simple Random Sampling, Systematic Sampling, Stratified Sampling – seemed inappropriate because of the wide diversity of the castles in Europe and the Middle East; their current state of repair; the number and scale of changes made over the centuries; the large range of castle types; and the inclusion of Japanese castles. On grounds of time and cost, a decision was taken to focus the fieldwork on the castles of England and Wales. Eventually, Purposive Sampling, which unlike the methods above is qualitative rather than quantitative and where the sample is selected purposely or deliberately

and not randomly, was the chosen method. As research progressed, opportunities were taken to expand the fieldwork geographically to selected castles and other buildings in Ireland, France, Switzerland, Germany, Belgium, Spain, Greece, Turkey, China, Thailand, Singapore, Hong Kong, Japan, Malaysia and the USA, and thematically to buildings other than castles and outside the medieval period in England and Wales. Questionnaires and telephone interviews were considered but this thesis needed accurate detail, best gathered by the author, and it was therefore decided to undertake personal fieldwork.

This thesis therefore has an English and Welsh focus but in studying the medieval spiral stair in castles it analyses this feature within a much wider geographical and a wider chronological context. It offers conclusions about the origins, role and meaning of the medieval spiral stair and suggests that it had an important part in defining the medieval castle and in demarcating the status of particular spaces within castles.

CHAPTER 2 – THE ORIGINS OF SPIRAL STAIRS

Chapter 1 introduced this thesis on spiral stairs by placing them within the general body of knowledge of castles – castellology – and the problems of research into the subject; by reviewing the limited amount of literature available on the subject and placing this within the context of the literature on the wider subject of castles; and by outlining the research methods employed in this study. This chapter moves the thesis into the first part of the research – the origins of spiral stairs. It addresses the questions 'When were spiral stairs first built?', 'What culture built the first spiral stairs?' and 'In what type of building were spiral stairs first employed?'. The importance of this to the core subject of this thesis, namely the role and meaning of the spiral in medieval castles, is that the origins and earliest/earlier use of a feature or artefact can throw light on its later use and its meaning within later cultures. Thus the origin of spiral stairs and their early employment in pre-castle structures may help us understand the origin, role and meaning of spiral stairs within medieval castles. Moreover, the selection of an earlier feature or artefact by a culture reflects not only its own values but also its view of the earlier culture, again potentially enhancing our understanding of the medieval castle.

There are objects and beliefs in life that always seem to have been with us: yet that cannot be so, for everything must have a beginning and there must always be the first of an object: questions about where and when and who were involved in that first are the questions that intrigue us. Although it may appear that spiral stairs have been with us forever, this cannot be the case. This chapter seeks to discover the time and place when spiral stairs are first constructed. The research is extensive in its breadth and depth and covers a wide geographic area and several millennia, through fieldwork, work on published sources and discussion with academic experts, but it always keeps in mind the adage that the absence of evidence is not evidence of absence. The challenge of such a broad temporal and geographic coverage is how to structure the explanation of its findings. The research, as much as its description, was approached by a vectoring system, which while assessing the vector as a whole may not necessarily involve discussions of all countries and cultures within it, to narrow down the geography and time of the

first known spiral stair. The vectoring system works by checking the whole data set at certain random points and then excluding areas that could not fit the criteria. For example, in terms of search area Antarctica is immediately excluded because it has no evidence of human habitation before the modern era, while in terms of chronology the period after 1500 is immediately excluded because there is plentiful evidence of the use of spiral stairs by 1500. The system then homes in on the remaining geographic areas and cultures pre-1500 and eliminates the possible candidates through research or by implication progressively to reduce the candidates until only one remains. The flow of this chapter is from Asia to the Americas to Africa and then to Europe.

The Far East

The search commences in the Far East where, in 1254, Marco Polo visited China, leading to a considerable exchange of ideas and goods between that country and Europe. By the mid-thirteenth century, spiral stairs were in common use in ecclesiastical and elite buildings throughout much of Europe and in some locations in the Holy Land and Marco Polo would no doubt have seen and used them as well as being aware of their symbolism; in China, he would also have seen watch towers and temples that were introduced during the Han Dynasty (202 BC-220 AD). Considering the existence of these military and religious buildings in medieval China and the possible influence of European architectural ideas from the mid-thirteenth century onwards, this raises the potential for European style spiral stairs being introduced into Chinese buildings during the middle and later medieval period. Accordingly, extensive fieldwork was conducted at a range of Chinese buildings dated from before and more especially after the mid-thirteenth century to see whether this in fact occurred. Fieldwork was conducted at the following sites in China: the Little Goose Pagoda (707-709) and the city walls, Xian (1374-1378); the Forbidden City (1406-1420) and Temple of Heaven (1420), Beijing; the Great Wall at Mutianyu (rebuilt 1569); buildings (traditional, but rebuilt in the sixteenth century) in the Garden of the Humble Administrator, Suzhou; the temples at Chengdu; and the Yellow Crane Tower, Wuhan. At all of these locations there were no signs of spiral stairs: the stairs are either straight external or straight

intramural or almost straight in that they follow the shape of the wall to which they are attached. The closest parallel found was at the Little Goose Pagoda, where a wooden polygonal tower contains an internal wooden staircase attached to the internal walls which follows the pagoda's shape.

During the fieldwork, it became clear that there are problems in dating Chinese structures, particularly extant ones, because documented dates for Chinese buildings are unreliable as a result of the culture's approach to time. For example, the 'thousand year egg' is actually only a few weeks old and this illustrates the culture's positive view about longevity and use of numbers.[252] One particular instance concerned the Yellow Crane Tower, which is constructed in the traditional Chinese style for a lookout tower. Research revealed that the present tower did not date to *circa* 200 AD but was a recent reconstruction more than a kilometre from its original location. The tower also employed concrete and steel in its construction and it has the modern amenity of an electric lift or elevator – but it has no spiral stair. The Chinese dating of structures is based upon the original construction date of the building and ignores the fact that the current structure may be a partial or total rebuild, whereas in Europe a more factual dating of a structure is likely, carefully noting the date of reconstruction. However, the Chinese culture has a tendency to rebuild and renovate its historical structures to the same style and if possible in the same materials, which assisted in the search for spiral stairs.

Hong Kong was chosen for further research because it offers in its small area a rich melange of Chinese cultures, a melting pot of Cantonese, Fukienese, Chiuchow, Fukchow and Hakka, to name a few, as well as access to Anglophones. Although the origins of Hong Kong are in a fishing village founded *circa* 200 BC, its expansion dates to 1841 and the influx of Chinese brought with them their traditional building styles, including the culture of replacing same with same with regard to important structures (Figure 9). The fieldwork covered traditional Chinese style buildings, all of which were constructed post-1800, namely the temples of Tian Tan, Tian Hou Gong, Wan Fo Si and Man Mo (all nineteenth century) and the Po Lin Monastery (1906). The same arguments can be made for

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[252] See E. Lip, <u>Chinese Numbers: Significance, Symbolism and Traditions</u>, (Singapore, 1992), passim.

Singapore, which has eleventh-century origins, where fieldwork was undertaken at the temples of Yi Huang Dian and Tian Fu Gong. The result of this exhaustive fieldwork is that no extant remains of spiral stairs were found in traditional Chinese structures.

Figure 9. Hong Kong, Traditional Style Teahouse.
Illustrating typical wooden construction.
Photographer: C. Ryder.

Failing to find physical evidence, a search of literature was undertaken and uncovered the 1103 work 'Yingzao Fashi', distributed by Emperor Huizong of Song. This work was produced by Li Jie (1065-1110) and originally presented to the Emperor as a set of construction standards and designs to be used when contracting government construction work.[253] Li Jie's document may be favourably compared to Vitruvius's 'ten books', a work on Roman architectural standards, and it has the same intentions for use, being highly detailed and comprehensive. Recent analysis of this work conducted by Li shows that the text contains no mention of spiral stairs, that there are no illustrations specifically depicting them nor do they appear in the background of any sketches.[254]

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[253] Private correspondence by e-mail with Andrew I-Kang Li, July 2007.
[254] Andrew I-Kang Li, 'Algorithmic Architecture in Twelfth-Century China: The *Yingzao Fashi*', in J. F. Rodrigues and K. Williams (eds), <u>Nexus IV: Architecture and Mathematics,</u> (Turin, 2002), pp.

Earlier research into Chinese temples and deities by Lip contains many useful plans and descriptions and in it she suggests that the Chinese temple follows the architectural design of the palace and that the community worship hall or ancestral hall follows the architectural design of the house;[255] she uses as an example China's first Buddhist temple at Bai Ma Si, Luoyang, Henan (*circa* 67 AD). She promotes the idea that from the seventh century, long periods of feudal systems in China inhibited changes in temple design as 'building size, planning, construction, materials and the themes of decorations were determined and executed according to the edicts of the feudal system of the various dynasties', although there were some differences due to the 'varied natural resources, climate and customs' found in such a large country.[256] In summary Lip concludes that

> the architecture of China was generally developed and to some extent constrained by thousands of years of Chinese traditions and practices under its feudal system. Consequently, constructional systems, usage of materials and building techniques did not change very much. Even though feudal lords and rulers changed from one dynasty to the next, the basic concepts of planning and structural system continued. A stereotyped courtyard plan and unique beam-frame structure prevailed in China and exerted influences elsewhere, such as in Japan, Taiwan, Korea, Vietnam, Malaysia and Singapore.[257]

Lip's description and plans of temples do not reveal evidence of spiral stairs.

From the fieldwork, stairs in watch towers were wooden, straight and followed the rectangular sides of the structure to give access to the observation deck, whilst pagodas were generally hollow without any means of ascent. Other than in watch towers and pagodas, medieval Chinese architectural style used space horizontally

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141-150. See also N. S. Steinhardt, Liao Architecture, (Hawaii, 1997), R. N. Walker, Shōkō-ken: A Late Medieval *Daime Sukiya* Style Tea House, (London, 2002).

[255] E. Lip, 'Temples in China', in Ben Farmer (ed.), Companion to Contemporary Architectural Thought, (London, 1993), p. 122.

[256] Ibid., p. 122.

[257] Ibid., p. 122.

and because movement to the upper levels in Chinese buildings would be infrequent, internal stairs were unnecessary. The Chinese tradition of building on a platform of compacted earth was observed and it is these external stairs, straight and of stone, leading to the top of the platform that are the most prevalent (Figure 10). Originally for practical purposes, they later had a ceremonial role and became elaborate, as in the Forbidden City and the Temple of Heaven.

Figure 10. Beijing, Temple of Heaven.
Illustrating the earth platform and straight stairs.
Photographer: C. Ryder.

Moving from the structural remains to Chinese culture, we must pay particular attention to *Fung Shui* (meaning wind-water or heaven-earth); dating to 400 BC it is a system designed to improve life by increasing positive energy (*qi*) that is affected by the positioning of openings and the use of colours and shapes. Too, who is well noted for her work on *Fung Shui*, asserts on the topic of spiral stairs that the Chinese belief in *Fung Shui* considers spiral stairs to be unlucky.[258] However, this broad statement is not considered to be based upon sound academic

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[258] L. Too, Practical Applications of Feng Shui, (Kuala Lumpur, 1994), p. 57. See also S. Skinner, The Living Earth Manual of Feng-Shui, (Singapore, 1983).

research by some Chinese academics.[259] This rather tenuous thought may add a little to explaining why spiral stairs were not used by the Chinese.

In summary, the use of space horizontally, the tradition of wooden structures, the importance of building in traditional style and the influence of *Fung Shui* may well all have prevented the creation and use of the spiral stair in China prior to the spiral stair's emergence in Europe. Through Marco Polo and other explorers, ideas and material culture were transferred between China and Europe and, although in Europe by the thirteenth century spiral stairs were in common use, neither the idea nor the concept of the spiral stair appears to have been transferred. It seems reasonable to conclude that the origins of the spiral stair lie neither in China nor Hong Kong nor Singapore nor in the Chinese culture *per se*.[260]

From Lip's view that Chinese architecture influenced many cultures including Japan and that spiral stairs were not used by the Chinese, it would appear unlikely that spiral stairs would be found in Japanese structures. However, there is a significant difference between China and Japan in that Japan had a feudal system and the elite of that system constructed castles (*shiro*).[261] The development of Japanese castle design has parallels with that of Europe, but is not a complete replication. As in Europe, the Japanese castle was a defended area originally built of earth and wood that in Europe would be termed a ringwork by modern historians,[262] and, over time, the castle increased in size and range of uses; with that, the design and construction materials also changed to incorporate stone as well as wood. As in many places in Europe, towns developed around or near to castles and were called the 'town below' (*jokamachi*), but unlike many European medieval towns, the Japanese towns were without walls. Given the similarities of feudalism and castles, it would seem possible that spiral stairs would be employed in Japan. Despite being protected by a 1929 Act, many castles were destroyed

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[259] Private correspondence by e-mail with Andrew I-Kang Li, July 2007.
[260] See also N. I. Wu, <u>Chinese and Indian Architecture</u>, (London, 1963), F. Xianian, <u>Chinese Architecture</u>, (New Haven, 2002) and G-J. Su, <u>Chinese Architecture Past and Contemporary</u>, (Hong Kong, 1964).
[261] When added to a place name '*shiro*' is changed to '*jo*' e.g. Osaka Castle is '*osaka-jo*'. Prior to the ninth century the character was pronounced '*ki*'.
[262] e.g. Dazaifu, Fukuoka. http://www.jcastle.info/castle/profile/33-Iyo-Matsuyama-Castle (accessed December 2010).

during the Second World War and many seen today are reconstructions, designed to resemble or represent the original structures and so caution must be exercised in undertaking modern fieldwork.

The earliest Japanese castles, some of which date from the end of the first millennium AD, were sited at strategic points along rivers, roads and trade routes but also on high places and some examples of these early structures, such as in the Tōhoku region (north-east Honshu) and on the island of Kyushu, can be found today. The castles at Tōhoku were constructed in an area of continuing high-resistance to feudalism and probably remained largely unchanged because their location in the mountains made it difficult for the lord to develop wealth from agriculture. Across Japan, castles were constructed as regional and local centres of governance and style and construction techniques progressively changed as they took on a more palace-like appearance. The style that is best known today (for example Himeji Castle *circa* 1581 (Figure 11)) was developed in the sixteenth century and is thus far too late to influence the medieval period in Europe under discussion in this thesis. Unlike European castles, where it has been argued that the advent of artillery led to the demise of the castle, in Japan this was not the case for reasons given below. Today, there are approximately 50 extant castles in Japan.[263]

Prior to the Heian period (794-1185), the main threat to Japan was from external invaders,[264] but during the Heian period the threat became internal, with conflict between local war lords exacerbated by a power struggle at the Imperial Court, where alliances between parties frequently changed. In this environment, the samurai warrior class emerged as a significant element of Japanese society and this group of warriors needed to be housed in an elite manner. To accommodate them, castles were developed to increase their size and to contain a larger number of structures in the bailey. By the 1330s, the castles of the Ashikaga Shogunate period were large, complex and served military and non-military functions.

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[263] S. Turnbull, Japanese Castles, AD 250-1540, (Oxford, 2008) and Turnbull, Japanese Castles, 1540-1640, (Oxford, 2003).
[264] The threat from the native population of Tōhoku continued into the Heian period.

The Onin War (1467-1477) heralded 150 years of internal strife when regional officials grabbed the opportunity to take land and power, with many of them eventually becoming '*daimyo*'.[265] To become a *daimyo* it was necessary to hold enough land to produce 10,000 koku of rice, showing that even at this time elite status remained closely tied to landholding.[266] Traditional construction materials and methods continued in use until the mid-sixteenth century, when a response to the introduction of firearms into the country forced change. The Japanese response was to construct a large stone base (*musha-gaeshi*), a complex network of concentric baileys (*maru*) and, for the first time, a keep-like tall central tower (*tenshu*). This may seem rather a flimsy defence against firearms but the Japanese do not appear to have had access to canon at this time, except for a few from foreign ships, and the principal firearm was the harquebus and thus these architectural changes were sufficient to deal with the changed threat. Wood and earth continued to be used for the upper storeys of the keeps, even as they developed more luxurious interiors, up until the demise of the castle with the abolition of the *han* (feudal domain) system in 1871. It is of interest to note that when Kato Yoshiakira was appointed to Aizu north of Tokyo in 1627 he dismantled his five-storey keep and moved it with him.

The categorisation and naming convention for castles in Japan is based upon location. They were either mountain castles (*yamashiro*); or castles of the plains (*hirashiro*); or built on lowland hills (*hirayamashiro*); and some were even built on islands (*ukishiro* that translates as 'floating castle') or by the seashore. Structurally the Japanese castle has similarities to European by being built on a raised mound (sometimes artificial) and having wall walks (*ishi uchi tana*)[267] often built from timber; gate houses and wall towers were also part of the design. The later lower walls of some castles were constructed from un-mortared stone and with a 45 degree slope to give flexibility to the structure during an earthquake. Clearly this approach is quite different from Europe, though aspects of the internal layout have European echoes. The central bailey (*honmaru*) contained the main tower and residence of the *daimyo* but it appears that it was rarely used for a final defensive

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[265] Literally '*big name*'
[266] One koku is approximately 50,000 bushels and considered sufficient to feed one person for one year.
[267] Stone throwing shelf.

stand. A feature of the Japanese keep is that the number of storeys visible externally does not always correspond to the number of storeys internally, for there are often more internal storeys than appear from the outside.[268] The walls, towers and moat signified the militarist aspects of the castle and the ingress to the castle was along circuitous routes overlooked by the defenders on the *ishi uchi tana*.

Figure 11. Himeji Castle Keep.
Illustrating traditional *tenshu* architectural style.
Photographer: E. Obershaw.

Fieldwork was conducted at the following Japanese sites: the world's oldest surviving temple, Horiyu-ji (607) and Todai-ji temple, Nara (743-1709); the Heian temples at Kyoto of Sanjusangendo (1164, but present building 1266), Kinkaku-ji (1397-1408) that was originally Yoshimitsu, Third Shogun of Ashikaga's palace, Ginkaku-ji (1460-1483), Kiyomizu-dera (798, but current buildings from 1600s); and Osaka Castle (1496, developed 1620-1868 and renovated 1931-1935). The Meiji Jingu, Tokyo was built in traditional style in 1912 and rebuilt in 1958 after its destruction during the Second World War. Also of interest and viewed externally is Japan's tallest wooden tower, a 57 metre high pagoda in the Todai-ji

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[268] This is quite the opposite of the European keep, where there were often fewer internal storeys than apparently appeared externally e.g. Hedingham.

Temple, Nara (Edo period, dating to post-1603), and although public access is restricted, it is understood that spiral stairs are not to be found in the pagoda.

Figure 12. Kochi Castle: Interior Stair.
Illustrating typical *tenshu* interior stairs.
Photographer: E. Obershaw.

Published sources on Japanese structures, such as that of Nitschke, contain no examples of spiral stairs in the text or illustrations.[269] However, although entry to temples in Japan is relatively easy, castles have more restricted access. Only a small number of castles were visited and despite no spiral stairs being observed, the sample was too small to draw firm conclusions. However, Obershaw, who has undertaken fieldwork at most Japanese castles, confirmed that spiral stairs had not been found during his visits (Figure 12).[270] It is unlikely that more research would discover spiral stairs in medieval or earlier Japanese structures. In the castle keeps, the Japanese used space vertically, accessed by straight wooden stairs, but in most other structures space was used horizontally in similar fashion to the Chinese; in this horizontal space, there was a hierarchy of seating, with the highest status seat situated by the *tokonuma*[271] and *chigaidana*[272] close to the *tsukeshoin.*[273] Historically, Japanese buildings are primarily of wood and, although some buildings are high, most are usually single storey and thus there is little need for

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[269] G. Nitschke, <u>From Shinto to Ando</u>, (London, 1993). See also K. Nishi and K. Hozumi, <u>What is Japanese Architecture? A survey of traditional Japanese architecture</u>, (Tokyo, 1985).
[270] Private correspondence with E. Obershaw June 2010.
[271] Alcove containing a valuable piece of art.
[272] Set of shelves with objects on display.
[273] Small study for the lord, set at right-angles to the main room.

regular access to the upper parts of the buildings and little need for stairs of any kind. Despite appearing to have developed separately, there are many parallels between Japan and Europe with regard to the reasons for the development of feudalism, the military traditions, the castle and the hierarchical use of space, but the Japanese did not employ spiral stairs.

Further research elsewhere in Asia was undertaken in Thailand (Siam) at the remains of historical buildings in the modern capital of Bangkok: including the eighteenth-century Grand Palace; Wat Arun (Temple of Dawn) constructed post-1350; and Wat Pho (Temple of the Reclining Buddha) re-constructed in the eighteenth century. Fieldwork was also conducted at Ayutthaya, which from 1350 to 1767 was the cosmopolitan capital of Siam, receptive to outside influences by welcoming Chinese, Vietnamese, Indians, Japanese and Persians to settle outside the city walls and trade with the indigenous population. Ayutthaya's fourteenth-century palace is ruinous down to its brick base, whilst its Phisai Sanlalak Hall, reconstructed in the mid-nineteenth century, is a four-storey building in traditional style. Further north still, in Chang Mai, the late fourteenth-century temple Wat Phrathat is still in use. However, fieldwork did not discover any trace of spiral stairs in these buildings, whether ruinous or complete.[274]

In Indonesia, the museum of traditional Indonesian houses, Taman Mini, is a good source of research. From its comprehensive set of buildings, it is soon obvious that most traditional Indonesian buildings were single storey (often on stilts) accessed by a wooden ladder or straight wooden steps. Fieldwork was undertaken at indigenous buildings at Lake Toba, Sumatra, where the remains of some stone walls and a stone sacrificial stone were found and at the Sultan's Palace, Medan, Sumatra, but there were no signs of spiral stairs at either site. On the island of Sulawasi, fieldwork was undertaken at the Toraja's stone cliff galleries, overlooking the tribal villages, housing wooden effigies of dead relatives; again no signs of spiral stairs were found, despite plentiful evidence of an ability to work stone. These cultures also have a tendency to build in traditional style and it is

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[274] See H. W. Woodward, The Art and Architecture of Thailand: from prehistoric times through the thirteenth century, (Leiden, 2003), K. Dohring, Buddhist Stupa Architecture of Thailand, (Bangkok, 2000) and Prince Subhadradis Diskul, History of the Temple of the Emerald Buddha, (Bangkok, 1980).

highly probable that if the spiral stair was used, it would be found somewhere, including in the post-medieval buildings of Thailand or Indonesia, but the story repeats itself – the use of space horizontally for living and, where high structures are employed, access to the higher levels is infrequent and does not create a need for internal stairs.[275]

Figure 13. Varanasi, Dhamek Stupa.
https://www.cia.gov/library/publications/the-world-
factbook/photo_gallery/in/photo_gallery_A1_in_1.html

Significant structures in the Far East are principally religious and many are for the followers of the Buddhist religion that developed its own style of buildings and had a significant and wide impact upon south-east Asia. If the concept of a spiral stair existed in any of the countries and cultures where Buddhism was and is practised, it is probable that the spiral stair would be incorporated into the remaining original or reconstructed high stupas and temples because these follow a traditional style. However, no spiral stairs were found despite significant fieldwork and sketches and plans, such as that of the Dhamek Stupa (249 BC) near

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[275] B. Dawson and J. Gillow, The Traditional Architecture of Indonesia, (London, 1994), P. Nas (ed.), The Past in the Present: Architecture in Indonesia, (Rotterdam, 2007) and J. Kis-Jovak, Banua Torajah, (Amsterdam, 1998).

Varanasi, Uttar Pradesh, India (Figure 13) and other stupas, failed to reveal the presence of spiral stairs in these structures.[276]

In summary, the extensive search for spiral stairs in south-east Asia reveals that the dominance of traditional building styles for important structures such as temples has prevailed since at least the medieval period and that these styles follow a typical pattern of mainly single-storey wooden structures, using internal space horizontally and as such that internal stairs are not required. In the high structures, such as stupas and some temples, access to the higher levels is infrequent and again stairs are unnecessary. External stairs, where they exist, are straight. In the rare cases where there are two or more storeys that require frequently access, such as in Japanese castles, spiral stairs are not used, only straight wooden ones. It is also worth noting that the spiral stair is rarely found in modern-day south-east Asia. In short, there is compelling evidence that spiral stairs did not originate from south-east Asia.

Australia and Antarctica were briefly studied via literature and very limited fieldwork. We may safely discount Antarctica as there was no permanent human settlement there in the pre-modern age. In Australia, the ethnic structures are those of the nomadic aboriginals, who created temporary structures. There is no history or evidence of structures that might require a stair of any type and the presence of a stone spiral stair is highly implausible.

The Americas

Generally across North America, there is little evidence of stone structures from the pre-medieval period. However, an exception is the dwellings of the Arizona-based Sinagua tribe, who were at the peak of their power and culture from the seventh to the fifteenth centuries. They constructed adobe pueblos close to the Verde River where some of their dwellings are found on an elevated, wide cliff ledge. They are frequently of two or more storeys, thus requiring a method to facilitate movement between them. Access to the ledge where the dwellings are

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[276] See P. Khanjanusthiti, <u>Buddhist Architecture</u>, (York, 1996) and L. Chandra (ed.), <u>Stupa: Art, Architecture and Symbolism</u>, (New Delhi, 1988).

sited appears to have been via ropes set in the cliff-top directly above the dwellings. Fieldwork had to be limited to observation from the cliff-foot, as the dwellings themselves are highly protected, but there were no signs of stairs of any kind (Figure 14). Moreover, a search of sketches and plans was unable to uncover any trace of spiral stairs in either the Sinagua structures or any other North American structures of this period or earlier. The origin of the spiral stair appears not to lie in North America.[277]
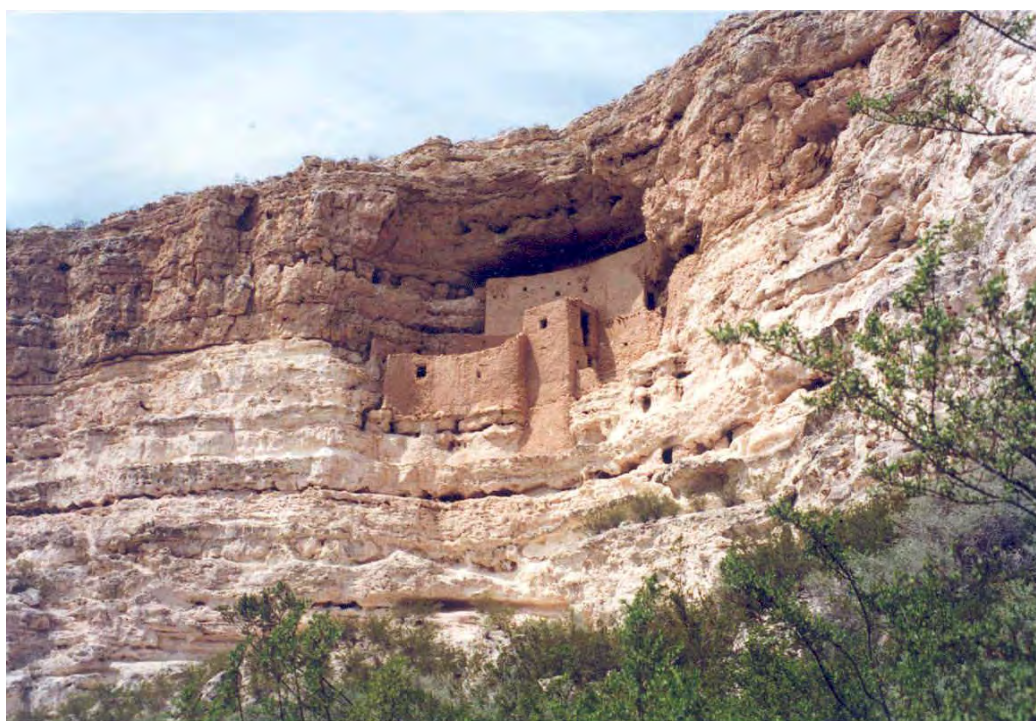
Figure 14. Rio Verde, Sinagua Cliff Dwelling.
Photographer: C. Ryder

Further south than the Sinagua and originating in Yucatan, the Mayan culture existed between 2600 BC and 1200 AD, at the end of which the northern Maya were absorbed into the Toltec culture, whilst the southern Maya abandoned their cities *circa* 900 AD. The Maya were at their strongest *circa* 250 AD and ruled a vast area that today covers southern Mexico, Guatemala, northern Belize and western Honduras. Extant remains of Mayan stone buildings have been dated between 50 BC and 900 AD and, as in many cultures, these structures are principally state and religious buildings, where external, wide, straight stairs are

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[277] See W. De Boer, <u>Archaeological Explorations in Northern Arizona</u>, (Flushing, 1976), M. Tagg, <u>Archaeological Excavations at … A Sinagua Settlement</u>, (Arizona, 1985) and K. Kamp, <u>Surviving Adversity The Sinagua of Lizard Man Village</u>, (Salt Lake City, 1999).

employed and were probably ceremonial. Perhaps the most notable stair in Mayan structures is the Hieroglyphic Stair at Copan, in west Honduras, first described by Juan Galindo in 1834 and surviving still, which is wide, straight and suitable for ceremonial activity. Sketches and plans of other Mayan structures do not reveal signs of spiral stairs.[278]

Figure 15. Palenque, Temple of the Inscriptions.
Illustrating straight stair.
http://www.sacredsites.com/americas/mexico/palenque.html.

At Palenque in the Mexican state of Chiapas, there are the Mayan remains of a number of large and varied structures, including a palace, elite residences, temples, a court for playing a Mesoamerican ball game, a bridge, an aqueduct and a four-storey tower.[279] Here the Temple of the Inscriptions (Figure 15) is a flat-topped pyramid 60 metres wide, 42.5 metres deep and 27.2 metres high and the temple on the top measures 25.5 metres wide, 10.5 metres deep and 11.4 metres high. This very large, stone structure, constructed of individual blocks weighing up to 15 tonnes and clearly requiring considerable physical effort to move them into their position, includes stone carving of an outstanding quality. The size of this and of similar structures with their component parts, plus the quality of the stone carving, make clear that the Maya had great skill in working in stone and would have been able to build spiral stairs if they had the concept or the requirement for them.

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[278] X. Hernandez, Mayan Town Through History, (Wayland, 1992), E. Andrews, A Revision of Some Dates on the Hieroglyphic Stairway, Copan, Honduras, (New Orleans, 1958), G. Kubler, The Art and Architecture of Ancient America: The Mexican, Maya and Andean Peoples, (New Haven, 3rd edn, 1993) and D. Potter, Maya Architecture of the Central Yucatan Peninsular, Mexico, (New Orleans, 1977).
[279] The word is derived from Spanish for 'fortification' and replaced the Mayan 'Otolum' meaning 'land with strong houses'. This is reputed to have been a translation in 1567 by the priest Pedro Lorenzo de la Nada.

Although no fieldwork has been undertaken to confirm it, it appears from published sources that there is no evidence of spiral stairs either in the Palenque tower or elsewhere on this site or in other Mayan structures.

In the thirteenth century, as the Mayan culture declined, the Aztecs settled in the Mexican Basin, founding in 1325 the city state of Tenochtitlan (modern Mexico City), built on an island accessed by causeways and covering between 8 and 13.5 square kilometres. By the fifteenth century, the Aztecs held an Americas Empire second only in size to the Incas. On arrival in 1519, the Spanish found a highly sophisticated culture and one of the largest cities in the world. The city was more or less symmetrical and highly planned into districts and sub-districts, with a supporting network of roads and canals. At the centre were the public buildings, temples, schools and the ceremonial centre that was located within a 300 square metre walled enclosure. The sophistication was such that there were latrines in homes and public ones near main thoroughfares, whilst the two-storey Palace of Montezuma contained fresh-water and salt-water aquariums, an aviary and a zoo. Access to the palace was up straight stairs linking the ground and first floors. Plans and drawings indicate that many major buildings had external straight stairs, for example, Templo Mayor with its twin straight stairs (Figure 16). No fieldwork was undertaken by the author but from published sources there is no evidence that this highly sophisticated culture employed spiral stairs.[280]

Figure 16. Mexico City, Templo Mayor: Remains.
The ruins of Building A and the Eagle Building illustrating straight stairs.
http://www.sacred-destinations.com/mexico/mexico-city-templo-mayor.

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[280] C. Phillips, The Art and Architecture of the Aztec and Maya, (London, 2007).

Figure 17. Machu Picchu.
http://whc.unesco.org/en/list/274.

Further south again and slightly overlapping the Maya in time, the Inca culture existed from *circa* 1200 AD to 1535, when Conquistadors defeated them. By 1535, the Incas ruled an area of South America from Quito in Ecuador south to the Rio Maule, Chile and east into the Andes. Like the Maya, the Inca was an advanced and sophisticated society with high moral values and a state religion that overlaid but did not displace the religions of the groups that the Inca conquered. Many structures created by the Inca are religious in nature, using ashlar – polished stone blocks – that in most instances were mortarless.[281] The important city of Machu Picchu, Peru, (Figure 17) is divided into three major districts, the Sacred, the Popular, and the Priests and Nobility District, that have over one hundred extant stone structures distributed across them. The Temple of the Sun is in the Sacred District, the houses for the workers are in the Popular District and the houses for the nobility, which are defined for use by colour and shape, are in the Priests and Nobility District.[282] A large number of public and even small private

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[281] Like Japan, Peru is a seismic area and it appears that the solution of using no mortar came about separately in both cultures. There are also similarities in walls which are much more sloped than in European structures.
[282] The residence of the 'wise person' (Amautas) defined by red walls and the residences of the 'princesses' (Nustas) by trapezoidal rooms.

dwellings were stone built, and examples of clay models of the cities exist that were probably used in similar vein to architects' models today. Even though the Inca did not employ the wheel, there are roads linking the cities, and irrigation systems serving the cities and farms, demonstrating advanced engineering. No fieldwork was conducted at Inca sites by the author, but the published sources again indicate that this civilisation made no use of spiral stairs: straight stairs predominate. Here is a very advanced society with great skill in stone working that has employed its intelligence to deal with the problem of local seismic activity – like Japan – but that did not use the spiral stair. Neither did the Inca adopt the spiral stair for use after the Spanish conquest, even though by the 1500s spiral stairs were commonly found across Europe.[283]

The Americas, in summary, had some advanced and sophisticated cultures that were socially and religiously organised and that had developed advanced skills in stone constructions. The structures were produced by cultures which held sway over large areas of the Americas for long periods of time pre-dating and overlapping with the European medieval period and which were frequently large religious, ceremonial and palatial in use. Yet none of these cultures developed or adopted the spiral stair that was in use in Europe at the time. Overall, the Inca, Aztec and Mayan cultures built in stone and to a high standard but the steps and stairs they made are not spiral ones.

Africa

Moving on to Africa, sub-Saharan Africa appears not to have a great legacy of stone building. However, there are in modern-day Zimbabwe a number of ruined stone structures (mainly in small groups) spread over a radius of one hundred or more miles (Figure 18). These stone structures are dated to the European medieval period. The largest of these remains of granite buildings was first recorded by Europeans in 1531 by the Portuguese, Pegado, who described a fortress with a tower about 22 metres high. In 1867, it was 'rediscovered' by Renders, a local

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[283] G. Gasparini and L. Margolies, Inca Architecture, (Bloomington, 1980), V. Lee, A Study of Function, Form and Method in Inca Architecture, (Wilson, 1988) and A. Kendall, Aspects of Inca Architecture, (Oxford, 1985).

hunter, on a hunting trip who made others aware of it and it was later visited by Philips, who gave a talk on the sites to the Royal Geographic Society in 1890; he described their thick mortarless outer walls and narrow entrance passages that were dominated by positions for defenders. In 1891, Bent visited the area and undertook some archaeological research. As a result, he named the largest ruins 'Great Zimbabwe' to distinguish it from the smaller, widespread stone structures that he named 'Zimbabwe'.[284] The structures are made from small granite stones (sometimes in a herringbone pattern) and, other than for steps, mortar is not used to bind the stones together. He also describes some steps as being made from powdered granite cement.[285] The Great Zimbabwe has been described as consisting of three main areas: the Hill Complex interpreted as a temple; the Valley Complex as living quarters for the citizens; and the Great Enclosure for the king's residence;[286] the three together may have housed some eighteen thousand people. The existence of the Zimbabwe is related to the smelting of gold at the site; the survival of shards of Chinese pottery, Arabian coins and small artefacts give rise to the belief that Zimbabwe was a centre of international trade, based upon the export of gold.

Figure 18. Great Zimbabwe Landscape.
Giving an impression of the extent of the site.
Photographer: Dr. C. Santorelli.

In the nineteenth century, many people doubted that these stone structures were built by indigenous African people and their construction was variously attributed to Phoenicians or Arabs by Bent , whose previous archaeological experience was in

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[284] A local Shona dialect interprets 'Zimbabwe' as 'great or big house built of stone boulders'.
[285] J. T. Bent, The Ruined Cities of Mashonaland, (London, 1892), p. 215.
[286] Making it the largest sub-Saharan structure.

Greece and Asia Minor, whilst Maunch favoured a theory that the ruins resembled the Palace of the Queen of Sheba in Jerusalem.[287] In any event, it was discounted that the structures could have been built by sub-Saharan Africans, until in 1929 Caton-Thompson suggested that the ruins were originally built by sub-Saharan Africans. [288]

Figure 19. Great Zimbabwe: Entrance.
http://members.fortunecity.com/madzimbabwe/Buildings/Indigenous/Great%20Zimbabwe/G
Zim-09.html.

It is now accepted that these ruins are the remnants of a culture that flourished between 1000 and 1600 AD,[289] and that these particular significant stone structures were built around the thirteenth century and were abandoned in the fifteenth century for reasons that are unclear. In the ruins are, amongst other structures, 10 metre high circular stone walls (Figure 19) and conical towers.[290] The most likely location for spiral stairs (if they were used) would be in these towers. However, Bent's research comes to the conclusion that the towers were always solid.[291] No fieldwork has been undertaken here by the author and all information is from published sources and discussions with an academic colleague who has visited the

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[287] The New York Times, 18 Dec. 1892, 'Vast Ruins in South Africa - The Ruined Cities of Mashonaland'.
[288] The New York Times, 20 Oct. 1929, 'Ascribes Zimbabwe to African Bantus'.
[289] Although carbon dating indicates building commenced *circa* 1200 AD.
[290] http://exploringafricamatrix.msu.edu/students/curriculum/m7a/activity4 (accessed December 2010).
[291] Bent, Mashonaland, p. 115.

site. There is no indication that spiral stairs were used at this site or more generally by this sub-Saharan culture that archaeological evidence shows had trading contact with the non-African medieval world.[292]

The Egyptian culture flourished much earlier than this and much further to the north for a period of three thousand years, during which time it experienced a considerable influx of ideas from the 'known world' as well as having the opportunity to export its own ideas. As such, there should be a high probability that, if spiral stairs were in use elsewhere in the 'known world' between 3100 BC and 332 BC (when conquered by the Greek, Alexander), spiral stairs would be used or mentioned in Egyptian constructions or art.

Extensive fieldwork was undertaken at a number of sites in Egypt between Dendera and Abu Simbel. These were: The Valley of the Kings; the Valley of the Queens; the tombs of the artisans at Quornah; the Temple of Seti and the Temple of Ramses II, Abydos; the temple to Hathor at Dendera; the Temple at Luxor (Figure 20); the Temple of Amon-Ra; Queen Hatshepsut's Temple; the Temple at Esna; the Temple of Horus, Edfu; the Greco-Roman Temple at Kom Ombo; the Temple of Khnum, Aswan; the Temple of Ramses II and the Temple of Queen Nefertari, Abu Simbel; and several Nilometers. The common characteristic of these sites is that they were official buildings – tombs, temples and Nilometers. Vernacular buildings were single-storey mud-brick structures and therefore unlikely to have a spiral stair or indeed any stair.[293] From all the sites where observations were made, the only two locations where stairs were found were at the Temple at Dendera and at one of the Nilometers. The Temple at Dendera is dedicated to the cow-god, Hathor, with construction commencing *circa* 332 BC and completed by the Romans some 250 years later. Dendera is a rare example of a temple with an intact roof and has a wide, straight stair to the roof, suitable for processions. The Nilometer studied consisted of large stone-lined hole in the

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[292] See also D. Beach, 'Cognitive Archaeology and imaginary history at Great Zimbabwe', Current Anthropology, Vol. 39 (1998), S. Chirikure and I. Pikirayi, 'Inside and outside the dry stone walls: revisiting the material culture of Great Zimbabwe', Antiquity, Vol. 82 (2008) and G. Pwiti, 'Trade and economies in southern Africa: the archaeological evidence', Zambezia, Vol. 18 (1991).
[293] See A. Dieter, The encyclopaedia of ancient Egyptian architecture, (New York, 2003) and S. Clarke, Ancient Egyptian Construction and Architecture, (New York, 1990).

ground close to the Nile, with a stone measuring pillar set at the centre and an outer revetting wall – although there are other designs.[294] They were used to measure the height of the Nile's floodwater; the height was then used to calculate tax due, based on the principle that the deeper the floodwaters the more land would be covered in fertile silt and the greater the harvest would be. The stone stair in the Nilometer followed the inner face of the revetting wall, accessing the large central space in which the water could rise and the depth of the water could be measured.

Figure 20. Luxor: Temple Gate.
Photographer: C. Ryder.

Fieldwork at five tombs in the Valley of the Kings revealed that, although there were differences in floor level between the tomb entrance and the floors of the other chambers and passages, each tomb can be interpreted as a single storey structure excavated into the hillside. All ingress and egress was along straight corridors with gently sloping floors or with long steps with a very low riser. Indeed, because of the size of the sarcophagus it would be nigh on impossible to

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[294] See G. Woods, <u>Science in Ancient Egypt</u>, (New York, 1998) for a basic explanation and R. Said, <u>The River Nile Geology, Hydrology and Utilization</u>, (Oxford, 1993) for a technical explanation with statistics of medieval floods.

move it into the chamber up or down a spiral stair. There was no evidence of spiral stairs in any of the tombs and the same is true of all the temples at Karnak, Essna, Edfu, Kom Ombo, Philae and Abu Simbel. Drawings and plans of the above structures and other Egyptian structures including the Pyramids show no signs of spiral stairs either.[295]

Research was also undertaken into hieroglyphics used between 3000 BC and 396 AD. No doubt, the script developed and expanded during this long period as new and different concepts needed to be added to the language of Thoth. However, the spiral shape is almost totally absent in the hieroglyphs. The closest a hieroglyph comes to containing a spiral shape is with the number one-hundred and the fraction one-thirty-second, showing a curved stroke but not a true spiral. The Hieratic script – used for everyday purposes – was developed in parallel to hieroglyphic script and it, too, has no true spirals. However, the Hieratic script comes close with the letter 'h'. Around 660 BC, the Demotic script was developed and it too has no true spirals. In his book on Egyptian art, covering the period 3100 to 320 BC, Aldred not once mentions spirals and not one of the two hundred or so illustrations depicts a spiral.[296] The spiral shape appears to be little used in Egyptian writing and art and from the buildings, art and literature there is no evidence to support the idea that spiral stairs were being used by the Egyptians.[297]

In summary, this extensive research suggests that in cultures across the whole of Africa, stone buildings are rare and where they are found there is no sign of the spiral stair. Again the buildings are generally constructed on a single level and thus there is no need for frequent movement between multiple storeys. Where there is a need for stairs to facilitate movement between levels, these stairs are straight.

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[295] K. R. Weeks (ed.), <u>KV 5 A Preliminary Report on the Excavations of the Tomb of Rameses II in the Valley of the Kings</u>, (Cairo, revised edn, 2006), pp. 2-3, M. Zecchi, <u>Abu Simbel Aswan and the Nubian Temples</u>, (Vercelli, 2004) and J. Romer, <u>The Great Pyramid: ancient Egypt revisited</u>, (Cambridge, 2007).

[296] C. Aldred, <u>Egyptian Art</u>, (London, 1980).

[297] See also J. B. Bury, S. A. Cook and F. E. Adcock (eds), <u>Cambridge Ancient History Vol. 1 Egypt and Babylonia to 1580 B. C.</u>, (Cambridge, 1923); Bury, Cook and Adcock (eds), <u>Cambridge Ancient History Vol. 2 Egyptian and Hittite Empires</u>, (Cambridge, 1924); and D. Wengrow, <u>The Archaeology of Early Egypt, Social Transformation in North-East Africa 10,000 to 2650 B. C.</u>, (Cambridge, 2006).

The Ancient Mediterranean

With lack of evidence of spiral stairs from other continents and cultures both earlier than and contemporaneous with European medieval cultures, the research now comes closer to home, to Europe. The research starts with the Greek period because of the influence of Greek culture that remains with Europeans to this day. The influence of the Greeks extended far and wide in the ancient world, and thus they could influence others, as they in turn could be influenced by the cultures with which they interacted.

Figure 21. Rhodes, Lindos, Temple of Athena: Stair.
Illustrating typical architectural form of the third century BC stair.
http://www.thais.it/architettura/greca/schede/scm_00192_uk.htm.

The ancient Greek culture is generally held to have existed between 1100 and 146 BC when, after the Battle of Corinth, the Romans conquered Greece. Generally considered to be the seminal culture that influenced European cultures, it also impacted upon south-west Asia and North Africa. This influence extended to language, politics, art forms, educational systems, philosophy, the sciences and architecture. Through the 'Dark Ages' Greek works were held and protected by the Moslem world and it is the custodianship and employment of this knowledge that led to the 'Moslem Golden Age' between the seventh and sixteenth centuries.

The early western European universities owe a great deal to the Moslems for retaining and sharing the Greek knowledge base. With such a profound influence and such a broad fund of knowledge, it is reasonable to expect that if the Greeks invented or used the spiral stair, it would appear somewhere in this fund of Greek knowledge.

Most extant remains of Greek structures are temples, public buildings (as in other cultures) and theatres. More recent archaeological research has discovered the remains of some private structures, including the private houses near Areios Pagos, Athens.[298] With the Greeks creating settlements and colonies along the whole of the Mediterranean Sea and the Black Sea, fieldwork presented a huge problem in terms of logistics and costs. In the event, fieldwork was undertaken at only a select group of Greek sites. Moreover, because work on published sources found no reference to spiral stairs, it seemed reasonable to limit the fieldwork to some key sites: the Acropolis, Athens; the archaeological site of the city of Ephesus, Turkey; the Acropolis and remains of Thassos City on the island of Thassos; and the Acropolis, *stadion* and Temple of Athena (Figure 21) on Rhodes. The Athens Acropolis, with the Parthenon as its most famous building, covers an area of approximately 3 hectares and contains some twenty structures. It is a site that has been developed since the sixth millennium BC and from 460 to 430 BC saw the rebuilding of most of the temples by Pericles. Thassos was colonised by the Greeks around the seventh century BC, exploiting its mineral wealth. There are a number of sites both close to the sea and inland where the Thassos Acropolis is located. The city site at Ephesus is a Greek settlement where the Temple of Artemis is located, considered to be one of the Seven Wonders of the World. The city was destroyed in 401 AD and much of the current city is relatively recent, in that it was rebuilt firstly by Emperor Constantine I and again after an earthquake in 614 and as such the extant remains are not truly Greek. The Acropolis, Rhodes, was unlike most others in that it was not a defended Acropolis and its several temples, a theatre, stadium, gymnasium and library date from the third to the

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[298] See L. C. Nevett, <u>Domestic Space in Classical Antiquity</u>, (Cambridge, 2010) for a view of Greco-Roman domestic dwellings.

second century BC. However, despite the extensive fieldwork undertaken at all these sites, none produced evidence of spiral stairs. All the stairs were straight.[299]

Figure 22. Athens, Stoa of Attalos.
Illustrating straight stair at the end of the building.
Photographer: A. Babili.

Illustrations and building plans of other Greek sites were employed but few two-storey structures were discovered.[300] Two exceptions are Areios Pagos and the Stoa of Attalos (Figure 22), both in Athens. Plans of Areios Pagos illustrate some private two-storey dwellings, probably belonging to craftsmen and merchants, that are set around a central courtyard with the lower walls of stone and the upper walls of wood plastered with lime mortar and a terracotta tiled roof; the upper storey is accessed by an external straight stair.[301] The Stoa of Attalos, constructed in 150 BC, is a two-storey market that was restored in the 1950s and is now a museum; the upper storey of this building is accessed by a straight stair.[302]

A very puzzling site are the ruins of the Greek settlement at Selinunte, on the coast south-west of Palermo, which was established in the middle of the seventh century

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[299] See W. B. Dinsmoor, <u>The Architecture of Ancient Greece An Account of its Historical Development</u>, (Cheshire, CT, 1973) and I. Sutton, <u>Western Architecture: From Ancient Greece to the Present</u>, (New York, 1999).

[300] See R. F. Rhodes, <u>Architecture and Meaning on the Athenian Acropolis</u>, (Cambridge, 1995).

[301] http://www.athensinfoguide.com/wtsagora8.htm#Top (accessed December 2010) and see D. M. Lewis and J. Boardman (eds), <u>The Cambridge Ancient History V The Fifth Century B. C.</u>, (Cambridge, 1992), p. 202.

[302] J. K. Darling, <u>Architecture of Greece</u>, (Westport, CT, 2004), pp. 162-164.

BC and which survived, though not always under Greek rule, through to its abandonment in the third century BC. The site was then never intensively reoccupied, though parts of it were reused for military purposes in the eighteenth and nineteenth centuries. In the course of the nineteenth and twentieth centuries, the site was also subjected to formal and informal archaeological excavation, in the course of which some parts of the site were reconstructed. A late nineteenth-century sketch of part of the site purports to show either one or two spiral stairs in one of the temples, generally identified as Temple A (Figure 23). One spiral is shown contained within blocks of stone, cut straight on the outside but forming a perfect circle internally and within that space appear to be shown the lowest two steps. The other spiral is shown merely as lines on the drawing, with no indication of any physical remains; its location appears to be shown merely on the assumption that the internal temple structure would be symmetrical and there would therefore be a second spiral to match that for which some remains were apparently in situ at the end of the nineteenth century. The accuracy of the plan is uncertain and there must be some suspicion that these remains, if they truly were there, might be the consequence of modern reuse and reconstruction. The two lower steps appear to be constructed each from a single piece of masonry that includes a small diameter newel. This style of step is more usually dated to the twelfth century onwards and these medieval steps are made from much smaller pieces of stone, approximately one-third the size of the steps at shown at Selinunte. Uniquely, the front edge of the treads is shown as rounded style never found in later spiral stairs. This sketch is therefore puzzling and its veracity is in doubt, as it seems to run against the overwhelming evidence that the ancient Greeks did not use spiral stairs and shows a form of spiral stairs never seen again.[303]

In summary, it seems safe to conclude that although the Greeks used the spiral as a form of decoration, particularly on the Ionic capital – the Ionic volute – that reappeared during a revival of the form in the Roman period, there is no reliable evidence that the Greeks used a spiral stair in their buildings or that the origins of the spiral stair are to be found in this period and this culture.

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[303] See J. Whitley, The Archaeology of Ancient Greece, (Cambridge, 2007).
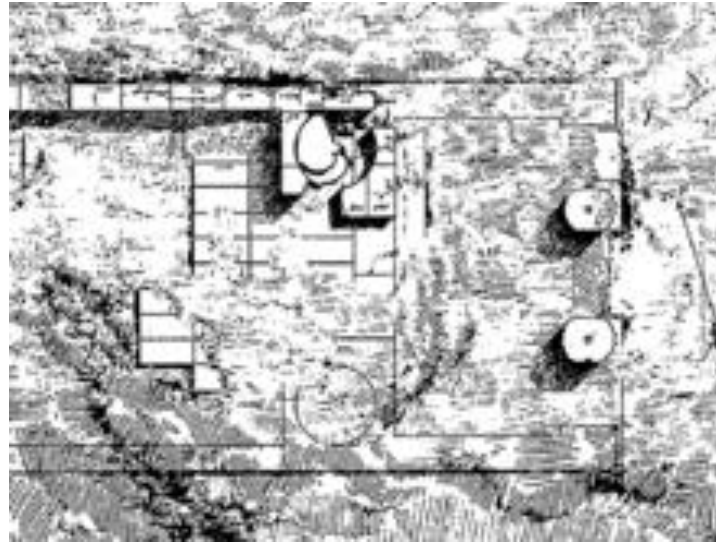
Figure 23. Selinunte: Temple A Ground Plan.
Illustrating purported spiral stair in top centre of the sketch.
http://en.wikipedia.org/wiki/Selinunte#CITEREFBeckmann2002.

The lengthy duration of the Roman Empire saw considerable building projects undertaken across Europe and North Africa and the Romans gained a reputation for being great builders, with a tremendous long-term influence upon architecture that persists to this day. Fieldwork was undertaken at a number of British sites, including Chester, Manchester, Wroxeter, Burgh Castle and much of Hadrian's Wall, as well as at Rome, Ostia, Verona, Paris, Trier in Germany and Nyon, Switzerland. Not every site had remains of stairs because of the nature of the structure or the poor condition of the remains. However, when present, the typical form of stair found at these sites is wide and straight, though it is worth noting that these structures tended to be municipal buildings and not private dwellings. However, fieldwork was also undertaken at remains of Roman private dwellings extant in Britain at Bignor and Fishbourne, West Sussex, Chedworth, Gloucestershire, and Lullingstone, Kent. Fieldwork at these sites did not reveal any sign of spiral stairs.

Plans, diagrams and illustrations in published sources, for example Smith, with almost 50 plans of Roman buildings,[304] and McKay, with more than 70 illustrations and more than 70 figures,[305] do not reveal signs of any spiral stairs.

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[304] Smith, 'Romano-British Aisled Houses', pp. 1-30.
[305] G. McKay, Houses, Villas and Palaces in the Roman World, (London, 1975). See also G. de la Bédoyère, The Buildings of Roman Britain, (London, 1991) and S. Hales, The Roman House and Social Identity, (Cambridge, 2003).

Further work was undertaken on Roman written sources, especially the work of Vitruvius (Marcus Vitruvius Pollio), who documented the Roman approach to building in his De Architectura, now known as The Ten Books on Architecture, completed around 15 BC.[306] This was intended as a set of standards for public buildings for utilitarian purposes across the Roman Empire and it gives an excellent insight into the form of those buildings; the preface defines the work as intended to enable Caesar 'to have personal knowledge of the quality both of existing buildings and of those which are yet to be constructed'.[307] In the third book of his comprehensive view on Roman architecture, Vitruvius enters into great detail regarding stairs, describing how steps should be of an odd number so that (according to Vitruvius and no doubt Roman form) the right foot (which should be the first on the first step) is the first to the top, and he gives measurements to be used, for example that the riser should be between 23 to 25 cm and the width of the step 45 to 60 cm.[308] From this we can see the great detail found in Vitruvius's work and because spiral stairs are not mentioned in any of the ten books, it is reasonable to assume that either spiral stairs were not a concept in the mind of the Roman mainstream architects and builders or that spiral stairs were not employed in 'state' buildings down to this time. The only part of Vitruvius's work where any form of spiral is covered is the spiral decoration in the Greek Ionic velute, which did enjoy a brief revival during the Roman period, and Vitruvius is noted for having developed a geometric process for creating the form.[309]

It appears, therefore, that despite using the concept of the spiral for decoration, the Romans did not commonly use spiral stairs, or at least that they were not in use before Vitruvius's work at the end of the first century BC. Although some Roman buildings were multi-storey by Vitruvius's time, for example city gates and amphitheatres, straight stairs were used in their construction and many other Roman buildings were single-storey. We will return to the later Roman period, the age of the Roman Empire, in due course.

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[306] Vitruvius, (trans. M. H. Morgan), The Ten Books on Architecture, (Oxford, 1914).
[307] Ibid., Book I, Preface.
[308] Ibid., Book 3 part IV. 4.
[309] D. Andrey and M. Galli, 'Geometric Methods of the 1500's for Laying Out the Ionic Volute', Nexus Network Journal, Vol. 6 (2004).

The Celtic World

Remaining in Europe, research was undertaken into the long-surviving and widespread Celtic culture. In the south, Alvarez-Sanchis analyses the Celtic Vettones of central Iberia, an advanced stratified society of the fourth and third centuries BC, with an aristocratic elite who owned horses and had splendid weapons leading a warrior group less splendidly armed.[310] He describes the Celtic remains at La Mesa de Miranda, Chamartin de la Sierra, Spain, that show signs of large square towers from the second century BC protecting the *oppidum*.[311] He also analyses the nearby *oppidum* of Ulaca, that he suggests is probably the most important *oppidum* in the region, where there is a straight double stair hewn from the rock leading to a platform defined as a sanctuary.[312] The typical house, of this hierarchical and structured society, is described as single-storey, with three or four rooms with specific uses such as bedrooms and with the most important room adjacent to the entrance. The lower part of the walls of the house was constructed from local granite and, although some houses appear to have been built entirely of stone, more typically the upper part of the walls were of clay or adobe; the roof was of wood, mud and straw.[313] Despite the common approach to dwellings, each settlement appears to have a distinctive set of basket-work and corded patterns that Alvarez-Sanchis imagines extended to textile designs and possibly weapon decoration, distinguishing one *oppidum* from another.[314] Around the second half of the first century AD, the Vetton lifestyle was changed by the Romans, who imposed their own methods and, by introducing roads, led to the decline of many Vetton *oppida*, although some did become Roman cities, for example Salamanca.

Celtic culture and buildings can be found across central and western Europe.[315] For example, at Trisov, Czech Republic, there survive the ruins of large second-century BC *oppidum*, surrounded by large walls and with a high tower. Published

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[310] J. R. Alvarez-Sanchis, 'Oppida and Celtic Society in Western Spain', Journal of Interdisciplinary Celtic Studies, Vol. 6 (2005), pp. 255-285.
[311] Ibid., p. 278.
[312] Ibid., p. 263.
[313] Ibid., p. 277.
[314] Ibid., p. 269.
[315] See J. Davies, The Celts, (London, 2002).

sources on this impressive and excavated site again fail to show the presence of spiral stairs.[316]

Figure 24. Shetland, Mousa Broch.
Giving an indication of the style and height of the structure.
Photographer: Islandhopper.

Turning to Celtic Britain, there has been considerable work on the hollow-walled, mortar-free stone brochs of the Shetlands, fixed by carbon-dating to between 800 and 400 BC.[317] Armit suggests that they have 'superficial resemblance to later stone castles and tower-houses' and remarks that the name 'broch' has its roots in the Norse 'borg' meaning fortress.[318] Probably the finest example of a broch that remains intact is the twelve-metre high Mousa Broch, Shetland (Figure 24), although there are lesser examples at Dun Carloway on Lewis and Dun Telve on Glenelg. However, none of these brochs has a spiral stair and all the stairs are intramural, following the shape of the broch wall (Figure 25), although Armit draws attention to the fact that there is little sign of wear on the stairs.[319]

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[316] http://www.ckrumlov.cz/uk/histor/t_keoptr.htm, (accessed December 2010).
[317] E. W. MacKie, 'Gurness and Midhowe Brochs in Orkney: some problems of misinterpretation', Archaeological Journal, Vol. 151 (1994), p. 105.
[318] I. Armit, Towers in the North: the Brochs of Scotland, (Stroud, 2003), p. 112.
[319] Ibid., p. 61.

Figure 25. Shetland, Mousa Broch: Internal Stairs.
Illustrating the form of the internal stair.
Photographer: R. Harding.

In Ireland there is an example of the Celtic culture's skills in masonry at the stone road alongside the 'Black Ditch', Co. Mayo, whose construction has been dated to be between 100 BC and 149 AD, again revealing the sophisticated use of stone by Celtic societies.[320] Remains of later Celtic buildings (*circa* 600 AD) can be found on the island of Skellig Michael, Co. Kerry. Here on the island, six beehive-shaped huts, two oratories and terraces, some 200 metres above sea-level, do not contain spiral stairs and the 600 steps up from the sea are as straight as the contours of the land permit.[321] However, there is another far more striking feature of the early built environment of Ireland where one might expect to find a spiral stair, namely the Irish Round Tower.

With their tall and slender design (Figure 26), Irish Round Towers would seem to be an ideal structure in which spiral stairs would suit the building. The origins of

[320] Anon, 'Ancient stone road found in Ireland', Science, Vol. 279 (1998), p. 1459.
[321] D. Langmead and C. Garnaut, Encyclopedia of Architectural and Engineering Feats, (Santa Barbara, CA, 2001), pp. 309-310.

the Irish Round Tower are uncertain, though O'Keeffe dates them to *circa* 950 AD.[322] It known that Armenians were in Ireland *circa* 900 and that Christianity was very strong there, but the cultural origin of the towers remains a mystery. O'Keeffe considers that they were not an Irish invention but probably were from Carolingian or Ottonian roots. The reasons for the creation of these towers are enigmatic, though O'Keeffe offers five possible explanations: bell ringing; protection; storage of relics; look out points – despite the few windows; and as monastic status symbols.[323] All these explanations appear on the surface plausible, though they have merits and demerits: in the eighth and ninth centuries bells would be rung by hand and these is little evidence of structural arrangement to ring large bells in buildings of this type; the tower would afford protection for limited numbers within it, but with little potential for active defence; the towers certainly contain space which could be used to store relics and O'Keeffe goes on to suggest that during ceremonies presenting these relics for view, royal patrons may have appeared in the curious upper doorways which many of these towers possess, allowing them 'to play Charlemagne by positioning themselves in the upper opening, as the great emperor did in the great church in Aachen';[324] despite the limited fenestration, they might provide lookout points; it is perfectly plausible that they could serve as monastic status symbols; and beyond O'Keeffe's five themes, they may have served more generally as a marker on the landscape. Whatever the origins and initial purposes of the Irish Round Tower, it certainly had 'structural and functional integrity' and 'must have had implications in the Middle Ages for how it was understood in and of itself'.[325] However, although some of the assumed origins and functions of these towers would have necessitated internal vertical movement, they contained no permanent upper storey elite accommodation and so they do not employ spirals but were instead serviced by wooden stairs and ladders. In his specialist study of these towers, Johnson has firmly concluded that there are no stone stairs in Irish Round Towers and that access up the tower was by a straight ladder.[326] The one possible exception to this is the round tower at St.

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[322] T. O'Keeffe, Ireland's Round Towers, Buildings, Rituals and Landscapes of the Early Irish Church, (Stroud, 2004), p. 19.

[323] Ibid., pp. 93-95.

[324] Ibid., p. 112.

[325] Ibid., p. 124.

[326] D. Johnson, private correspondence by e-mail, August 2007.

Mary's Abbey, Ferns, Co. Wexford that has a stone spiral stair. However, this tower is not generally accepted as a true Irish Round Tower because although the upper part of the tower is round, the lower part is square and attached to the church, thus not following the standard design of a freestanding Irish Round Tower.

Figure 26. Co. Mayo, Meelick Round Tower.
Illustrating the typical design of the Irish Round Tower.
http://www.roundtowers.org.

Other than a number of Celtic crosses that have survived, for example Penmon, Anglesey, Nevern, Pembrokeshire, and Stonegrave, North Yorkshire, together with several Celtic fonts, there are few substantial, researchable traces of significant Celtic buildings surviving in England, because many Celtic buildings were destroyed by fire or replaced by later builders. For example, the late seventh-century minster at Ripon, North Yorkshire, was almost completely destroyed in 950 and after being rebuilt, it was destroyed again by the Normans in 1069 and replaced by their own structure. These late Celtic ecclesiastical buildings are described as outstanding pieces of architecture by contemporary writers such as Edius Stephanus in 'Life of Wilfred',[327] but without sufficient extant remains, it is unclear if spiral stairs were part of this architectural form.

In summary, despite the wide geographic spread of Celtic culture, its long duration and its development from small random stone buildings to significant ecclesiastical ones, there is no extant architectural evidence of the spiral stair.

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[327] Stalley, Early Medieval Architecture, p. 34.

The Islamic World

Turning to Moslem or Arab architecture as a source, Mohammed (571-632 AD) through his teachings, especially after his death, influenced a wide geographic area of Europe, Asia and Africa. The Mosque of Mohammed, Medina, Saudi Arabia dates from 623, with the wall's lower level of stone and higher of brick.[328] Initially the followers of Islam were called to prayer from the roof of the religious house, accessed by a simple ladder, and then from the seventh century onwards from a minaret, containing an internal stair. From the fieldwork in Asia and Morocco, and from some published sources and plans, there appears to be no use of spiral stairs in these structures; instead the internal minaret stairs were generally attached to the internal wall and followed its line, leaving a central void. However, some examples of later minarets and mosques do appear to have employed true spiral stairs with a central newel; examples of these are the minaret at Hagia Sophia, Istanbul, (Figure 27) dating after 1453,[329] and an excavated site at Qabr Abu Dulaf, in the Abassid city of Samarra, Iraq, where 'the remains of a small cylindrical minaret….ascended by a spiral staircase of which six steps remain' were found, dating from the ninth century.[330] Many other Moslem or Arab buildings from the latter half of the first millennium are single-storey and so contain no stairs, but where there is an upper storey or the need to access an elevated position, straight stairs are used as far as possible and other stairs followed the line of the external wall. Picavet suggests that from the eighth century the Arabs and the peoples they conquered benefited from all aspects of commerce, medicine, the arts and architecture and that the Arabs were therefore highly influential in building styles across Europe.[331] From the lack of spiral stairs in Moslem and Arab lands and in areas directly influenced by them, it appears that this culture did not need and did not employ a spiral stair for movement within its buildings.[332]

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[328] G. T. Rivoira, Moslem Architecture: its Origins and Development, (New York, 1975), p. 2.
[329] W. Emerson and R. L. van Nice, 'Hagia Sophia and the First Minaret Erected after the Conquest of Constantinople', American Journal of Archaeology, Vol. 54 (1950), pp. 28-40.
[330] T. al-Janabi, 'Islamic archaeology in Iraq : recent excavations at Samarra', World Archaeology, Vol. 14 (1983), pp. 305-327.
[331] Picavet, histoire générale et comparée, p. 28.
[332] See also A. Petersen, Dictionary of Islamic Architecture, (London, 1996), H. Stierlin, Islam from Baghdad to Cordoba: Early Architecture from the 7th to the 13th Century, (Cologne, 2002) and G. Mitchell (ed.), Architecture of the Islamic World, (London, 1978).

Figure 27. Istanbul, Hagia Sophia.
General view illustrating the location of the minarets.
http://www.turizm.net/turkey/history/hagiasophia.html.

The Anglo-Saxons

Closing down the geographical range, surviving above-ground early Saxon remains are scarce, probably because of a number of factors: the open-air nature of the society; the use of non-permanent building materials; and the deliberate destruction of some of the pre-Christian architecture following the conversion to Christianity.[333] Steane suggest that the centre of power in Saxon England lay in the Minsters and 'villae regiae' and that the Saxon royal palaces were temporary structures.[334] Churches, or at least parts of churches, for example St. John the Baptist, Edlingham, Northumberland, has Saxon remains below the Norman church, and these comprise the main surviving structures of the Anglo-Saxon period; the two Kerrs list some 400 or so churches which have some Anglo-Saxon fabric.[335] Nash Ford states that 'almost 85% of the Saxon architecture which can be seen today dates from the period after 950, when many churches, devastated by

[333] C. Arnold, An Archaeology of the Early Anglo-Saxon Kingdoms, (London, 2nd edn, 1997), C. Hills, 'Early Historic Britain' in J. Hunter and I. Ralston (eds), The Archaeology of Britain, (London, 1999) and M. Welch, Anglo-Saxon England, (London, 1992).
[334] J. M. Steane, The Archaeology of Power, (Stroud, 2001), p. 37.
[335] M. and N. Kerr, Anglo-Saxon Architecture, (Princes Risborough, 1983). See also R. Cowie and L. Blackmore, Early and Middle Saxon Rural Settlements in the London Region, (London, 2008).

Viking raids, were rebuilt in more peaceful times'.[336] However, many ecclesiastical buildings were replaced in the Norman style, for by 1086 the heads of most religious houses in England were Normans or their supporters and so Norman culture prevailed.

Figure 28. East Lexham: a 'very probably Anglo-Saxon' Tower.
Illustrating the tower and its windows.
Photographer: C. Ryder.

William of Malmesbury describes how the church at Hexham, Northumberland, (built *circa* 672-678) has 'various winding passages with spiral stairs leading up and down'.[337] Sadly, we cannot be entirely certain whether Malmesbury is accurately describing the seventh-century church or is in fact giving an account of the church as it existed in his own day; the early church no longer survives because it was sacked in 876 and 'nothing is known of the church until 1113'.[338] The oldest parts of the main church buildings now found at Hexham date to the eleventh century.[339] Fahy, a medieval Latin graduate and custodian of Castle

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[336] http://www.britannia.com/church/saxchurch/index.html (accessed December 2010).
[337] *Gesta Pontificum*, Rolls Series, 255.
[338] N. Pevsner, The Buildings of England: Northumberland, (London, 1957).
[339] However, below both Hexham and Ripon churches there survive outstanding Anglo-Saxon crypts, dating to the late seventh century, accessed by straight or turning but not spiral stairs. As

Rising, Norfolk, has ventured an opinion on the original text, that the words may describe the style of rhetoric used in convincing relevant parties to undertake the building rather than the true physical nature of the building.[340]
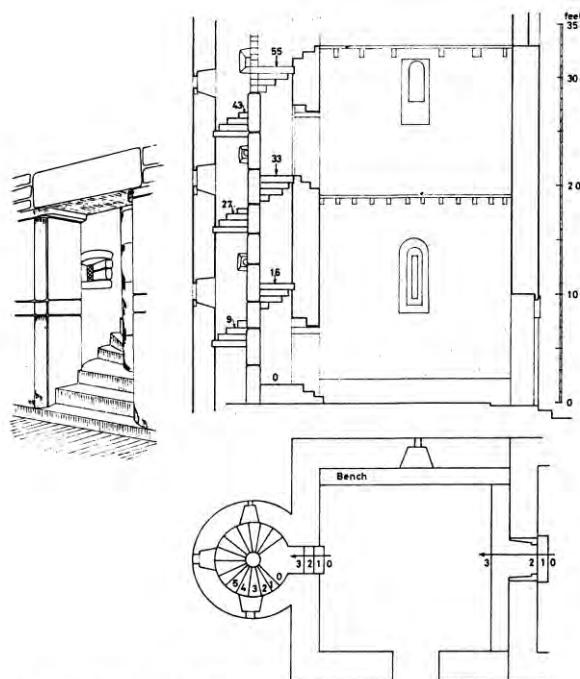
Fig. 17. Hough-on-the-Hill: All Saints' church. Plan and elevation of the Anglo-Saxon tower, with a perspective drawing of the doorway to the first-floor chamber

Figure 29. Hough-on-the-Hill: Taylor's Drawing.
Illustrating the spiral stair location and design.
From H. M. Taylor (1974).

Fieldwork in a small number of churches in East Anglia and the East Midlands has pointed to the possible existence of Anglo-Saxon spiral stairs within Anglo-Saxon towers. Some of the churches in this region have fully rounded towers and thus are examples of the so-called round-towered churches of East Anglia, raising the possibility that they may have contained spiral stairs. These churches present some difficulties as recent work on round-towered churches has suggested that they generally or exclusively are post-Conquest in date and thus are not Anglo-Saxon at

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they are not spirals, these stairs do not play an important role in the argument and analysis presented in this thesis, but is worth noting that they are probably the earliest examples of Anglo-Saxon staircases surviving in England. See the entries for 'Hexham' and 'Ripon' in Lapidge, The Blackwell Encyclopaedia of Anglo-Saxon England and R. Hall, 'Observations in Ripon Cathedral Crypt', Yorkshire Archaeological Journal, Vol. 65 (1993).
[340] Private correspondence by e-mail, June 2006.

all.[341] For example, the round-towered church of St. Mary, Roughton, Norfolk, could have been built in the decades either side of the Conquest and Pevsner refers to it as a 'late Saxon or Saxo-Norman round tower', though he goes on to argue that on stylistic grounds the tower probably does date from before the Norman Conquest.[342] Similarly, Pevsner confidently describes the tower of St. Mary, Bessingham, Norfolk, as an 'Anglo-Saxon round tower' and the round tower of St. Andrew, East Lexham, Norfolk (Figure 28), as 'very probably Anglo-Saxon'.[343] So there are indications that the towers of some of these round-towered churches probably are very late Anglo-Saxon. However, at none of these sites is there clear evidence that these Anglo-Saxon round towers contained a spiral stair.

The debate about the dating of the round-towered churches of East Anglia is in any case irrelevant to evidence of spiral stairs within pre-Conquest churches. At a small number of sites in Eastern England Anglo-Saxon churches with fairly standard square towers also possess small semi-circular or cylindrical stair turrets containing spiral stairs attached to the main tower. Hough-on-the-Hill, Lincolnshire (Figure 29), and Broughton, Brixworth (Figure 30) and Brigstock, Northamptonshire, are special in that they possess these stair turrets at the western end of the church. The stairs in all these turrets are constructed in a common form, with the treads separate from the newel. This is quite different from the spiral stairs in later castles, where the newel and tread are of one piece of masonry. The dating of these church stairs then becomes important, because they are probably the earliest extant spiral stairs in England, but unfortunately there is some debate about their dating. According to Randall, Brixworth was possibly altered in late Saxon times and the height of the tower was raised by the Normans; he even suggests that the tower could have been of Romano-British construction.[344] On the other hand, Pevsner feels that 'the church is predominantly Anglo-Saxon to this day', dates the West Tower with its staircase turret to 'probably [the] tenth century' and concludes that the tower and its western stair attachment belong to

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[341] S. Heywood, 'The Round Towers of East Anglia', in J. Blair (ed.), Minsters and Parish Churches: The Local Church in Transition 950-1200, (Oxford, 1988).
[342] Pevsner and Wilson, Buildings of England: Norfolk I, p. 650.
[343] Ibid., p. 387; N. Pevsner and B. Wilson, The Buildings of England: Norfolk II: North West and South, (London, 2nd edn, 2002), p. 321.
[344] G. Randall, The English Parish Church, (London, 1982), p. 13.

'the later Saxon period'.[345] Taylor and Taylor analysed Hough-on-the-Hill,[346] and Taylor has suggested that the 'independent newel of [the] stairway renders pre-Norman dating likely'.[347] Moreover, although the stringcourse is not continuous from the main square tower to the projecting semi-circular stair turret, Pevsner too is confident that tower and turret are 'of one build' and that both are Anglo-Saxon.[348] Pevsner is also sure that the main square towers and the projecting staircase turrets at Broughton and Brigstock are contemporary and that they are Anglo-Saxon in date.[349] Thus there is very strong evidence that the Anglo-Saxons did employ spiral stairs in some of their churches from the tenth century and, from extant examples, that the typical Anglo-Saxon newel is much thicker than the Norman newel and separate from the tread. It is certainly not being suggested here that there was a clear and tangible line of development in England from Anglo-Saxon spirals within churches to Norman spirals within castles or that the Normans learned that building technique from the Anglo-Saxons; but there is overwhelming and compelling evidence that the Anglo-Saxons were using spirals, albeit very selectively, well before the Conquest. Braun, who suggests that bell towers existed in England prior to the Norman Conquest but were sufficiently rare that ownership of them was a precondition of becoming a Thane, proposes that towers only had spiral stairs to the top after the introduction of lead roofs.[350] Raleigh Radford claims that the Anglo-Saxon stair turret (*cochlea*) is of Carolingian derivation,[351] whilst the Kerrs state that church towers are 'a late Anglo-Saxon innovation' and that the rooms in them were used as 'courts, treasuries, bells, storage of religious relics, and chapels'.[352]

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[345] N. Pevsner and B. Cherry, <u>The Buildings of England: Northamptonshire</u>, (London, 2nd edn, 2002), pp. 124-126.
[346] H. M. Taylor and J. Taylor, <u>Anglo-Saxon Architecture Volume II</u>, (Cambridge, 1st paperback edn, 1980), p. 724.
[347] H. M. Taylor, 'All Saint's Church, Hough-on-the-Hill', <u>Archaeological Journal</u>, Vol. 131 (1974), p. 336.
[348] N. Pevsner and J. Harris, <u>The Buildings of England: Lincolnshire</u>, (London, 2nd edn, 2002), p. 399.
[349] <u>Ibid.</u>, pp. 192-193; Pevsner and Cherry, <u>Northamptonshire</u>, p. 123.
[350] H. Braun, <u>Parish Churches</u>, (London, 1970), pp. 175, 181.
[351] C. A. Raleigh Radford, 'Pre-Conquest Minster Churches', <u>Archaeological Journal</u>, Vol. 130 (1973), p. 136.
[352] Kerr, <u>Anglo-Saxon Architecture</u>, p. 22.

Figure 30. Brixworth Church.
Illustrating the attached circular stair tower on the left.
Photographer: C. Ryder.

Viking structures other than domestic ones include boathouses to shelter their long boats during the winter months, pre-Christian ritual houses where the weapons of the defeated were displayed and Christian stave churches. These structures were single storey, often of wood set on a low surrounding stone wall, and this construction method remained in use even beyond 1624 when Oslo burned down and King Christian IV ordered a new city to be constructed of stone or brick, but did permit half-timbered houses for the poor. There are no signs of spiral stairs in any Viking building.[353]

Further east in what can be broadly termed Russia, churches were the first major structures to appear as a result of the conversion to Christianity in 988. These were initially made of wood and the first recorded stone church in Russia is the Church of the Tithes, Kiev (constructed *circa* 990 in Byzantine style) but it was destroyed in 1240. The church was rebuilt but again destroyed by the Soviet authorities in 1935. Kiev is now in the Ukraine. Certainly, the wooden structures in Russia do

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[353] See J. Haywood, The Vikings, (Stroud, 1999), A. Woolf, Anglo-Saxon and Viking Britain, (London, 2006) and M. C. Donnelly, Architecture in the Scandinavian Countries, (Boston, 1991).

not appear to have spiral stairs nor is there evidence of any early stone structures.[354]

Further south, the Teutonic peoples lived in small agricultural groups, much in the Celtic manner. These were perhaps family groups, for the name 'German' is derived from 'germen' that means seed or offshoot. Often the animals and people shared life in the same structures, similar to the Celts. These were single-storey structures and the main building material was wood. Again, published sources strongly suggest that spiral stairs were not employed in Teutonic culture at this period.[355]

Through the vectoring process, many geographic locations, cultures and periods of time have been eliminated as the likely origins of the spiral stair. Drawing from Raleigh Radford's viewpoint that the Saxon spiral stair was derived from Carolingian influences,[356] the research bracketed the origins of the spiral stair to lie somewhere in Europe between Vitruvius's work of the end of the first century BC and the tenth century AD, when we certainly have spirals in some Anglo-Saxon churches.

The Frankish World

Charlemagne, who ruled the Franks from 768 to 814, had a profound influence on European architecture and, as his Empire increased in geographic size, developed several capital cities. At Aachen, around 800, Charlemagne constructed a two-storey, octagonal chapel that has two spiral stairs leading to the upper floor where his throne is positioned (Figure 31); there is compelling architectural evidence that these spirals were part of the original building and are not later additions or modifications. However, the construction of these stairs is not similar to that found in later castles, churches and monasteries. They have a much wider step and newel, and the step and newel appear not to consist of one piece of stone – if they

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[354] See B. Fletcher and D. Cruickshank (eds), <u>Sir Banister Fletcher's History of Architecture</u>, (Oxford, 20th edn, 1996, reprinted 2001) and H. Faesen and V. N. Ivanov, <u>Early Russian Architecture</u>, (New York, 1975).
[355] See M. Kitchen, <u>Germany</u>, (Cambridge, 1996).
[356] Radford, 'Pre-Conquest Minster Churches', p. 136.

were, it would be an exceptionally large and heavy piece of stone. This *cochlea* design was constructed by setting a central newel of several large circular stones on top of each other and then constructing a temporary wooden armature between the newel and the wall, upon which a rising concrete vault was built and the steps laid on top of it. It is known as a *cochlea* design because it resembles the inside of a snail shell.
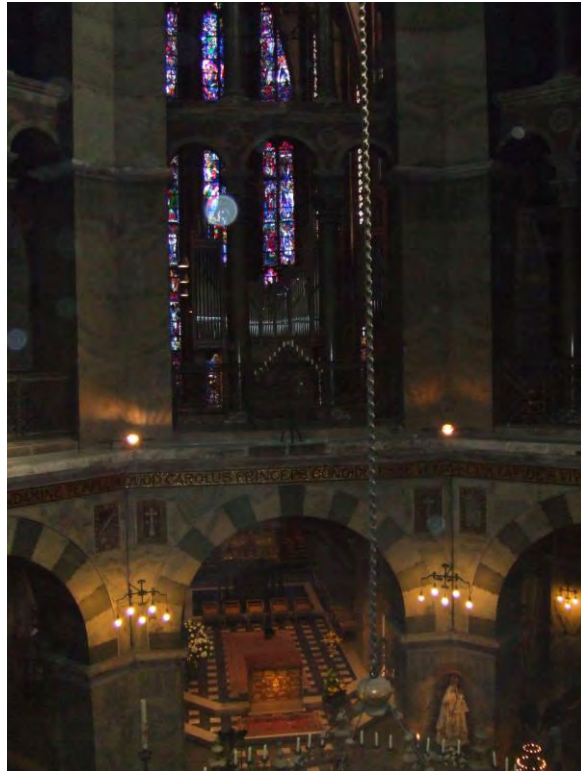
Figure 31. Aachen, Charlemagne's Chapel: View from the Throne.
Illustrating the two altars below and level with the throne.
Photographer: C. Ryder

Charlemagne appears to have had a penchant for things Roman (although it has been argued that this was rather eclectic than academic) and he certainly visited Italy, where he may have seen buildings and architectural features which he copied at Aachen and elsewhere.[357] The presence of the Aachen spirals therefore narrows the terminal date of the first spirals to no later than 800 AD but also, given the builder, raises the possibility of earlier Italian or Roman precedents. Thus, although no surviving evidence conclusively proves that Charlemagne visited these

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[357] G. M. Cohen, The Essentials of Art History, (Piscataway, NJ, 2002), p. 58 and see also K. J. Conant, Carolingian and Romanesque Architecture 800- 1200, (New Haven, NE, 4th edn new impression, 1993).

sites, research revealed surviving spirals at two earlier first-millennium AD sites in

Italy, both of which are still in good condition and in use today and which

therefore may have been seen in working order by Charlemagne and his

contemporaries. These are at Santa Constanza, Rome (*circa* 350 AD), that in the

fourth century was converted from Galerius's unused mausoleum to a church, and

San Vitale.[358]

Back to Rome

Santa Constanza (Figure 32) is a Roman mausoleum surmounted by a dome to

signify the importance of the occupants, in this case Constantia and Helena, the

daughters of Emperor Constantine.[359] Beneath the dome, there is a circulatory

ambulatory with 24 columns set in pairs.[360] However, of special note are the

Byzantine mosaics, for through their imagery can be seen the move from pagan to

Christian worship concurrent with the building's construction. The Chapel at

Aachen has some echoes of Santa Constanza, but San Vitale is a more probable

model for Charlemagne's work. The construction of San Vitale (Figure 33) was

sponsored by a banker, whilst the architect is not recorded, and it is significant as

the only major church surviving from the reign of Justinian I. The structure has a

mix of Roman and Byzantine architecture, with doors, dome and towers reflecting

the Roman and the polygonal apse, capitals and narrow bricks the Byzantine. It is

a two-storey structure with two spiral stairs, often considered similar to the

destroyed Byzantine Imperial Palace Audience Chamber, although the church has

been dated earlier than the audience chamber.[361] Thus it might have served as a

model for the Byzantine imperial audience chamber as well as for Charlemagne's

later chapel at Aachen. More specifically, both Santa Constanza and San Vitale

have spiral stairs that could be taken as a model for those at Charlemagne's

Aachen chapel. It would seem possible that these were the origins of spiral stairs

and, if not, this at least narrows down the search for those origins to the period

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[358] W. Kleinbauer, 'Charlemagne's Palace Chapel at Aachen and its copies', <u>Gesta</u>, Vol. 4 (1965).
[359] D. Stanley, 'An Excavation at Santa Constanza', <u>Arte Medievale</u>, Vol. 7 (1993).
[360] I. Serageldin, E. Shluger and J. Martin-Brown, <u>Historic Cities and Sacred Sites Cultural Roots for Urban Futures</u>, (Washington, DC, 2001), p. 15.
[361] J. J. Norwich, <u>Great Architecture of the World</u>, (London, 1975), p. 82 and W. Blaser and M. Stucky, <u>Drawings of Great Buildings</u>, (Boston, 1983), p. 53.

between the beginning of the first and the middle of the fourth centuries AD, firmly located in Europe.
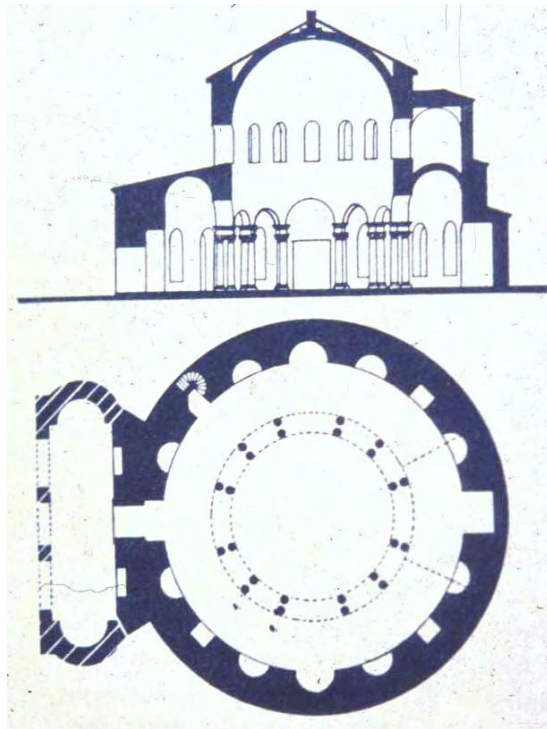
Figure 32. Santa Constanza: Plan.
http://intranet.arc.miami.edu/rjohn/ARC%20267/EarlyChristian_2002.htm.

This period of three and a half centuries is a large time frame to cover, but the research shows that somewhere in Europe between the appearance of Vitruvius's work at the end of the first century BC and the date of the earlier of the two surviving spirals in churches which may have served as a model for Charlemagne's Chapel at Aachen, namely Santa Constanza. Research at this point continued to combine limited fieldwork enhanced by careful use of published sources. Continuing to work backwards in time from known to unknown, a published source, largely concerned with later architecture, pointed to a Roman elite structure dating from the beginning of the fourth century containing a spiral stair. The author suggests that

> Staircase towers appeared first in the Eastern Empire. Spiral stairs or
> staircases (*cochleae*) were in use long before separate towers were used to
> house them. A large circular domed structure built *circa* 300 as part of

Emperor Galerius's palace at Salonica, 80 ft. across with a wall 18 ft. thick

at its base, appears to have had a spiral staircase constructed in its wall.[362]

Fisher is describing part of a complex constructed by the tetrarch Galerius, who

was Roman Emperor from 305 to 311. The complex consists of a ceremonial arch,

a rotunda and his palace. Although this site was not visited as part of the

fieldwork, Fisher's account and the limited plans of the complex which are

available together indicate the presence of a single spiral within the palace itself,

though most of the staircases at this complex are straight.
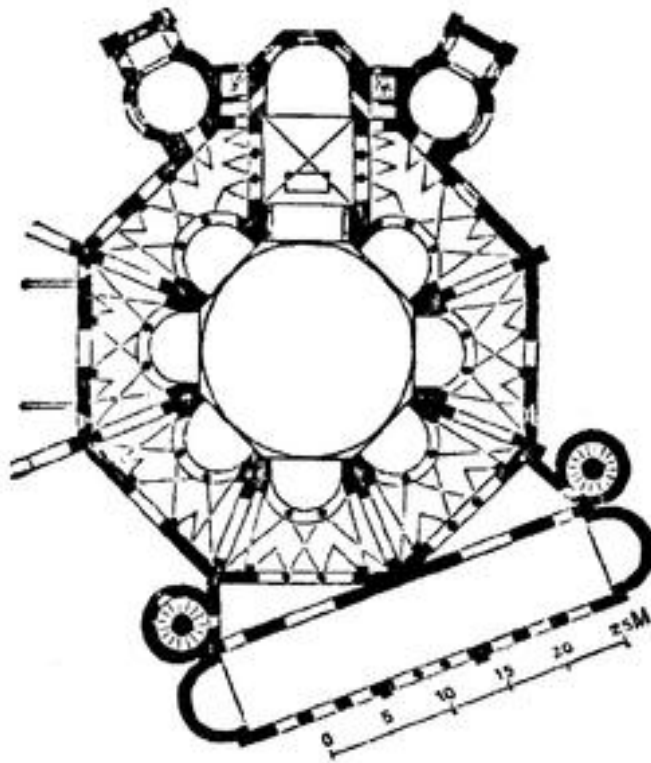
Figure 33. San Vitale: Plan.
http://en.wikipedia.org/wiki/Basilica_of_San_Vitale.

This palace was constructed at a similar time to Diocletian's palace at Split,

Croatia for which far clearer plans are available. Above all, there survives a plan

by Robert Adam of *circa* 1757, who claims it to be accurate work undertaken by

the French artist Clerisseau, working to Adam's instructions;[363] it has been

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[362] E. A. Fisher, <u>Anglo-Saxon Towers</u>, (Newton Abbott, 1969), p. 25.
[363] R. Adam, <u>Ruins of the Palace of Diocletian at Spalatro in Dalmatia</u>, (1764), Plate 5.

'reconstructed' by Hébrard and Zeiller.[364] This plan clearly shows several spirals within the palace. Diocletian ruled as emperor from 284 to 303 and moved to this palace in 304, so it is almost certain that the palace, including its spirals, was complete by that date.

The first spiral stairs found thus far by this research are in the late Roman palaces of Diocletian and Galerius, both constructed *circa* 300. Continuing to work backwards in time, research then focused on discovering whether these two Roman palaces drew on earlier Roman precedents for their spirals. Springing from this, it was decided to search for high Roman structures that may have required access to their upper levels, particularly in structures where space would be at a premium. Two candidates stand out: the Columns of Marcus Aurelius and Trajan in Rome. Trajan's Column (Figure 34) is the earlier of the two and so was prioritised for fieldwork, that duly found evidence of a spiral stair within the column.

Dedicated in May 113, Trajan's Column was originally erected as part of Trajan's imperial forum, a contribution to Rome that had become the norm for emperors. While the forum is now ruinous, the column survives in good order. The column is built principally in stone, with minor brickwork vaulting, and takes the form of a cylindrical column roughly 30 metres high and 3.7 metres in diameter, sitting on a large square pedestal around 5 metres high. Its most distinctive feature is an external Luna marble frieze which winds its way up the column. This 200 metre bas-relief, depicting both military and non-military events from the two Dacian Wars in which Trajan was victorious, wraps around the column in a clockwise direction 23 times. Typically seen as a display for this frieze, the column is, in fact, a building with 'an entrance door, vestibule, a chamber, a stair, windows and a balcony' and this places it into different context for interpretation.[365] There are some doubts regarding the original use for the column and its internal features, but it is known that Trajan's remains were laid here soon after his death in 117, thus perhaps the column was a funerary column, and the column previously held trophies he had won during the Dacian Wars. What does appear certain is that the

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[364] http://commons.wikimeia.org/wiki/file:SPLIT-Hebrard_overall_restitution.color.jpg (accessed December 2010).
[365] M. W. Jones, Principles of Roman Architecture, (London, 2003), p. 161.

column was designed to be visited because the spiral stair, which runs clockwise from mid-way up the pedestal to the balcony situated close to the top of the column, is well lit by small windows.

Figure 34. Rome, Trajan's Column.
Exterior view of the column's component parts: base, column, platform and statue.
http://www.italyguides.it.

Lancaster discusses the construction of this freestanding column at the hub of the imperial forum, which would have been no less impressive then as it is today. The architect is taken to be Apollodorus of Damascus who devised the design and construction of the structure and solved the complex mathematics of angles, tread and step measurements essential for the column and its stair to function.[366] The method of construction suggested by her is unusual and would require a tremendous amount of technical ability and labour to operate. Lancaster describes how the column is constructed from Luna marble blocks for the supporting plinth, whilst the column itself employs carved drums, each of a slightly different size to

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[366] L. Lancaster, 'Building Trajan's Column', American Journal of Archaeology, Vol. 103 (1999), pp. 419-439.

enable *entasis*. The Romans had experience of erecting large monolithic blocks using earth ramps and pulleys, but for Trajan's Column it appears that the blocks were lifted into place and fixed centrally plumb to reduce the chances of the column toppling over. Prior to being lifted into place, the drums had fourteen steps, and probably the windows too, carved out of them. Once a block was lowered in place on top of another, and essential if the column was to remain standing, the previously-carved treads on the drums were aligned and trimmed until they made a perfectly level surface, thus ensuring that the column was constructed perfectly vertically. In order to minimise the difficulties in lifting such weighty blocks, the carving was undertaken prior to lifting and this would have the effect of reducing the weight of each drum by an estimated 30%. In comparison to later spiral stair construction this is a remarkable achievement.

The column was of such great interest and rarity that it was included in the *Curiosum Urbis Romanae*, a late third-century document listing noted special buildings and monuments in imperial capitals.[367] It is unlikely that the column would be open for access other to the elite of Rome and their guests. One of these elite visitors was Constantius II, who in 357, on his first and only visit to Rome, was guided by Ammianus to the top of the column. The visit made such a favourable impression on him that the emperor recorded his visit for posterity by having his name carved on the stair.[368] All this strongly suggest that Trajan's Column continued to be seen as something very special and unusual during the later Roman period, which in turn might imply that the use of spiral stairs also remained exceptional. If so, one reason might be the very complex and difficult way in which the spiral stairs had been created at Trajan's Column and until a simpler and more manageable building technique was devised, the construction of such spiral stairs remained an enormous and daunting undertaking.

Having established that the spiral stair within Trajan's Column is original and contemporary with the building, which can be closely dated, further research was

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[367] M. Beckmann, 'The *Columnae Coch(h)lides* of Trajan and Marcus Aurelius', Phoenix, Vol. 56 (2002), pp. 348-357.

[368] Jones, Principles of Roman Architecture, p. 165. Chapter 8 of this work assesses Trajan's Column, springing from the author's earlier article '100 feet and a spiral stair: the problem of designing Trajan's Column', Journal of Roman Archaeology, Vol. 6 (1993), pp. 23-38.

undertaken in two directions: firstly, to seek any earlier uses of a spiral and secondly, to identify further employment of spirals within the Roman empire between 113 and their use in the two Roman palaces of the very early fourth century, discussed above.

Figure 35. Palmyra, Temple of Bel: Spiral Stair.
Illustrating structure of the spiral stair from below.
http://publicimages.org/freeimage/ViewImage.aspx?imageId=3918032.

Firstly, fieldwork and published sources did not identify any spiral stairs which can reliably and with confidence be dated to before Trajan's Column. The apparent existence of a spiral at the Greek colony of Selinunte, resting upon a late nineteenth-century sketch plan of Temple A, has already been discussed and reasons have been presented seriously to question the veracity of that source and the true date of any spiral stairs there. One other site has been suggested as containing an earlier spiral stair, in this case the Temple of Bel, Palmyra, Syria, which was dedicated in 32 AD. At this site there is no doubt that a spiral stair exists because, although now ruinous, it still survives to a good height and is a true spiral with a newel. However, the ruins at Palmyra in general and the Temple of Bel (Figure 35) in particular have had a complex subsequent history, at different times being part of the Roman empire, the East Roman empire, the Seljuk empire

and the Ottoman empire. Many of the buildings on the site were reused and rebuilt, often more than once, especially after it passed to the Moslems, who adopted some of the structures for their own religious use, while converting and reconstructing other parts of the site and its buildings for military and defensive purposes. Accordingly, it is very difficult accurately to date the surviving spiral stair within the Temple of Bel and although we cannot be sure that it was not part of the original structure of the first half of the first century AD, therefore pre-dating Trajan's Column by well over half a century, equally it may well date from a much later adaption and reconstruction at this site.

Secondly, a mixture of fieldwork and published sources indicates that spiral stairs were employed, though only rarely and selectively, in Roman imperial buildings of the two centuries following the construction of Trajan's Column. Most obviously and in a very similar context, they were used within the Column of Marcus Aurelius, Rome, in the late second century. In a different context, spiral stairs have been located in the Baths of Caracalla of 212-216 and the Baths of Diocletian of 298-305, both in Rome, whilst in a religious context the third-century Round Temple at Ostia to the west of Rome, also employs a spiral stair. Although it is possible that spiral stairs existed in some other Roman buildings of the second and third centuries which have not been identified in this research, it is clear that the spiral stair never became a common or standard feature of Roman imperial architecture and that its use remained restricted.

The Normans

If the search for the earliest spiral stair has been long and tortuous, the search for the earliest use of a spiral in a building that can fairly be termed a castle is much more straightforward. It is generally held that castles did not exist until late in the first millennium, and therefore at some point we should be able to trace the movement of spiral stairs from grand Roman buildings through later ecclesiastical buildings to the castle. Although stone keeps were built in small numbers in France from the mid-tenth century, for example Doué-la-Fontaine constructed *circa* 950 by Theobald, duke of Blois, the very earliest stone keeps developed from

single-storey stone halls; they comprised just two storeys, an enclosed ground floor storage area and a first floor hall.[369] Accordingly, there would have been very little need for internal vertical movement, indeed probably nothing more than gaining access to the basement storage area from the hall above, perhaps by nothing more complicated than a simple ladder let down from the floor above. Although the fragmentary ruins of these early castles preclude definitive conclusions, both fieldwork and published sources suggest that they have no spirals. For example, Mayenne, north-west of Le Mans, Langeais and nearby Montbazon offer no evidence of interior stone staircases of any type and presumably the stairs or ladders were of timber.[370]

Figure 36. Loches: Interior Straight Stair.
View down the interior straight stair in the *grosse tour* lower levels.
Photographer: C. Ryder.

Further intensive work on castles of this period suggested that the earliest known example of a castle with a spiral stair is at Loches, built by Fulk Nerra *circa* 1012-

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[369] C. Gravett, Norman Stone Castles (1) The British Isles 1066-1216, (Oxford, 2003), p. 5.
[370] P. Marshall, private correspondence by e-mail July 2007.

1035 (Figure 95). He built this castle during a period of turmoil between the Counts of Blois and Anjou in the very fertile area close to the River Indre near the Loire valley and adjoining the Blois border with Anjou. The dating of this castle is quite clear and secure as Mesqui has shown from dendrochronological testing, the first levels were begun *circa* 1012 and the final levels completed *circa* 1035.[371] When originally built, Loches did not have a walled enclosure to protect it, which is unusual given its proximity to the Blois-Anjou border.[372] Instead, the defensive capacity rested upon its keep, which is over 30 metres high and dominates the neighbouring area. Drawing upon Mesqui's work, Impey claims that the great tower at Loches is a complete single household with spaces allocated to a range of functions necessary for the status of the lord, his family and retinue.

Figure 37. Loches: Interior Spiral Stair.
View of the spiral stair leading to the elite accommodation in the *grosse tour*.
Photographer: C. Ryder.

The great tower at Loches – named *grosse tour* by Mesqui[373] – measures 25.2 metres by 13.7 metres and it is estimated that it stood some 32.3 metres high and it

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[371] J. Mesqui, <u>Deux Donjon Construit Autour de L'An Mil en Touraine</u>, (Paris, 1998).
[372] E. Impey, 'The Ancestry of the White Tower', in Impey, <u>The White Tower</u>, (London, 2008), p. 233.
[373] Mesqui, <u>Deux Donjon</u>.

has an annexe – *petite tour* – to the north some 13.3 metres by 9.1 metres that stood to the same height as the *grosse tour* (Figures 38 and 39). The *petite tour* is more than a forebuilding in that its upper part has been utilised as a chamber and, above that, a chapel. The structure consists of a sub-basement plus a basement at ground floor level and three upper floors. The great tower of Loches is entered after mounting a set of straight external stairs and through a doorway in the west wall of the *petite tour*, where ahead a straight stair descends to the sub-basement of the *petite tour* and a doorway leads to the sub-basement of the *grosse tour* where there is a well. To the left of the main entrance doorway is a straight stair that follows the sides of the *petite tour* up to first floor level, where it terminates at a doorway into a chamber the full size of the *grosse tour* that is furnished with windows and a fireplace at the far – west – end. To the right of this doorway inside the large chamber is a doorway to a small chamber – furnished with a fireplace – in the *petite tour* above the stair and further along the north wall of the large chamber is a doorway leading to an intramural passage that eventually leads to a stair in the south-west corner of the *grosse tour* at first floor level; this stair descends to the basement following the contours of the wall.[374] To the left of the entrance doorway to the first floor chamber is a doorway leading to a short passage with a garderobe to the left and a straight intramural stair in the opposite direction leading to the second floor (Figure 36). The second floor chamber is of full size, as is the first floor chamber, and has a fireplace in the west wall, windows and a garderobe in the south-west angle but it does not have an intramural passage. Entry to the second floor is through a doorway in the south wall and directly opposite in the north wall is a doorway to a room in the *petite tour* defined as a chapel.[375] Close to this in the north-east angle is a doorway leading to a short passage and to the left of this passage is a spiral stair (Figure 37) that rises clockwise to the third floor. This spiral has an 85 cm wide stair, with a 28 cm outer tread, a 19 cm riser and a 15 cm diameter newel. It terminates in a wall passage in the north-east angle at third floor level, giving access to a doorway and a straight intramural stair. The doorway leads to a chamber the full size of the *grosse tour* fitted with a fireplace, windows and a garderobe in the north-west angle, with a door midway along the north wall that led to a third floor level

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[374] Mesqui identifies this as a room to meet important guests or a room for councils.
[375] La chapelle de Saint-Salleboeuf.

chamber in the *petite tour* that no longer exists, whilst a straight intramural stair leads to the wall walk at roof level. Mesqui states that the access from the second to third floor using the spiral is not as easy as the straight stairs elsewhere in the structure and his interpretation of the space is that it is a dual one, considering it to be not a public space but either a space for defence during a siege or the private space of a lord.[376] Stalley simply describes this stair as leading to 'the private chambers at the upper level'.[377] If we accept this interpretation, the spiral stair can be interpreted as a sign or symbol that private space was above.
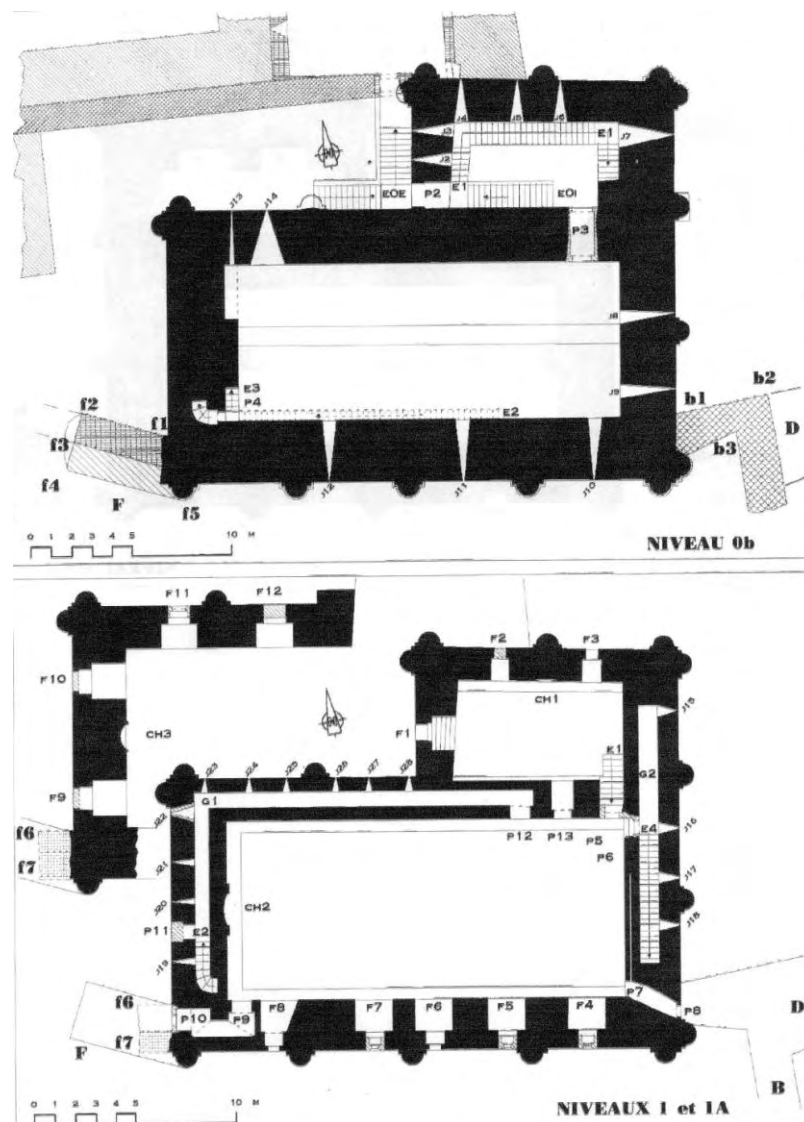
Figure 38. Loches: Plan of Lower Levels.[378]

[376] J. Mesqui, 'La tour maitresse du donjon de Loches', Bulletin Monumental, Vol. 156 (1998), pp. 99-100.
[377] Stalley, Early Medieval Architecture, p. 90.
[378] Mesqui, 'La tour maitresse', p. 127.
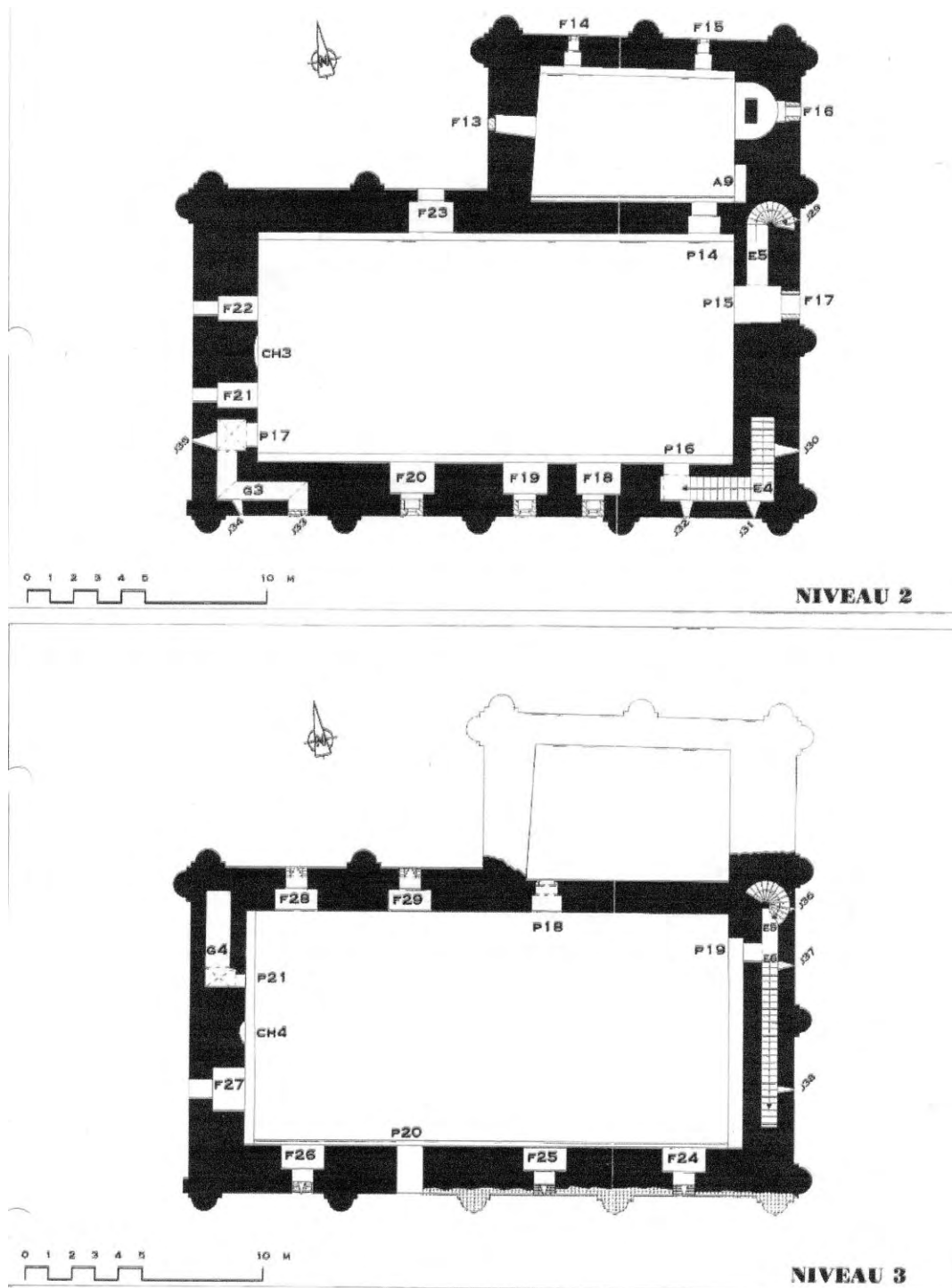
Figure 39. Loches: Plan of Upper Levels.[379]

Loches was the product of a significant medieval lord holding lands in a region of conflict and one that would reflect his status within medieval society. It is unusual that there is one spiral stair set high in the structure, whilst all the other stairs are intramural and straight or at least follow the angle of the wall. There appears to be

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[379] Mesqui, 'La tour maitresse', p. 128.

no design or engineering requirement for this change of stair, for the wall is sufficiently thick at this point to accommodate a straight intramural stair and the opportunity was not taken by the architect to add windows or slits in the east wall of the *grosse tour* either. The use of the spiral stair at this point in the building must, then, have denoted something to the occupants and visitors to the tower during the medieval period.

Conclusions

In summary, this research into the origins of the spiral stair strongly suggests that it was first employed at the beginning of the second century AD in Rome in an elite structure. Thereafter it was used in some Roman imperial buildings but only very sparingly and infrequently. By the fourth century spiral stairs were being employed in mausoleums connected to the imperial family, their use perhaps reflecting the elite status of the family. Via some of these Roman buildings, which in due course were converted into Christian religious buildings, the spiral became a feature of Christian religious architecture. The form was also adopted for elite imperial use by Charlemagne. At the end of the first millennium, the concept of the spiral stair spread to and was adopted within castles, first used in this context probably at Loches. Given the enormity of the topic and the geographical area to be covered, the physical limitations upon the fieldwork which the author has been able to undertake and the paucity of published work in this area, these conclusions are presented with some caution, though with strong evidence to support them. It is hoped that they will encourage further work in this area, even though it might alter or supersede some of the conclusions presented here. However, that would be welcomed as a positive enrichment of our knowledge in this field.

CHAPTER 3 – SPATIAL ANALYSIS OF CASTLES

To understand the role of spiral stairs it is necessary to understand which spaces they linked and which they did not. Once we understand the purposes for which the spaces were created, how they were used and by whom, we can interpret the castle. However, it is essential to see that space through medieval eyes from different levels in that society. It is quite difficult to see the world through another culture's eyes and especially so when we are looking through the eyes of a culture existing a thousand years ago. To understand the use of space and with particular reference to this work – spiral stairs – it is necessary to construct diagrams to simplify the complexities of castle layout. For some academics, stairs are not considered to be spaces within castles and perhaps because of this, have been overlooked in research – a point considered earlier. Indeed, some of the earlier work on spatial analysis by Faulkner and Mathieu did not reference stairs as a space, whilst Richardson combines stairs with other seemingly, to her at least, less important spaces like corridor and lobby. However, the thrust of this thesis is that stairs within castles are spaces and that they are more than transition spaces and contained meaning for both those using them and those not permitted to use them. Clearly, stairs are less significant than, say, the great hall but they are part of the lexicon of medieval life.

Johnston sets out four categories of the factors that have an effect on human behaviour in either encouraging certain activities or discouraging them and he lists them as:

1. The physical environment – land, water, air and the flora and fauna;
2. The social environment – culture and organisations;
3. The built environment – man-made structures;
4. The spatial environment – the spaces within which a person or group exists.[380]

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[380] R. J. Johnston, Spatial Structures, (London, 1973), p. 1.

It is one or more of these categories of factors that affect the manner in which each human and each group of humans exist. It is complex to understand this and especially so in that behaviour is affected by human perception of the factors in the categories and one human may have a different perception when faced with the same factors and thus behave differently from his or her fellows. The challenge in writing about medieval history is that we are also far distant from it in time and, as Picavet has pointed out, in culture,[381] and we cannot directly ask questions of those who know what factors made someone behave in a certain way.

Kuhn describes his framework for the study of society as 'organisations' and 'transaction' and these function through 'decisions, transformations and communications'.[382] For this to happen, there needs to be space for each individual and group to undertake its role: nations need territory, for example. The castle is where individuals and groups would undertake their roles within a space. In recent research it has been noted that the castle space is much more than just the keep or castle area but may also encompass the surrounding habitations, church, mill, forest, deer park and so on. In this wider space communication takes place and decisions are made. Space within castles was structured to reflect the medieval society that went about its day-to-day activities and, like any structured society, communication and decision-making at different levels took place in different spaces. Such a society with high 'power-distance' would have its spaces structured such that access to certain spaces would only be available to those of higher status within the culture.[383] There would be a need to interpret signs – not written ones in the case of medieval castles – that certain groups and individuals were excluded from some spaces, but that some individuals who might normally be excluded in fact had access to high status spaces – namely the servants, whose position Collins describes as 'present but absent'.[384] However, the castle and the adjoining lands and structures must be considered as an inter-dependent whole where each of the component parts – no matter how small and seemingly

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[381] Picavet, histoire générale et comparée.
[382] A. Kuhn, The Study of Society: a multidisciplinary approach, (London, 1966).
[383] G. Hofstede, Culture's Consequences, Comparing Values, Behaviours, Institutions and Organizations Across Nations, (Thousand Oaks, CA, 2001), passim.
[384] P. Hill Collins, Black Feminist Thought: knowledge of consciousness and the politics of empowerment, (London, 1990).

insignificant – has a role to play to assist the functioning of the whole. For as Markus states, 'There is no a-spatial society and no a-social space',[385] and thus all interior and exterior castle spaces have a role to play in society. It is the manner in which spaces are linked rather than their proximity that is important; this is highlighted by Fairclough's statement that 'in planning diagrams, a rooms' relationship to another is often determined, for example, not by physical location but by access to and from related rooms'.[386] Along with this, the direction that a door opens and locks defines the direction of access and has implications of control over entry; thus consideration should also be given why one side of a doorway is more decorative than the other. Fairclough defines the more decorative as the 'outside' space from which the higher status room is entered and room size itself would also reflect status.[387] In more egalitarian societies there would be fewer restrictions on movement between spaces.

Markus uses the ninth-century monastery at St. Gall as an example of how power is defined as access to finite resources.[388] At St. Gall power is demonstrated by the amount of finite space allocated to the occupant of that space and the location of that space – even in death. The tombs of the more significant are larger than most and are placed close to the altar. For the living, the more senior members of the monastery have larger and more numerous personal spaces with more elaborate furnishing where they undertake their duties; are more prominently seen; and have access to entrances, areas and circulation routes that are restricted. Although Markus applies his ideas to a wide range of buildings – from hospitals, factories and large and small private houses – he does not address castles.

Fairclough describes how spatial analysis was the vogue of the 1970s and 1980s in archaeological studies and, though applied to prehistoric contexts, it is useful in analysing the more complex medieval buildings, especially those of 'high-status'.[389] He suggests that spatial analysis is more useful in terms of data because

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[385] T. A. Markus, Buildings and Power, (London, 1993), p. 13.
[386] G. Fairclough, 'Meaningful constructions – spatial functional analysis of medieval buildings', Antiquity, Vol. 66 (1992), p. 351.
[387] Ibid., pp. 354, 361.
[388] Markus, Buildings and Power, pp. 22-23.
[389] Fairclough, 'Meaningful constructions', pp. 348-366.

of its objectivity than the 'subjective analysis based on notions of symbolic or functional characterisation'.[390] Fairclough makes a strong point here, but a combination of spatial analysis data and the more subjective symbolic analysis and functional analysis is more likely to produce a stronger interpretation, especially where the structures analysed are not complete or in their original form: and many castles fall into these categories, as seen earlier in this thesis.

The starting point of the analysis methods is the same for all, in that it defines that society 'conditions the ways in which groups negotiate rights over space within a building' and this is a view that is also carried by the behavioural sciences and architectural theory.[391] Essentially, the human is seen as a territorial creature, society and culture 'manage' this territoriality and the design of cities and both public and private buildings and other spaces support the way in which each society and culture 'manages' its space. Thus buildings will be of 'their time', meaning that they represent the society and culture for which they were built, such that the degree of privacy, the ability to interface with other humans and the ease of so doing, both within the immediate 'family' group and with those from outside this group, are facilitated by the design of the building. The building design will create spaces and links between spaces which reinforce the societal norms by facilitating or inhibiting meeting. However, some norms appear to run across many cultures. For example, there appears to be a standard where upper levels of multi-storey buildings in early cultures were reserved for high status individuals. Fairclough supports this with an analysis of the broch at Gurness that illustrates that the higher level spaces were reserved for the higher status inhabitants.[392] This concept of high-level living equates to high-status changes with the advent of large houses with servants, where the servants' quarters are located under the eaves above the high-status inhabitants' rooms. However, elsewhere the form of high-level high-status relationship continued well beyond the medieval period, as described by Wong in the Hong Kong and Shanghai Bank.[393]

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[390] Ibid., p. 348.
[391] Ibid., p. 348.
[392] Ibid., p. 350.
[393] S. Wong, 'Colonialism, Power, and the Hong Kong and Shanghai Bank', in I. Borden, J. Kerr, J. Rendell and A. Pivaro (eds), The Unknown City, (London, 2001), pp. 160-175.

Wong gives a detailed analysis of the structure of the Hong Kong and Shanghai Bank building of 1886, where higher status rooms are to be found at the top of the building, at the time the highest on the Hong Kong waterfront. These rooms are larger and have better natural light and views compared to those lower down the building, that were reserved for those lower down the social scale of the bank. The Chinese servants were allocated small living spaces in the basement. A grand staircase linked the entrance floor to the upper living spaces but not to the basement. There was also a relationship between status and the depth of the work space from the entrance; the higher the status, the further the work space was from the entrance and at the lowest office level there was a six metre wide corridor to separate the Chinese offices from the European offices. The banking hall was a great hall of immense height and space, with a large octagonal dome and it again had a wide space to segregate Chinese and European banking space, its customers and staff. A further differentiation between the Chinese and European living spaces was the difference of building materials and finish, with the Chinese space much simpler and using cheaper materials. The Chinese, too, were not permitted to use the main entrance but had their own entrance at the rear of the building where, one presumes, the Europeans would never enter by choice. Wong concludes 'Thus spatial segregation within the headquarters building was a microcosm of the system operating in the city as a whole'. It is not a great leap of the imagination to create parallels in medieval castles and their place in medieval society with this Victorian bank building, despite the huge gap in time and place.[394]

Campion, too, in his work on a very different set of buildings, namely those of Calverton, Nottinghamshire's spinning industry, notes the link between status and architecture: 'And what better way to assert this supremacy than through architecture and spatial control, where past societies have left a rich legacy to affirm the primacy of domination and control through built spaces?'[395] Describing the industrial housing of the nineteenth century, Campion illustrates how the Master Hosier could assert his 'supremacy through architecture and spatial control' as the frame-work knitters were not permitted access to the Master when

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[394] Ibid., p. 170.
[395] G. Campion, 'People, process and the poverty-pew', Antiquity, Vol. 70 (1996), p. 859.

submitting their work but were obliged to stand outside and seats were not provided.[396] Also when describing the Master's house, Campion demonstrates through spatial analysis that the workers and the Master used different entrances to the building and also that the workers had separate access to 'privies'.[397] The hosier's private rooms, in similar fashion to those of the medieval lord, are well equipped with 'attractive fireplaces' and superior quality doors and he states that workers 'would have been made aware of their restricted nature and an invisible boundary established for them', although it is not made explicit if this invisible boundary is to be found in the structure of the building or through word of mouth.[398]

This element of use of entrances appropriate to one's status in society is carried forward by Hicks. She draws from medieval written sources in a work addressing the symbolism of castle space with particular reference to Normandy.[399] Using chronicles written by 'monks and secular clerics', Hicks describes the use of imagery and literary allusion of the medieval writers to interpret the use of space in medieval castles.[400] For example, Orderic describing the death of Conan at Rouen, where Conan was taken through the castle and the thrown to his death from a window in a high status room, uses signs of lordship – such as the hunting ground seen from the castle – as a scene where the images created by Orderic are employed to reaffirm the status of the lord and the lower status of Conan.[401] The use of images has artistic licence. In particular, Hicks states that 'it is social status that is the key to understanding the use of space by both men and women' and that what mattered was 'the manner in which they carried out those roles'.[402] Hicks does not specifically go on to look at this but she points to the conclusion that in medieval society it was not only the specific acts of the people involved that were important but also the space in which they were performed.

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[396] Ibid., p. 859.
[397] Ibid., p. 857.
[398] Ibid., p. 857.
[399] L. V. Hicks, 'Magnificent entrances and undignified exits: chronicling the symbolism of castle space in Normandy', Journal of Medieval History, Vol. 35 (2009), pp. 52-69.
[400] Ibid., p. 54.
[401] In this case duke Robert Curthose, whose young brother Henry acted in lieu of the duke.
[402] Hicks, 'Magnificent entrances', p. 69.

Hicks also draws upon Dudo of St. Quentin's 'History of the Normans' for an example of the surrender of personal space on grounds of status; Herluin, Count of Pontieu, had been assisted by William Longsword and lodged him in the 'highest hall' and also waited upon him, and this can be interpreted as Herluin giving up his personal space to a superior.[403] Such actions frequently continue today on board ship where a captain would give up his cabin to a superior or special guest. However, this story about Herluin may also have been subject to artistic creativity for effect.

Hicks draws on Dixon's work on Castle Rising in suggesting that stairs were a part of the castle used to 'underline the power of the lord' when combined with the positioning of doors and windows and holding areas as the visitors processed their way to the presence of the lord or, in some instances, the lady .[404] This is reflected in Mesqui's work, where the concept of the existence of space within the castle has a vertical hierarchy, in that the higher the space one used or had access to, the more important one was during that time.[405] Thus access not only to rooms but to stairs was a 'badge' of importance in medieval culture. Access to the lord's or lady's chamber was restricted and the business undertaken there would fall into the private or semi-private category rather than the public business that would be undertaken in the great hall. For example, Hicks describes how empress Matilda received Prior Nicholas of Mont-aux-Malades, who was an envoy for Thomas a Becket, in her private chamber in Rouen to discuss the Constitutions of Clarendon, dealing with the sensitive matter of Henry II of England's move to state control over the church in his kingdom.[406] However, this example is a little weak in that it is unclear if the meeting took place in castle or priory and the chamber mentioned was probably at the same level as the hall rather than above.

Drawing from translations of contemporary writing, it is clear that visiting others' castles and holding certain meetings in public or in private – though in both cases, the meetings are likely to have taken place in the presence of others of an appropriate level of the hierarchy – was expected in the culture of the time. For

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[403] Ibid., p. 68.
[404] Ibid., p. 57.
[405] Mesqui, Châteaux et enceintes de la France Médiéval, Vol. 1, pp. 26-28.
[406] Hicks, 'Magnificent entrances', p. 62.

example, William of Malmesbury describes the negative thoughts about Hervy de Liun, 'a man of such high nobility, and so extremely haughty, that he never deigned to visit England, though King Henry had invited him'.[407] An example of a private meeting occurred between King Henry and 'the legate and archbishop', described as being held in the king's chamber. Here, the two 'prostrated themselves' before the king, 'entreating him to take pity on the church'. The king is described as 'condescendingly rising to [greet] them'.[408] Clearly, if that had occurred in a more public place, it would have reflected upon the status of the relationship between the participants and also between monarch and church, which was rather fragile at this time. An example of a very public meeting occurred on 2 March 1141, on an open plain near Winchester, Hampshire. Here the empress Matilda, in front of a large invited gathering of nobles and clergy as witnesses, 'pledged her faith to the bishop' in his control over all church matters in England if he 'would receive her as sovereign'; the following day there was a procession to Winchester Cathedral, where, presumably, the general public would form a crowd to witness the relationship.[409] An example of members of the elite never being truly alone, even in their private room or chamber, is given by Jordan Fantosme. He relates how the king was in 'his own private room' when a messenger arrived to deliver good news regarding the trouble with the king of Scotland. Initially, the messenger is not permitted to enter because the king is asleep with at least one servant in attendance, but he is eventually admitted and able to relate the good news and is rewarded with a grant of land.[410]

With this need to compartmentalise the daily life of the aristocracy, there was a requirement to have places that were public, semi-private and private and also methods of defining what category any particular space was for someone moving around the castle. Hicks states that the term 'restricted' is more apt than 'private' and suggests that 'Divisions between hall and chamber were much more complex than a modern binary opposition of public and private'.[411] This is a reasonable

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[407] J. Stephenson (trans. and ed.), 'William of Malmesbury, a history of his own times from 1135 to 1142', The Contemporary Chronicles of the Middle Ages, (Felinfach, 1988), p. 27.
[408] Ibid., p. 29.
[409] Ibid., p. 38.
[410] J. Stephenson (trans. and ed.), 'Jordan Fantosme, the war between the English and the Scots 1173 to 1174', The Contemporary Chronicles of the Middle Ages, (Felinfach, 1988), pp. 118-119.
[411] Hicks, 'Magnificent entrances', p. 63.

interpretation regarding early castles in the light of the limited number of spaces within those castles, but perhaps is less so when considering larger and later castles. However, there is an argument that castles such as Caernarvon, Gwynedd and Conwy were designed for multiple households and would require subsets of restricted spaces for these second tier households to undertake their business.

This discussion of the dynamics of medieval culture in terms of what happened where and by whom it was witnessed leads to an understanding of the use of space and its interpretation. Put simply, who had access to what spaces? Attempting to understand this from plans is a difficult task. Thus, it became apparent during the research that a method of diagrammatic representation was required to help understand the dynamics of movement around buildings and through that the limits on interaction between people as they moved around castles; the facilitation of and restrictions upon movement; and the role that spiral stairs played in the restriction or freedom of access to certain castle rooms. Hillier and Hanson bemoan the fact that the usual plans available are insufficient for this understanding and the new research undertaken for this thesis tends to confirm their conclusions.[412] The research into methods of spatial analysis of castles discovered a number of systems in existence, but none appeared to give the data in a form that was ideal for this study. As such, a new system (described in this chapter) was developed, based upon an analysis of the strengths and weaknesses of those already existing methods of analysing space in castles. In this chapter, Faulkner's, Mathieu's, Dixon's and Richardson's methods are described with some supporting examples; the strengths and weaknesses of each method are assessed; and a revised approach supported by examples is proposed by the author. It was this final spatial analysis method devised by the author that was used for research for this thesis.

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[412] W. Hillier and J. Hanson, The Social Logic of Space, (Cambridge, 1984), p. 3.

Spatial Analyses of British Castles

Faulkner developed 'Access Analysis' as an analytical method that illustrates the links between spaces in castle.[413] Creighton describes access analysis as 'the spatial relationships between rooms and other areas within a building…depicted as a matrix'.[414] This does not go far enough, in that its description limits it to spaces within the building – despite this work by Creighton referencing areas external to the castle buildings – and also lumps all areas other than rooms into one category.
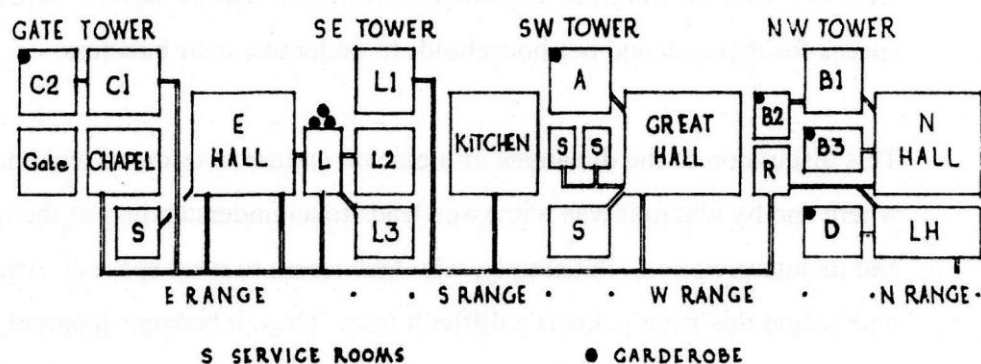
Figure 40. Faulkner's Diagram of Goodrich Castle.

To illustrate his method, Faulkner created diagrams of the castles at Corfe, Dorset, Chepstow, Monmouthshire, Caerphilly, Caerphilly, Goodrich, Herefordshire (Figure 40), Bolton (Figure 41), Beaumaris and Bodiam. The main benefit of Faulkner's method is that it diagrammatically illustrates the selected spaces in the buildings according to their height from the ground. This is very useful for interpretation, especially when read with an 'architect's plan' of the building. Architects' plans in the original form are, of course, not available and most recently-drafted plans of castles that are available are too often only of the ground level structure. Unfortunately, Faulkner's diagrammatic method is somewhat limited in that he chooses not to include all the spaces in the castles: stairs, passageways, wall walks, baileys and reference to the world outside the castle are all omitted. Like many authors before him, Faulkner has not placed sufficient emphasis on the importance of stairs and passageways. Beyond this, he does not include in his diagram features found within the spaces, such as doors (other than

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[413] Faulkner, 'Castle Planning', pp. 215-235.
[414] O. H. Creighton, <u>Designs Upon the Land</u>, (Woodbridge, 2009), p. 184.

from the 'Court'), windows, fireplaces and so on. The presence of such items within a room is important in interpretation of its usage and designation within the castle's hierarchy of personnel. Moreover, the absence of geographic direction in the diagrams does not assist the viewer in aligning them. To illustrate his method, Faulkner's diagrams for Goodrich Castle and for Bolton Castle are shown here. Faulkner's innovative method is useful in part but has significant limitations if his work is to be used in interpreting the castle.
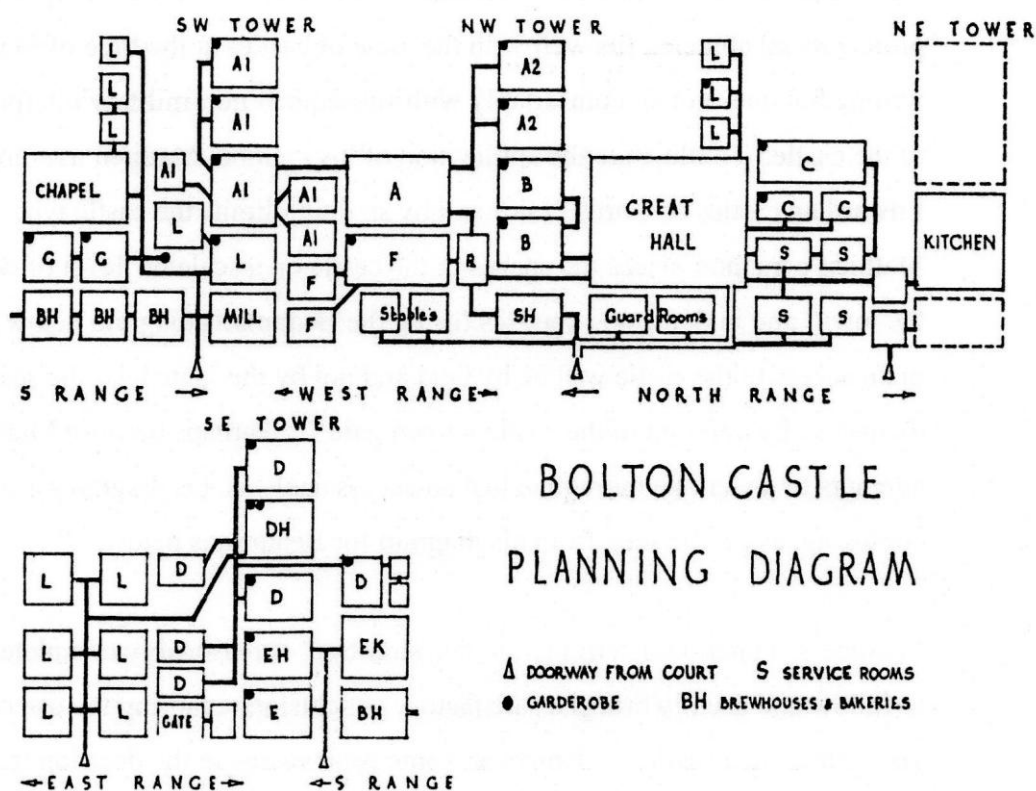
Figure 41. Faulkner's Diagram of Bolton Castle.

The second method analysed is that of Mathieu, who noted the weaknesses in Faulkner's method and to address some of them developed his own approach;[415] this appears strongly influenced by the work of Hillier and Hanson. In particular, Mathieu detected that Faulkner's method does not fully address all the spaces to be found in castles and he notes in his 'Access Analysis' section that stairs and passageways are omitted by Faulkner.[416] Beyond this, and interestingly, Mathieu

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[415] Mathieu, 'New methods', pp. 115-142.
[416] Ibid., pp. 125-129.

notes that the gatehouse passage should not be seen as one space but as several spaces divided from each other by some form of barrier, perhaps a door or portcullis. Mathieu's purpose is to place the castle's spaces in relative terms of distance from the main gate of the castle or the 'Level of depth from the town', based on the principle that the main gate would be the principal point of attack and so the more private spaces will be the furthest from the imagined attack point. This emphasis on the castle as a defensive structure, whose main purpose was to protect its inhabitants, fits well with the view of castles at the time of Mathieu's writing but does not sit comfortably with subsequent non-military interpretations of the castle. To illustrate the application of his method, Mathieu uses four Edwardian castles of North Wales and by so doing limits the castle type. Mathieu's method places the spaces in the castle on a scale of 'level of depth from the town' and in doing so supposes (Figure 42) that the main access to the castle will be by land and not by the 'gate next the sea' that is diametrically opposed to the castle's town gate.[417] Perhaps because Mathieu also attempts to undertake more than just an access analysis, his diagrams are confusing, as can be seen from his diagram for Beaumaris below.[418]
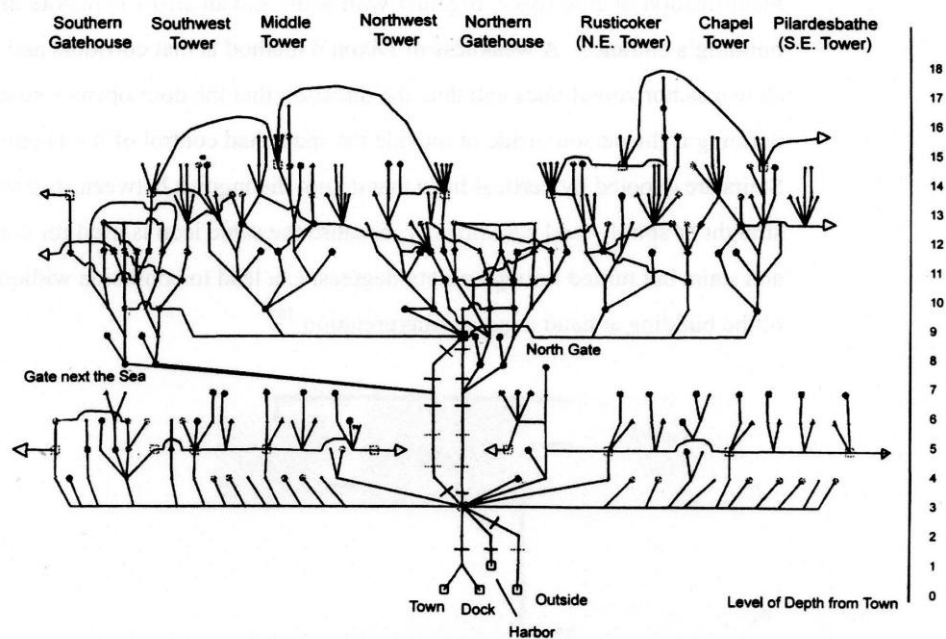
FIG. 7

Beaumaris Castle — intended access diagram. Areas outside the castle walls are at the bottom. The access diagram is justified with respect to these external areas. The numbers along the right hand side of the access diagram label the level of depth of spaces at points along that horizontal.

Figure 42. Mathieu's Access Diagram of Beaumaris Castle.

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[417] The examples used are Conway, Harlech, Caernarfon and Beaumaris.
[418] Mathieu, 'New methods', p. 115. Mathieu attempts to include 'Feature Analysis' and 'Comparative Analysis'.

Mathieu's 'Function determination decision-tree' (Figure 43) is reasonably complete and easy to follow and usually brings a satisfactory conclusion regarding the use of any given space in a castle.[419] However, some weaknesses in the decision tree logic make it less than fully effective. For example, castle chapels that do not have east-facing windows will not be classed as a chapel. Similarly, the room above the King's Gate entrance passage (following the tree) will be interpreted as a 'hall', even though it has a double *piscina*,[420] whilst any room with access via its ceiling, will be interpreted as 'storage', when in some cases it may be a cell. In general, the function determination tree fails to deal effectively with basements, some of which are vaulted and have stone spiral stairs leading down to them, for example Harewood Castle, West Yorkshire.[421]
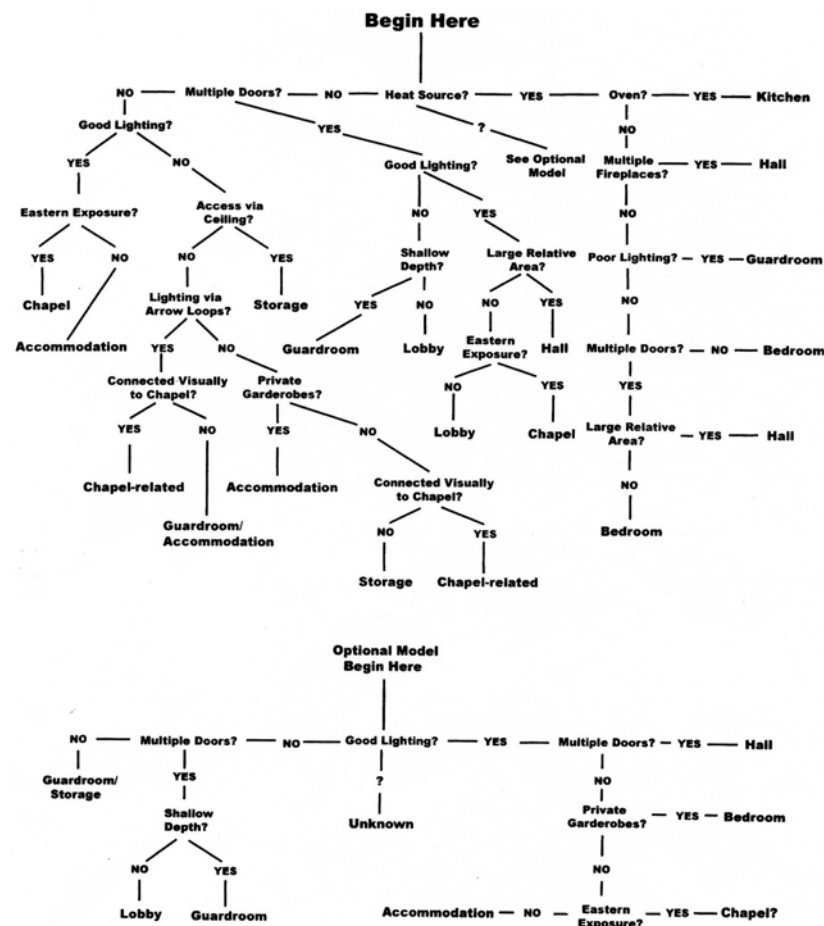
Figure 43. Mathieu's Decision Tree.

[419] Ibid., p. 124 fig. 6.
[420] Ibid., p. 123.
[421] D. Black, 'Harewood Castle', Archaeological Journal, Vol. 125 (1968), p. 339.

In his chapter describing how the White Tower influenced the construction and layout of other great towers, Dixon uses a method of analysing space, examples of which are below (Figures 44 and 45).[422] The method develops through the chapter in terms of the detail offered for the plans of different structures. The first example is for the wooden donjon at Ardres, near Calais, which is a rather basic diagram. Here, as throughout Dixon's spatial analysis diagrams, 'the greater the seclusion of the room, the darker the hatching'.[423] This makes the diagram useful even though it is open to interpretation;[424] for example, it is helpful to see the single space in the White Tower diagram labelled 'chamber' divided into public and private areas. In the diagrams that follow, Dixon progressively increases the information on the diagram through the inclusion of garderobes and fireplace, which are of use in the identification of elite space, together with wells and an arrow to denote the building's entrance. A weakness of Dixon's method is that corridors and doors are shown as horizontal lines and thus the direction that the door opens – so useful in defining if the person inside or outside the space had control of it – is omitted. Stairs are denoted by vertical lines that do not distinguish between stair types – straight or spiral – and occasionally, because the same icon is used for corridors and stairs but turned through ninety degrees, can lead to confusion without a plan of the building at hand to assist interpretation.[425]
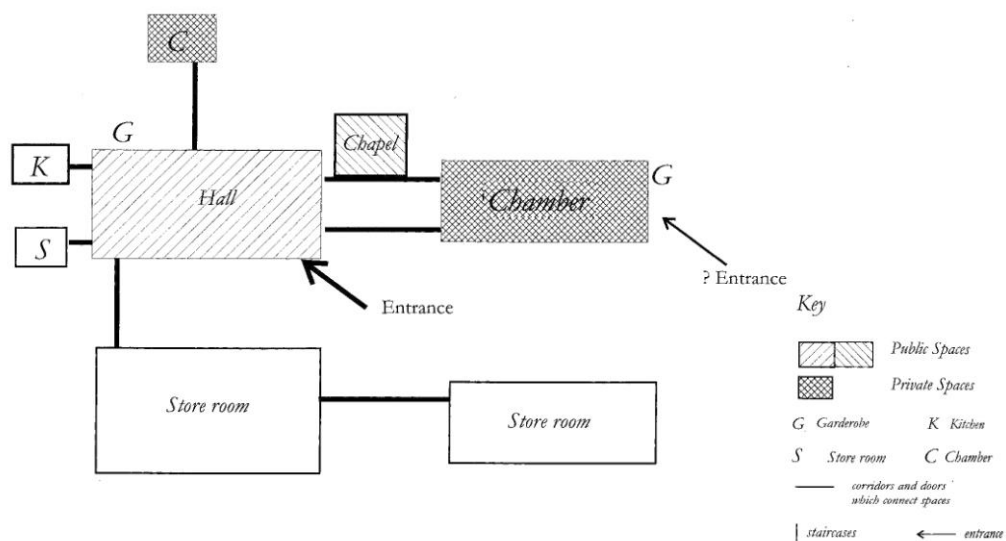
Figure 44. Dixon's Diagram of Castle Rising Keep.

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[422] Dixon, 'The Influence of the White Tower', pp. 243-275.
[423] Ibid., p. 244.
[424] Ibid., p. 245.
[425] Ibid., pp. 243-275.

Some forty years after Faulkner published his work, Richardson published a method of access analysis that she developed to assist her research into 'transformations in the form and layout of castles and palaces'.[426] Focusing particularly on English royal palaces, her research explored routes through buildings to the queen's apartments and their decoration, concluding that these apartments were 'isolated from public buildings and from ceremonial routes through palace complexes' and are seen as 'private' space rather than the king's 'public' space.[427] In reaching these conclusions, Richardson draws from the work of Hillier and Hanson where they describe how any artefact has a function and a meaning, although it can be difficult to determine where one ends and the other begins.[428] Buildings create and order empty space and the ordering of space in buildings is the ordering of relations between people.[429] These ideas are explored further later.
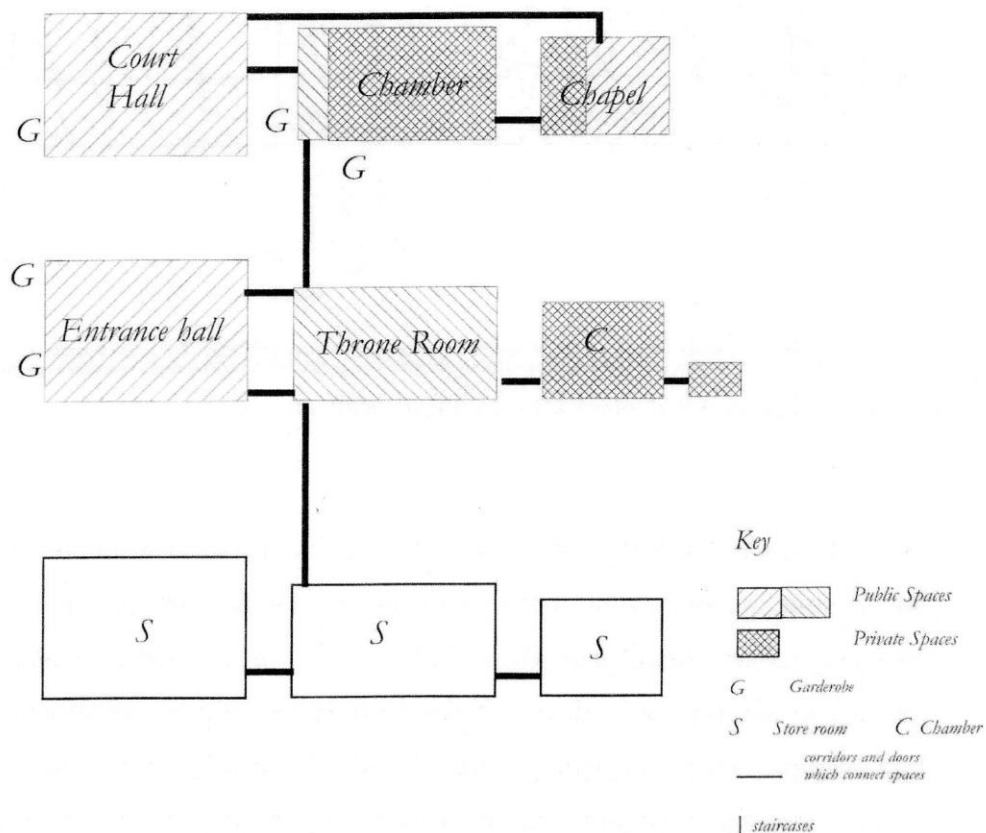
Figure 45. Dixon's Diagram of the White Tower.

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[426] A. Richardson, 'Gender and Space', pp. 131-165.
[427] Ibid., p. 163.
[428] Hillier and Hanson, Social Logic of Space, p. 1.
[429] Ibid., p. 2.

Richardson brings a freshness to spatial analysis of castles by including representation of spaces that had previously been dismissed, for example the corridor, lobby, stair and threshold (Figure 46). Because Richardson devised her method for specific research into gender and space, it requires differentiation between 'Queen space' and 'King space' and this leads to an overload of images on the diagram.
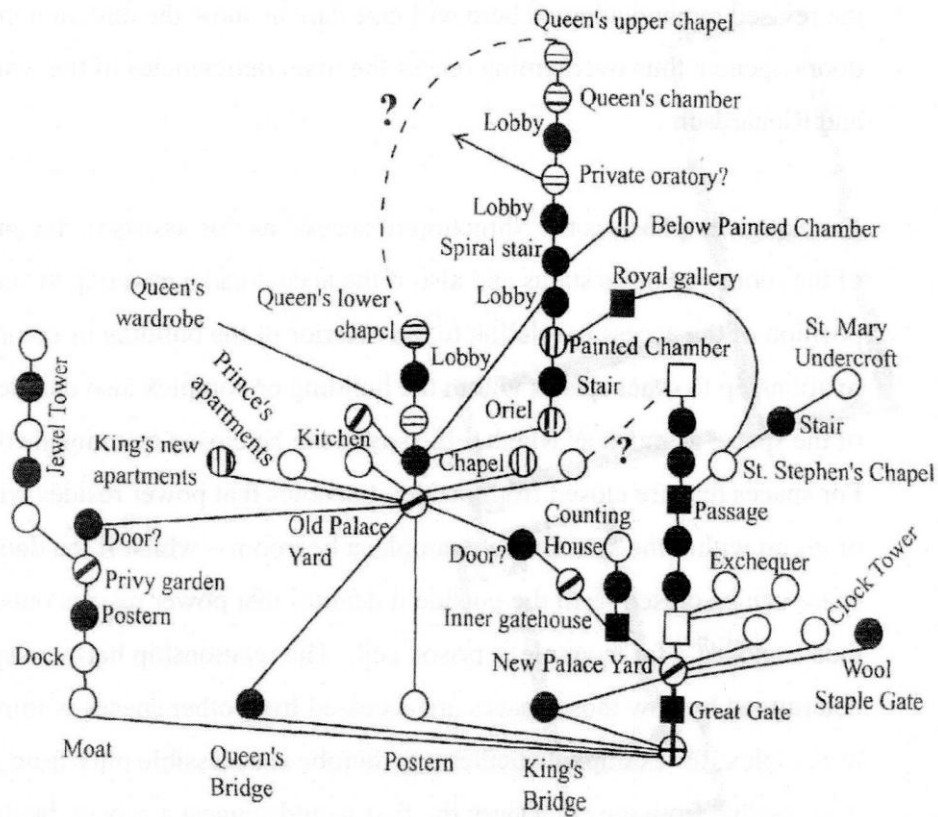
Figure 46. Richardson's Diagram of Westminster Palace *circa* 1360.

One of the strengths of Richardson's method is that she differentiates between 'transitional space' and 'transitional/symbolic space';[430] for her, 'transitional space' 'merely suggest a passageway, lobby or the like, whose primary function is to give access to other areas,' whilst 'transitional/symbolic space' 'distinguishes an elaborate gateway from a mere passage'.[431] Diagrammatically, a passageway, lobby and stair have the same symbol in Richardson's method but are differentiated by labelling, for example 'stair'. This labelling appears to be inconsistent in that the terms 'stair', 'spiral stair', 'stair down', 'central bay stair',

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[430] Richardson, 'Gender and Space', p. 133.
[431] Ibid., p. 132.

'privy stair', 'stair(?)' and 'steps down' are all employed at different times, while some transitional spaces have no label. Moreover, like Dixon, Richardson does not indicate the direction in which doors open, which is unfortunate as doors denote the limit of space within buildings: this is important because the direction in which a door opens and from which side it can be secured may be an indicator of the main direction of flow and of more private space. In the case of 'doors' that are raised, the more private space is considered to be the space on the side of the door where access to the raising mechanism is to be found.

Richardson concludes that 'non-distributed routes are indicative of hierarchical societies, since there is less scope to move freely from room to room' and this fits with this thesis's interpretation of the use and meaning of spiral stairs. She goes on to state that 'The converse is held to be true of distributed ('ringy') routes, generally the product of spaces incorporating more than one point of access.'[432]

Development of a New Methodology

It is proposed, therefore, that the work of Faulkner, Mathieu, Dixon and Richardson be taken as a basis for developing a more useful method for interpreting castles with particular reference to this thesis. All four have fed in to the new approach to a greater or lesser extent, specifically from Faulkner the use of arrows to show entrances is continued, as well as the relationship of spaces by height (the higher up the page the higher in actuality); and from Mathieu the noting all spaces, including passages and stairs. Conversely, the revised method adopted here will take care to show the direction in which doors opened, thus overcoming one of the main deficiencies of the work of Dixon and Richardson.

Fairclough emphasises the 'direction of access' as this assists in the interpretation of the room and of its status and also if the access had a meaning in society.[433] The position of the access in relation to the exterior of the building or complex and its relationship to other spaces within the building or complex also denotes the status

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[432] Ibid., p. 132.
[433] Fairclough, 'Meaningful constructions', p. 353.

of the space, as much as whether the space can be closed from inside or outside. For spaces that are closed from inside, it denotes that power resides with the person or group within the space – for example, a bedroom – whilst if the door to the space can be closed from the outside it denotes that power resides outside the space thus enclosed – for example, a prison cell. The relationship between spaces is determined by how those spaces are accessed from other spaces within the building or complex, for example, whether a garderobe is accessible only from a chamber or is accessible from the courtyard: the first would suggest a private facility and the latter a public facility.

Thus, considering the importance of the direction in which doors open, a notation to indicate the direction of opening was developed. The inclusion of the following notations that determine the limits of a space (that is, some form of door or threshold) further refines this:

1. '**b**' - doors opening **out** to the **left**
2. '**d**' - doors opening **out** to the **right**
3. '**p**' - doors opening **in** to the **left**
4. '**q**' - doors opening **in** to the **right**
5. '**bd**' - double doors opening **out**
6. '**pq**' - double doors opening **in**
7. '**O**' - no door, just an opening
8. '**#**' - portcullis
9. '**Y**' - a yett
10. '**J**' - a turning bridge or similar
11. '**T**' - a trap door (usually assumed)
12. ⬜ - clockwise stair
13. ⬜ - an anticlockwise stair
14. ⬜ - a straight stair
15. ⬜ - a passage

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As the medieval period progressed, more people became entitled to private space, leading to an increase in the size of many castles and the construction of very large new castles, such as Edward I's in North Wales and the multi-storey residence of Bolton Castle. This increase in demand from individuals in the household for their own private space led to an increase in private chambers linked to spiral stairs. For example, at Conwy, seven of the eight towers have spiral stairs that reach from the ground to the top of the tower.

Mathieu has illustrated how the function of a room can be interpreted by the features contained within it and this is supported by Foster.[434] Fairclough supports Foster when he writes,

> Function in a room can be identified from a variety of evidence…size, furnishings, treatment of floors, provision of light and heat, standard of decoration, possession of subordinate private chambers and, if so, whether these are shared, the proximity to or isolation from central rooms, relationship to defended or specialised entrances.[435]

Thus in the model proposed in this thesis, the features of a room are noted in the approximate position in which they are found and the inclusion of those features (Feature Analysis) adds to the usefulness of this method. To represent the features of the rooms the following notation is used:

1. '**A**' for each arrow loop or slit
2. '**F**' for the position of each fireplace.
3. '**G**' for the position of each garderobe.
4. '**P**' for the position of each piscina.
5. '**S**' for the position of each permanent seat including *sedilia*.
6. '**U**' for the position of a well.
7. '**W**' for the position of each window opening including window slits.
8. '**xxxx**' for a screen.

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[434] S. Foster, 'Analysis of spatial patterns in buildings (spatial analysis) as an insight into social structure: examples from the Scottish Atlantic Iron Age', <u>Antiquity</u>, Vol. 63 (1989), pp. 40-50.
[435] Fairclough, 'Meaningful constructions', p. 355.

9.   '━━━━━' denotes a draw bar.

As seen earlier, Foster has suggested a correlation between room size and status of its user or group of users, and in similar vein, the height of the room from the ground is relative to its status. In this new model, the space taken in the diagram represents – approximately – the floor area proportional to other rooms' actual size and the space at the bottom of the diagram is the lowest in the actual structure (usually the basement or ground floor), with the spaces above approximately proportional to their actual height from the ground. The introduction of the compass direction to the diagram may assist future researchers to consider further castle research questions, for example, whether garderobes in crusader castles are mainly found on the south side of the structure. Further, the external walls of the castle are represented through shading. This assisted in the research when assessing the location of spiral stairs in relation to external walls and through that the vulnerability of the wall to impact of attack due to the thinness of the external wall at that point.

This new diagrammatic method offers several advantages. It was and can be used: to assist in defining flows of people through castles and in highlighting restrictions upon those flows; to delineate private, semi-private and common spaces; to determine the level of comfort in each of these spaces; to help identify where spirals may have been additions; and in these ways to make a significant contribution to our understanding of and to debates about castles. Once a sufficiently large amount of information is gathered and shown in this diagrammatic form, it is feasible to develop general rules to predict building layout from partial remains, possibly assisting in the logical reconstruction of damaged castles and even in the 'backward engineering' or reconstruction of 'modernised' castles, that is reconstructed medieval castles. Also, following Hillier and Hanson's concept that the 'spatial organisation in society is a function of differentiation',[436] further research employing these diagrams may help reveal more about medieval society.

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[436] Hillier and Hanson, The Social Logic of Space, pp. 142-143.

Using the proposed method as a basis, it becomes a relatively simple matter to adjust the diagram to denote space by gender use or by allocation of the age of occupants or by any other form of categorisation required by the researcher. This could be arranged by the use of shading or colour.

This new diagrammatic and analytical method has been devised as a means to an end, namely to help assess the role and meaning of spiral stairs in medieval castles. Accordingly, on grounds of space this new method cannot be applied in full within this thesis to all the castles discussed here. However, in order to demonstrate its practical application, to illustrate its advantages over earlier diagrammatic methods and to show the type of conclusions which can be reached when employed, the remainder of this chapter will be given over to three case studies, comprising newly drawn diagrams and accompanying textual analysis. The three castles selected are the White Tower, Conisbrough Castle Keep, South Yorkshire, and Castle Rising Keep. This trio has been selected as offering a variety of spiral and non-spiral stairs and of stairways linking very different parts of a castle as well as throwing up problems and questions and as pointing to possible new interpretations.

Applying the Method: The White Tower

The White Tower (Figure 47) is represented below in the method created by the author based upon Harris's reconstruction of 1100.[437] The diagram below is then used to develop a description of movement around the interior of the structure relative to the ideas in this thesis (Figures 48 and 49). What is of note is that there is a great deal of physical space in the White Tower.[438]

Following the concept of a pyramid of power, few people would have had access to the castle grounds, fewer still to mount the stairs to the entrance and from that point onwards the numbers who would be permitted access decline with distance from the entrance and the height from the entrance floor.

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[437] R. B. Harris, 'The structural History of the White Tower 1066-1200', in Impey, The White Tower, pp. 29-90.
[438] G. D. Keevill, Medieval Palaces: An Archaeology, (London, 2000), p. 92.

On entering through the double doors into the entrance hall the visitors would be met with a view of a very large room on the Entrance Floor and the hierarchy would be clear, for the fireplace is offset towards the end furthest from the door, where there are also garderobes that would not be clearly visible beyond the crowd. For anyone to use these garderobes, it would be necessary to pass through the crowd and thus up through the hierarchy of those in the room. It is probable that some of the people lower down the pyramid of power would not access these garderobes. In the spine wall to the right of the entrance are two doors – one at each end of the room – that may also not be clearly seen from the entrance. The direction in which the doors open and the placement of a drawbar for the door nearest to the entrance indicates that access to the inner room is controlled by those within the inner room and that access via the door nearest to the entrance is more strictly controlled. This inner room has a fireplace offset to the south-east.

Figure 47. The White Tower.
Illustrating the corner turrets containing the smaller spiral stairs.
Photographer: C. Ryder.

Once inside this inner room, other than the two exits to the entrance room, there is a door to the south and a door in the north-east corner. To the south, the door opens into the lower floor of the chapel and off the chapel is a small room without windows. This room was probably for the priest to rest and take early and late services. Entry into the chapel and annexe is controlled from within the chapel at Entrance Floor level.

To the north-east, the door opens into a short passage leading to a clockwise spiral stair giving access to the basement and to the higher floors and the wall walk. Access to this passage and the spaces beyond is controlled from inside the passage. The persons who would ascend using this spiral would require a higher level in the pyramid of power than those who could not ascend.

The spiral is also the single access to the three rooms in the Basement where there is a well in the room farthest from the stair. All the rooms in the Basement are locked from the direction of the stairs, thus indicating that the persons on the stair side of the door have control of the space.

At First Floor level, entry was along a short passage and then through a door into a large room with a fireplace offset at the far end. The room is well equipped with two garderobes. In parallel to the Entrance Floor, there are two doorways through the spine wall and one to the chapel in the south wall. Again, these doors are controlled from the rooms beyond, supporting the concept that the rooms beyond are more private again than the one from which they lead.

In the large inner room at First Floor level, well lit with nine windows and with a fireplace offset towards the north, there are two spiral stairs – one in the north-west corner and one in the south-west corner and neither have doors. These are both accessed from a window niche and as such would not be easily found by someone new to this room. Both spirals rise to the wall walk above and the anticlockwise spiral to the north-west has a garderobe off without a door. In the south-east corner there is a door to the chapel that is controlled from within this larger room.
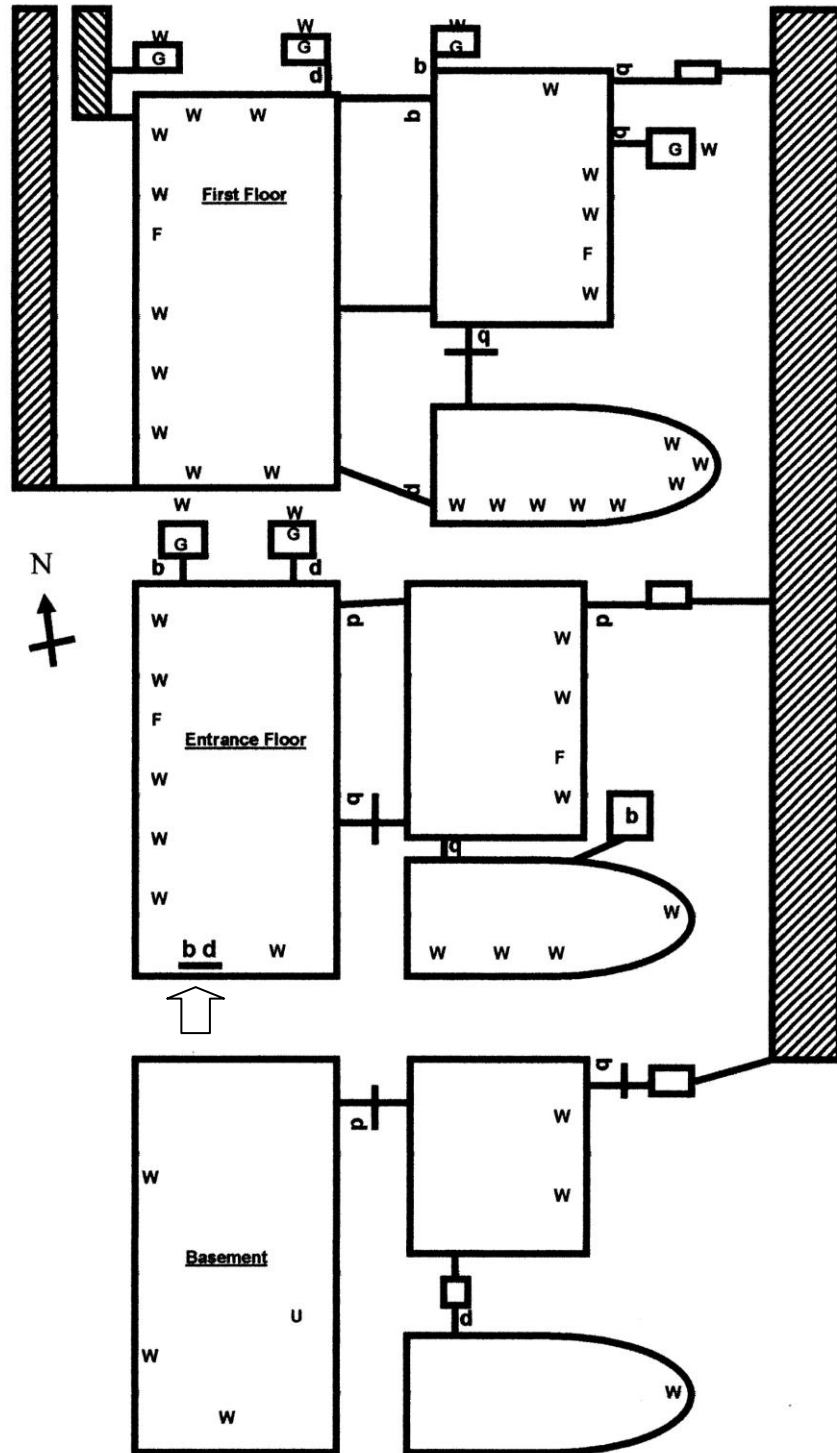
Figure 48. Diagram of the White Tower: Lower Levels.
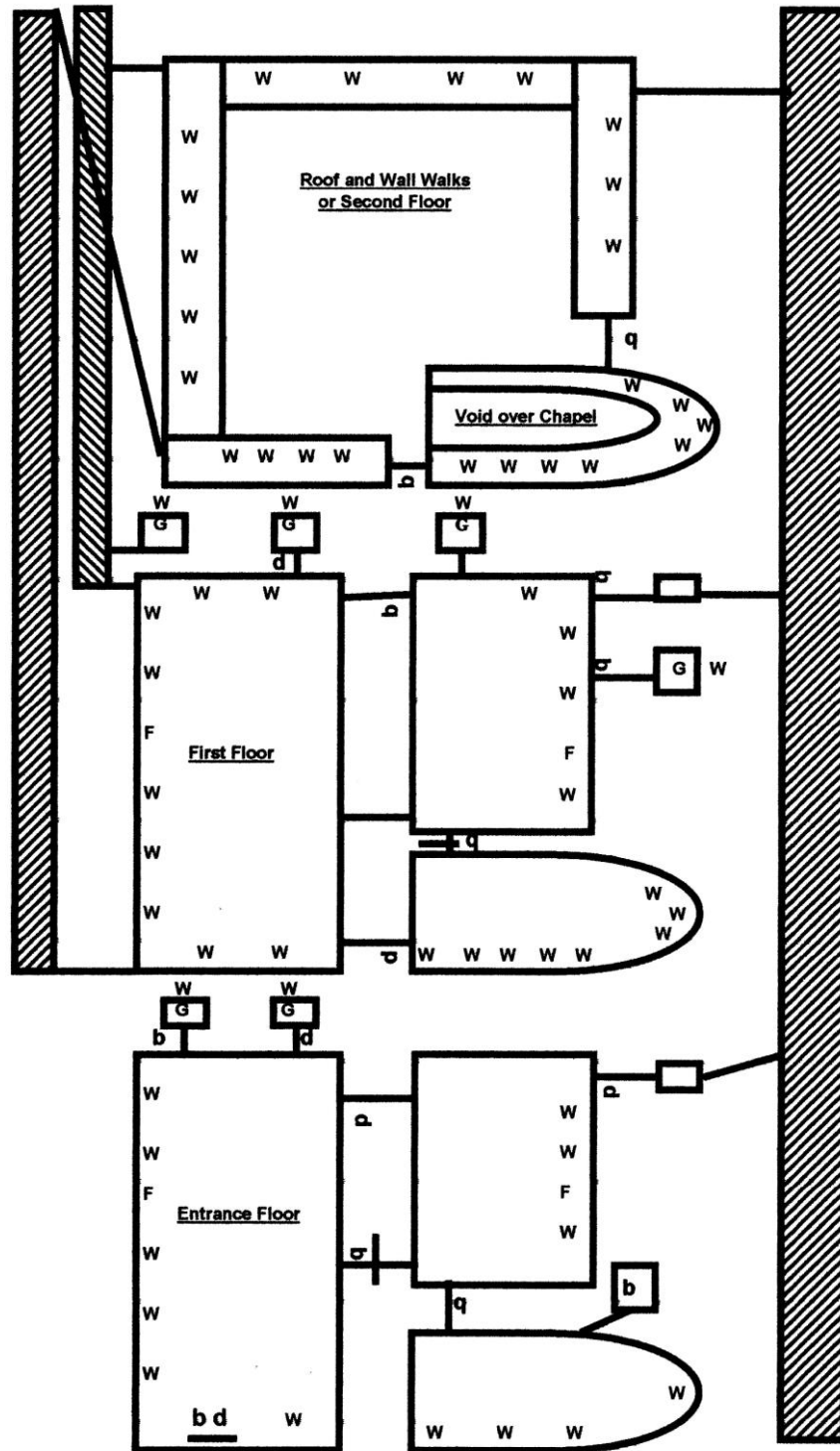
Figure 49. Diagram of the White Tower: Upper Levels.

At roof level there are wall-walks that are accessed by the three spiral stairs. It is unclear from the reconstruction if the wall walks made a continuous circuit of the top of the building or not because of changes made by Wren to the uppermost towers in the post-medieval period. The door in the south-east corner at this level leads into the upper part of the Chapel and is controlled from within the Chapel.

The second door at this level is accessed by the spiral in the south-west corner and this door is controlled from outside the Chapel. It is unclear if the spiral in the north-west corner linked to anything other than the northern wall walk.

In summary, in the White Tower doors and spiral staircases are used to direct and inhibit a flow through the structure. At Entrance Floor level, movement to the east and north away from the main entrance is restricted. At the First Floor level, the direction of restriction is the opposite, with movement to the west and south restricted by doors, with the exception of movement from the large west room into the Chapel. At Second Floor or wall walk level, the restrictions are unclear because of the uncertainty of the ability to pass through the towers at the head of the three spiral stairs. However, based on the direction in which the doors from the Chapel open, it is suggested that the wall walk was not contiguously accessible and that specific spiral stairs accessed specific parts of the wall walk; for instance the south-west and north-west spirals are more private than the north-east spiral, they start at a higher floor than the north-east spiral and there are more doors between them and the entrance to the White Tower than the north-east spiral. The north-east spiral is also wider and so indicates the likelihood of more traffic and thus of less privacy in the rooms to which it leads. In the White Tower, the spiral stairs act as delimiters of space and are extended transition areas leading to more private spaces.

From the size of the rooms and the location of the spiral stairs, it would appear that the White Tower was not designed as a residence but more as an 'office', feasting house or place of ceremony for a very powerful person.[439] The large Entrance Floor room would act as a foyer, whilst the smaller rooms on the Entrance and First Floors would act as offices for administration and state business. The large room on the First Floor would be the room where the king would hold audience and probably feasts were held here at appropriate times. It appears that the White Tower was not frequently used by the Norman kings and this links to the absence of a reasonably sized personal space in the structure. However, as Keevill notes,

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[439] Ibid., p. 94.

'we may never come to the full understanding of how the White Tower was intended to work'.[440]

Applying the Method: Conisbrough

The Keep at Conisbrough (Figure 50) is of interest as a rare example of a keep with no spiral stairs. The diagrammatical method is used here to suggest an interpretation of it using the same approach adopted at the White Tower. The earliest surviving building in the castle ward is the Keep, unique in Britain in its shape, constructed from high quality ashlar, suggesting that this was expensive, important and special to its owner. As Brown comments, this cylindrical type of donjon never became popular in England.[441]

Figure 50. Conisbrough Castle Keep.
View from outside the Bailey illustrating the unusual design with buttresses and windows.
Photographer: C. Ryder.

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[440] Ibid., p. 94.
[441] Brown, English Castles, p. 78.

The diagram below (Figure 51) is based upon Forde-Johnson's published work and upon new fieldwork.[442] A masonry ramp leading to a turning bridge gave access to the Keep's only external plain doorway at ground floor level and on into a high passage. The passage leads into the main circular ground floor room which lacks natural light other than that from the entrance passage. The floor of this room sits on top of the vaulted basement below and in its centre is a hole to give access to the basement level and to its well. Johnson considers that the basement and ground floor were purely for storage, but we might question whether a lord would invite his guests into his home, or enter it himself, through an undecorated doorway and a dark passage.[443]

The ground floor is linked to the first floor with an intramural stair leading from the entrance passageway that follows the curve of the structure. Turning left at the top of this stair leads to a short passage and then on through a doorway into the room itself almost opposite the grand columned fireplace, the largest hooded fireplace of its time; this entry opposite the fire is typical of many principal rooms in castles. The room, although poorly lit by a single window above the keep entrance with window seats, has a washbasin and a garderobe, accessed from the main chamber via a short doglegged passage. In order to ascend through the building it is necessary to cross the room at the far end from the fireplace. This could be interpreted as for defensive reasons to fight across each floor but it is well worth considering that this could have been a processional route.

An intramural stair rises from the first to the second floor where there is a smaller fireplace and a piscina, along with a window with window seats. Again, the doors to the stairs are almost opposite each other and at the far end from the fireplace. Off the passage leading to the stairs to the roof is a garderobe. Also directly off the main second floor room on the east side a short passage leads to a conspicuously small chapel, perhaps no more than a private oratory, off which there is a small second chamber with a piscina, perhaps intended for the use of the priest. At wall

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[442] J. Forde-Johnson, <u>Castles and Fortifications of Britain and Ireland,</u> (London, 1977), p. 97.
[443] S. Johnson, <u>Conisbrough Castle,</u> (London, 1988), p. 15.

walk level are number of features built into the buttresses, including a dovecote, an oven and two water tanks.
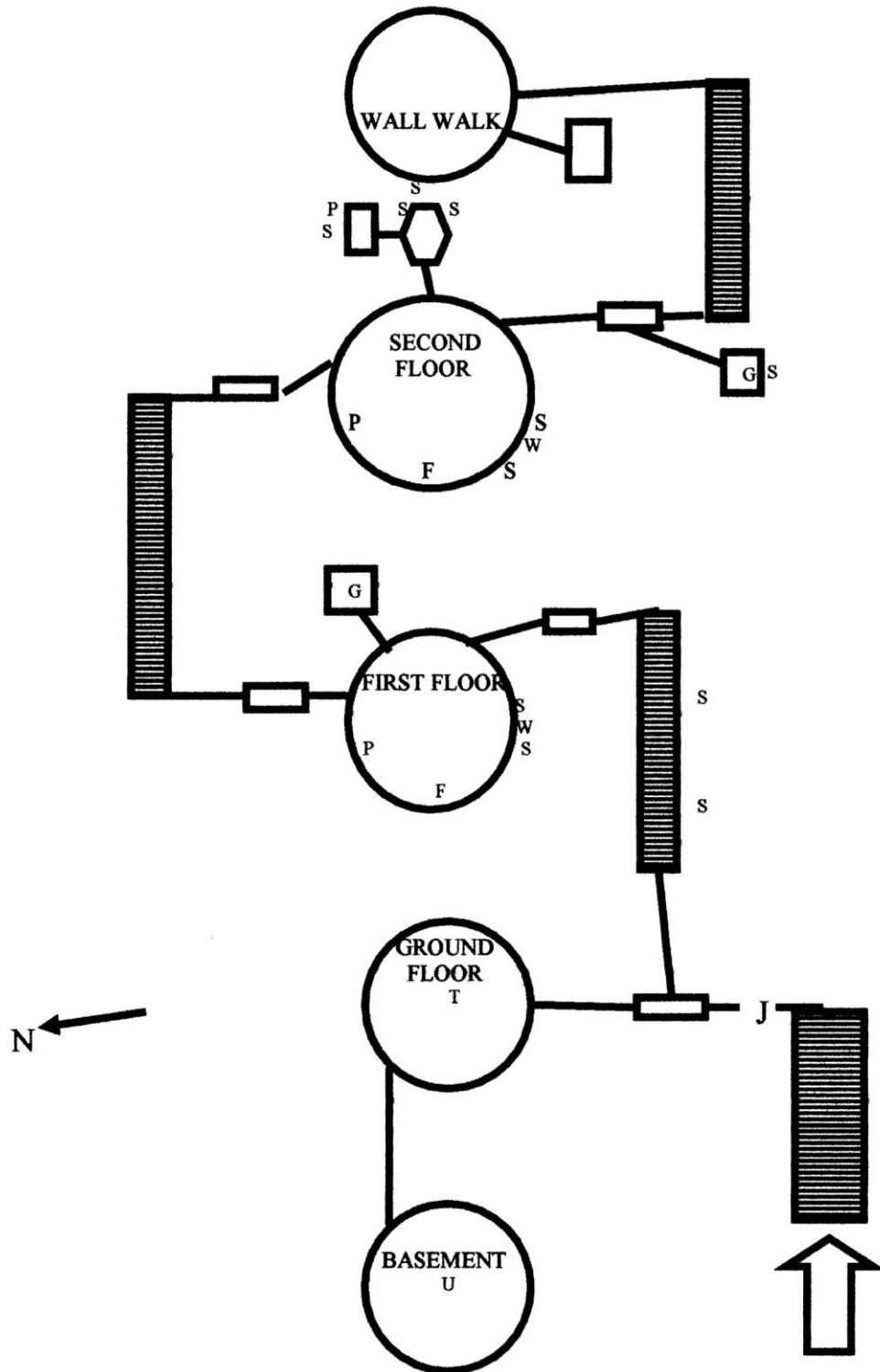
Figure 51. Diagram of Conisbrough Keep.

In summary, the Keep at Conisbrough is unusual in its shape, in the darkness of the interior, in the use of wide stairs not quite suitable for two people abreast but for one in a full cloak and armour and in the abundance of piscina, these last features perhaps indicative of a processional route. The two upper floors have all the features for use as a great hall – although rather small – and a private chamber of a lord. However, there are no signs of spiral stairs that would be expected to access the private space of the lord. This lack of spiral stairs would indicate that Conisbrough was not a residence but a place of ceremony for a small select group, and with the number of piscina and the fact that the washing of hands was a prerequisite of worship, the ceremonies were, it is suggested, in some way religious.

Applying the Method: Castle Rising

Castle Rising Keep (Figure 52) was chosen as the third case study because it is an example of a later great tower constructed by a recently elevated lordly family that appears to reflect their need for acceptance. The reassessment of this building is based upon fieldwork and published sources and the diagrammatic reconstruction offered here (Figure 53) seeks to throw light on the design of the keep itself as well as reflecting its links to the wider landscape of Castle Rising.

As Liddiard has demonstrated in his assessment of the landscape of lordship at Castle Rising, a distinguished visitor to the castle would be led through a developed landscape whose features were designed to demonstrate and underline the lordly status of the owner. Thus a visitor to Castle Rising would normally arrive by water up the Babingley River. His route would then take him towards the town, passing the status symbol of the Dovecote, and then on to The Isle and on to Haven-Gate Lane, from where he would be led through the town. The route would probably pass the ornate front of the church to demonstrate the wealth of the lord and lead out of the town and into the outer bailey, with a view of the Deer Park in

the distance. The original low banks would mean that the Keep would be seen from afar but not in its entirety.[444]

Entry into the castle's inner bailey would be through the Gatehouse, fitted with a portcullis. There may well have been a ceremony involved with entry through the Gatehouse and from this vantage point the visitor would gain his first full view of the Keep, faced with costly Barnack Rag stone that would emphasise the wealth of the owner. The forebuilding is side-on to the Gatehouse and runs across the full width of the Keep. The expensive arcading on the left of the forebuilding, decorated with single blind arcading, and on the right, with double blind arcading, was typical of the very ornate external decoration, all of which was probably intended to display the aesthetic and cultural tastes as well as the wealth of the owner. Entry to the Keep is through the Forebuilding, which offers a number of options for greeting visitors according to their comparative status. They can be met at the bottom step or at the middle landing or in the Entrance Vestibule at the top of the stairs, or indeed they may be met in the Great Hall itself; the more important the visitor, the further the host would travel from his seat to great him or her. Perhaps from the Forebuilding entry doors the visitor would be permitted entry to the stairs, where there is sufficient width to pass two abreast or to have a guard of honour standing on each side. The arch in the middle of the stair frames the upper doorway and gives a longer perspective to impress and the large windows in the Entrance Vestibule at the top of the stairs would give a great deal of light to frame anyone standing in its doorway.

From the Entrance Vestibule, there are views back across the town and out to the sea and a restricted view towards the status symbols of the Deer Park and Warren. The original entrance to the Great Hall was through a large and highly decorated doorway that is now a fireplace and up some steps, now no longer extant but known through the work of Dixon,[445] that would place the occupants of the Great Hall above the new visitor – quite typical of an entrance to a hall. The fire in the room was a central hearth and the lord was seated in a stone niche diagonally across from the entrance in the centre of the spine wall close to the fire. This stone

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[444] Liddiard, Landscapes of Lordship, p. 46.
[445] Dixon, 'The Influence of the White Tower', p. 255.

niche and the general design of the castle are based upon the Keep at Norwich, Norfolk and there are also stone niches in the White Tower.[446] The visitor would see this framed through the doorway and would note that the central hearth was a retro image, giving the impression that the Great Hall and its occupants were well established. The walls would have been plastered, decorated in bright colours and expensive hangings specially selected to convey to the visitor an image of the owner's interests and wealth. In the Great Hall business and ceremony would be undertaken that required witnesses – perhaps oaths of loyalty – as well as feasting. At the far end of the Great Hall from the main door are the Kitchen and one or more Service Rooms from which food and drink would emerge. Their entrances are at an angle to the lord's seat so that he could signal the timing of dishes as necessary. A doorway in the south-east corner of the Great Hall gives access to the Chapel, which appears to have been decorated in blue and white. For special visitors there is a doorway at the south-west corner of the Great Hall leading through the spine wall to the Great Chamber, where the lord would undertake private business and may have used it as a bedchamber, though this requires some further consideration given its size and the apparently overgenerous provision of two garderobes. It has two windows that look out towards the Deer Park and a fireplace is sited between them, again intended to have a visual impact upon anyone entering this space. Off this space are two garderobes and a small storage room.

There are two spiral stairs in the Keep at Castle Rising, in the north-east and south-west corners. The spiral in the south-west corner rises through the entire height of the building and links the southern chamber in the basement to the first floor, accessed via a door and short passage in the south-west corner of the Great Chamber, and then on up to wall walk level. The spiral in the north-east corner also rises through the entire height of the building and links the northern chamber in the basement, which contains a well, to the Entrance Vestibule at first floor level, and then up to wall walk level, but just below that level it also gives access via a lengthy passageway to a self-contained Upper Room without a fireplace. In the course of later medieval alterations this spiral also gave access around this

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[446] J. Ashbee, 'The Function of the White Tower under the Normans', in Impey, The White Tower, p. 135.

point to a separate upper room created over the entrance vestibule, but this was not part of the original keep and therefore is not shown on the diagram.

Figure 52. Castle Rising Keep and Forebuilding.
Illustrating the entrance to the straight stairs in the forebuilding leading up to the Entrance Vestibule.
Photographer: C. Ryder.

In summary, despite the presence of many features of an elite domestic residence, the Keep at Castle Rising falls short of giving an impression of being designed for every-day living, though it does appear to have been well equipped to host celebrations and gatherings. It is also noticeable that despite its overall size the Keep contains remarkably few principal rooms: apart from the two chambers in the basement, the only other large rooms are the Great Hall and Great Chamber at first floor level soaring to a double height. In the light of this, there would be very little need for the lord and his elite guests to move around the Keep vertically. Having entered at first floor level, via the Forebuilding and Entrance Vestibule, they would have used the Great Hall and Great Chamber at that level but probably would not have generally wished to move up or down to visit the basement or the wall walk. Accordingly, the spiral stairs may have been far more service stairs than routes of elite access.

N

GREAT HALL (OVER)

GREAT CHAMBER (OVER)

W

UPPER
ROOM
A

W

A   A A
A   KITCHEN

A

A

A

W   W   W   W   WW
A   W

GREAT   HALL   b d   ENTRANCE   W
VESTIBULE   W

A   G   CHAPEL W   W

A   G   GREAT CHAMBER
W   F   W

A   A

A   A   A   A
A
U   BASEMENT
A
b d

A

A   A   A   A
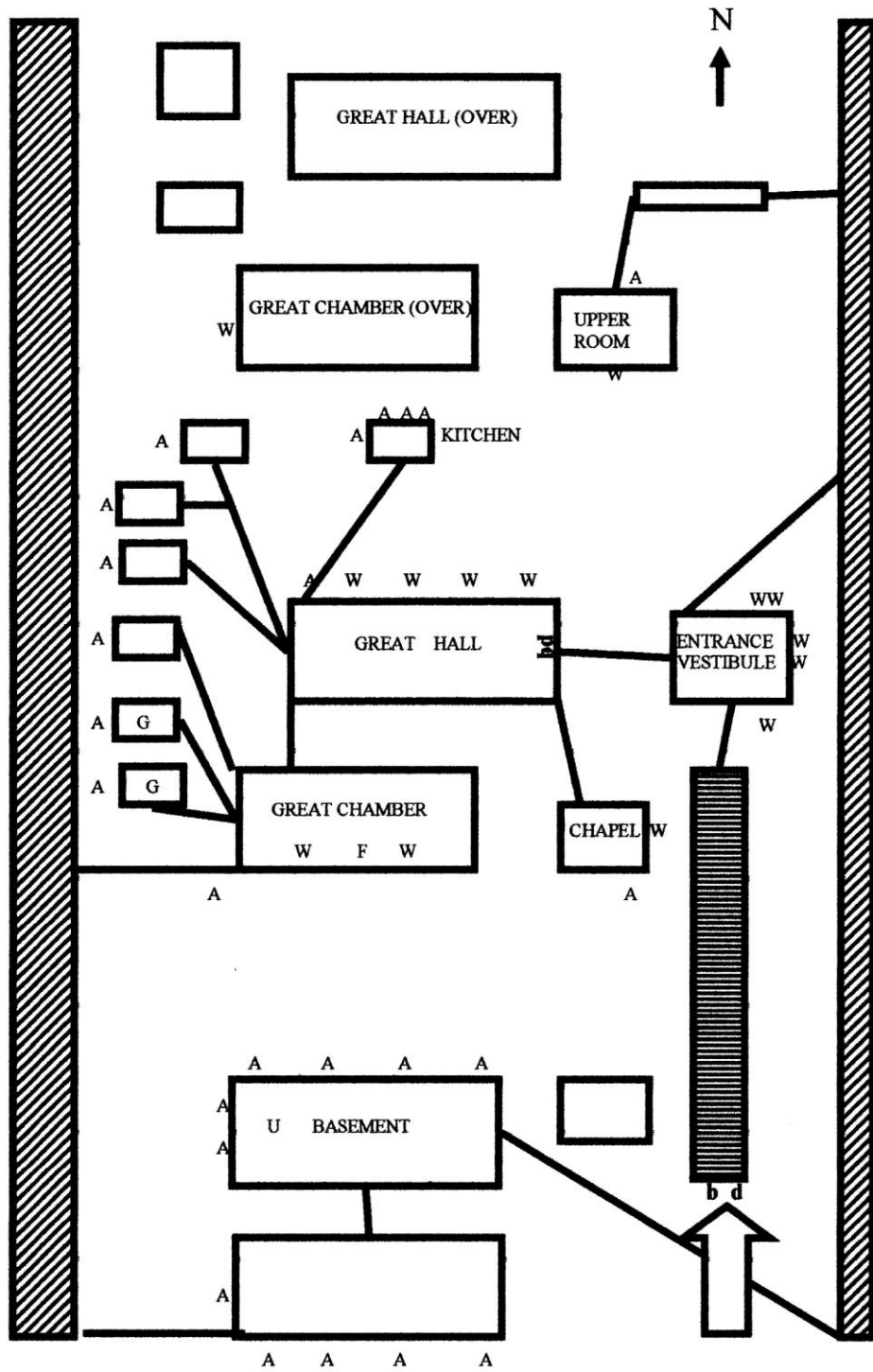
Figure 53. Diagram of Castle Rising Keep.

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Conclusions

To conclude, this chapter has introduced and analysed the principal methods of spatial analysis developed by Mathieu, Faulkner, Dixon and Richardson, all of which are useful for the specific purpose for which they were intended, although they do have their weaknesses. After analysing these methods, they were found not to be fully suitable for the fieldwork undertaken for this thesis and a new method was devised based upon many of their strengths. Although this new method was originally designed to produce diagrams to assist in the interpretation of the role and meaning of spiral stairs, it soon became obvious that it equally can be employed to interpret other features singly or in groups and the building as a whole. Using the method, some examples of spatial analysis of castles are presented at the end of this chapter and from the accompanying interpretative text, it can be seen how the diagrams assist in defining the routes through a building and the form of space accessed and, from that, in drawing conclusions about the use and status of that building. In some examples, the reinterpretation of the castle, based upon the diagrams, may shed new light upon the building and make us see afresh that which we have taken for granted, with the result that a different interpretation of the castle may be generated. It is hoped that this will encourage the use of the new method, perhaps to adapt or refine it, but above all to look with new eyes.

CHAPTER 4 – THE PHYSICAL EVIDENCE

Having surveyed the origins of the spiral stair in architecture and in castle architecture and having developed an improved method of diagrammatic representation of spiral and other stairs within a castle, this chapter turns to explore the evidence for spirals within medieval castles. Because of the paucity of surviving documentary, literary and artistic sources, this thesis in general and this chapter in particular draws very heavily upon surviving physical evidence. This chapter presents evidence about the spiral stairs based upon extensive fieldwork undertaken at a range of castles in England and Wales. Purely on grounds of length it would be impracticable within this chapter and within this thesis as whole to discuss in detail all the English and Welsh castles which have been visited and in any case such a discussion would quickly become very repetitive; equally, on grounds of length it would be impractical to present diagrammatic spatial analyses for all the castles examined, though this chapter will generally include key measurements and dimensions of spiral stairs where they are found and where the surviving fabric is accessible and in a condition where measurements can be taken. Drawing upon fieldwork conducted at over 70 castles in England and Wales, this chapter focuses on eighteen English and Welsh castles which together provide a good chronological cross-section of medieval castles, represent all the major categories of castles in England and Wales – beginning with great towers, then castles of the native Welsh, then Edward I's castles in Wales and lastly other English enclosure castles – and give a wide geographical coverage. These case studies have also been selected to highlight different aspects of the role of spiral stairs within castles. The chapter closes by exploring a further category of castle, those which have no spiral stairs. Each castle is described in terms of its location, history, historical role, current state of repair and layout in order to put the surviving spirals in context, before moving on in each case to give a detailed account of those spirals, exploring their location, structure, the spaces they linked and so forth. This textual analysis is supported by modern photographs and diagrams.

Great Towers

The great towers of medieval Europe have been variously named keep, donjon, grand donjon, *arx*, *tour maitresse*, *magna turris*[447] or proto-keep and the term that will generally be utilised in this chapter, great tower. The great tower served many functions, but three roles were particularly important: it was a residence for a lord; it was a place of defence and refuge; and it was a symbol of power and lordship. However, there was also a need for the owners to conduct many of their duties and obligations within the structure, too, and the design reflects this. These duties would include receiving payments and homage from vassals, undertaking obligations to those vassals in the social contract between them, greeting and entertaining guests for the essential networking and bonding of the times, negotiations and discussions with other lords, religious obligations and day-to-day discussions about the management of the lord's estates. Although designed as a multi-purpose structure, not all great towers were continuously utilised for either residential or defensive purposes, but their continued presence reminded those who saw them of the lord's power and might always serve as a deterrent to any challenge to that power. Because of the driving forces and the origins of the builders and users of the great towers, there are many similarities in design between them and they generally appear as self-contained units, though some specialist functions, particularly that of the kitchen, could be found outside.[448]

It is generally held that great towers are a product of tenth-century northern and eastern France and Impey supports this in seeing the great tower as a result of an 'evolutionary process' in that region.[449] He suggest that 29 great towers were extant by *circa* 1050 in northern France, stretching from Nantes in the west to Châlons-en-Champagne in the east and from Broue in the south to Amiens in the north.[450]

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[447] P. S. Fry, <u>The David and Charles Book of Castles</u>, (Newton Abbott, 1980), p. 11.
[448] Thompson, 'A suggested dual origin for keeps', p. 12.
[449] Impey, 'The Ancestry of the White Tower', p. 227.
[450] <u>Ibid</u>., p. 226.

The great tower came about through an evolutionary process that took the single storey stone structure upwards and outwards, adding facilities to increase the comfort and military ability they offered and as a result, perhaps unintentionally, enhanced the status of the owner. The earliest towers were probably at Doué-la-Fontaine, Mayenne and to the west of Paris, Ivry-la-Bataille, where a second storey was added to the masonry single storey structure of a lord. During the late tenth century there was strong rivalry between Fulk Nerra, Count of Anjou, and Odo II, Count of Blois and Champagne that appears to have been the trigger for the development of the great tower. Ivry-la-Bataille, in particular, constructed *circa* 1000 offers a little insight into the internal arrangements of the great tower at this time in that its upper room has a fireplace and the north-east apsidal projection is probably a chapel.

There is a pattern to the multifunctional design of the great towers. They would have a basement, a well, an impressive stair at the entrance to the great hall, a great hall, a chapel, a domestic stair to separate the staff from the lord and his guests, a stair to the noble apartments and those noble apartments. These spaces would be luxuriously furnished for the time with fireplaces, windows often with window seats and garderobes, representing a very high level of sophistication and luxury for the lord, his family, his retinue and visitors, but also reflecting the military role of the building there would be crenellations and small slits for arrows. With time, the great tower became an important marker of noble dignity and this may be why 'social climbers built some of the finest examples'[451] – Hedingham, Castle Rising and Conisbrough. Dixon and Marshall describe how 'the plan of Puiset's donjon followed a progression from a public hall through a Great Chamber for reception purposes, to increasingly private rooms, the chamber in the third storey being grand, ostentatious, but publicly inaccessible';[452] they note that the 'approach to the upper chamber is unknown' and that the spine is not thick enough for a mural stair and they argue that the stair was probably wooden.[453] A closer look to discover if it was possible to have a spiral stair rising to this space on the third

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[451] Liddiard, <u>Castles in Context</u>, p. 53.

[452] P. Dixon and P. Marshall, 'The great tower in the Twelfth century: The Case of Norham castle', <u>Archaeological Journal</u>, Vol. 150 (1993), p. 430.

[453] <u>Ibid</u>., p. 426.

storey would be useful because it would be more usual for a very private space of a lord to be accessed by a spiral stair.

Castle Rising

The great tower at Castle Rising was built in a poor agricultural area close to the River Babingley. Although there is evidence of prehistoric and Roman activity here, the name Rising is derived from the Old English for brushwood.[454] In the decades after the Conquest the area passed through several Norman hands and there was probably an early Norman hall and church here, based on evidence of a wooden structure found underlying the later stone castle. In 1138, William de Albini II married Alice of Louvain, Queen of England, widow of Henry I,[455] and with this marriage Albini II gained access to the wealth, status and power that she brought with her and he became earl of Lincoln and earl of Sussex and Arundel. Albini II went on to build castles at New Buckenham, Norfolk, and Arundel, West Sussex, both with round keeps, as well as Castle Rising, at an astounding cost. Perhaps driven by his new status, Albini modelled the great tower at Castle Rising on the royal great tower at Norwich nearby and the design was rectangular and not round as were his other two keeps. The castle stayed in the de Albini family until 1243, when it was inherited by Cecily, wife of Roger de Montalt or Mohaut who also held Hawarden and Mold both in Flintshire,[456] and the castle eventually fell under the control of the dukes of Norfolk. The flooding of Norfolk that created the Broads in the 1360s did not affect the castle and it appears never to have been attacked, but in later years Castle Rising, like so many other redundant medieval buildings, had stone robbed from its structure.

Construction commenced in 1140 under William de Albini II's instruction and much of what is visible today is his design. The stone used is Barnack Rag or Barnack Oolite, quarried near Stamford, Lincolnshire, and thus adding

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[454] Anon, Castle Rising, undated guide book, p. 1. See also R. A. Brown, Castle Rising, Norfolk, (London, 1987), R. Liddiard, Castle Rising, King's Lynn, Norfolk: a Short History of Castle Rising and its Owners, (Castle Rising, 2000) and R. Liddiard, 'Castle Rising, Norfolk: a "Landscape of Lordship"?' in C. Harper-Bill (ed.), Anglo-Norman Studies 22: Proceedings of the Battle Conference 1999, (Woodbridge, 2000).
[455] Brown, The Architecture of Castles, p. 30.
[456] It is from Mold that the family took its name: a derivative of Monte Alto.

considerably to the cost and status of the castle and its owner. The castle (Figure 54) has three baileys: two Outer Baileys, one to the east and one to the west, and an Inner Bailey. The banks surrounding the baileys were quite low originally and were greatly raised *circa* 1170. Entrance to the castle is and probably always was through the east Outer Bailey from the direction of Rising. The current bridge across the ditch is a century later than Albini's gatehouse to which it gives access. Today there are signs of a portcullis groove but the room above the gatehouse has gone as has most of the spiral stair that led to it. From the remains it can be seen that the stair rose clockwise and had a step width of 68 cm, with a 30 cm outer tread, a 15 cm riser and a 14 cm diameter newel. The Inner Bailey also contains the ruins of a church *circa* 1100 and stone footings to the south of the great tower are from the time of Isabella, widow of Albini, who lived here for 27 years; these footings are probably those of her suite of rooms, with a hall, lodgings and a chapel adjoining them. South from the gatehouse and across the Inner Bailey stands the great tower, accessed through a forebuilding.
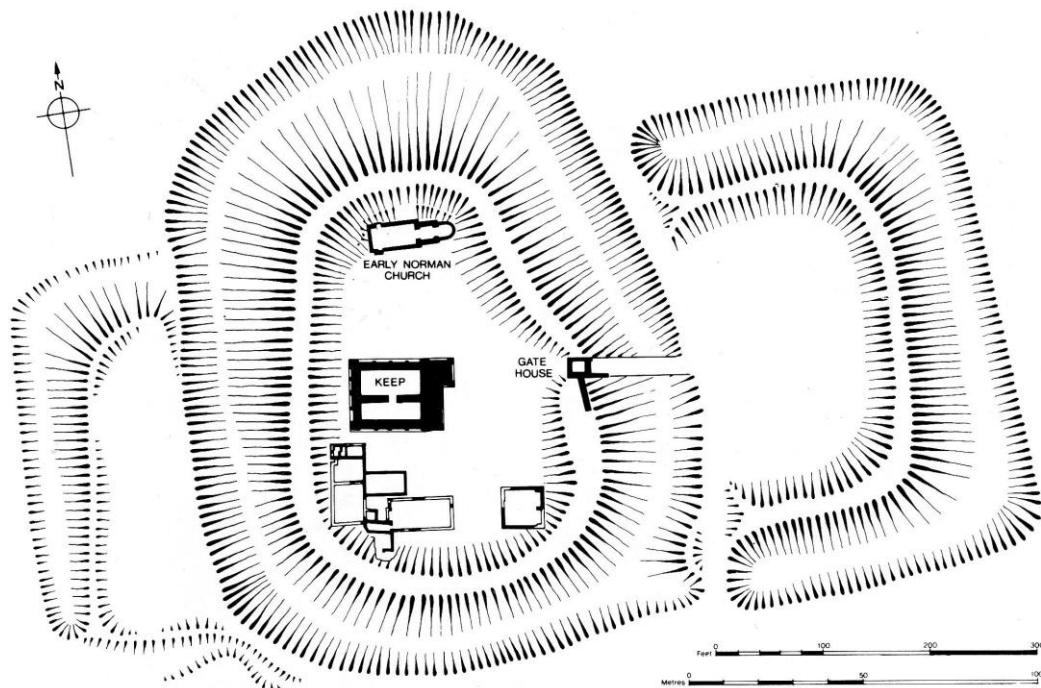
Figure 54. Castle Rising: Site Plan.
Courtesy of English Heritage.

As described in Chapter 3, the highly decorated forebuilding, with its long flight of stairs (Figure 55) and its entrance vestibule give access to the first floor Great Hall, with Kitchen, Service Rooms and Chapel off and a Great Chamber with its own

garderobes. These two large and lofty rooms are the only principal chambers found within the Keep, though below them there is a basement level divided into two areas by the cross wall. From the Great Chamber a doorway gives access to a short passage that doglegs to the right, up some steps to a spiral stair in the south-west corner of the Keep that descends to the basement and rises clockwise to the wall walk. Although observations determined the direction of these spiral stairs, the very ruinous condition of the Keep meant that no access could be obtained and thus no measurements could be taken. In the opposite, or north-eastern, corner of the great tower an apparently matching spiral stair runs up the full height of the Keep from basement to wall walk level, accessed by a short stretch of straight stairs from the Entrance Vestibule at first floor level. These stairs are fully accessible and measurements were taken. These stairs rise clockwise, with a 103 cm wide step and 35 cm wide outer tread, a 15 cm riser and a 25 cm diameter newel.[457] At the bottom of this stair in the basement it has a narrower step, just 95 cm wide, but the other dimensions are unchanged.

Figure 55. Castle Rising: Inside the Forebuilding.
Illustrating straight stairs leading to the Entrance Vestibule.
Photographer: C. Ryder.

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[457] It seems reasonable to assume that the inaccessible spiral stair is of the same dimensions.

The Keep at Castle Rising appears to be very closely modelled on the earlier Keep at Norwich and thus the kitchen fireplace at Castle Rising is in a similar position to that in the great tower at Norwich Castle (Figure 56). It is generally held that the space where the fireplace at Norwich is now found was originally intended to be a third spiral stair but in the event it seems that no spiral was ever built there and instead a fireplace and flue were inserted into the curving corner wall where the spiral had been intended. Castle Rising imitates this in that at first floor level a circular space has been created in the north-western corner of the Keep, raising the possibility that at Castle Rising, too, there may have been plans for a third spiral in the north-west corner. The evidence is inconclusive and there is no sign of a void in the north-west corner at basement level, where the walls are thick and solid, so it seems unlikely that there was ever an intention to have a third spiral running the full height of the Keep. Moreover, fieldwork did not discern any traces of a spiral stair in this position either here or at Norwich.

Figure 56. Castle Rising: Kitchen Fireplace.
Illustrating the fireplace where the third spiral stair was supposed to be constructed.
Photographer: C. Ryder.

It has already been noted, following the diagrammatic analysis of this Keep in Chapter 3, that the two spiral stairs seem unusual, as they probably played a service role rather than giving access to any lordly accommodation. All the elite accommodation is found at first floor level, which is also the entrance level, and so there would be little need for elite movement vertically in the Keep via the spirals.

Helmsley

Helmsley Castle, North Yorkshire, was constructed by Walter Espec in the 1120s but most of the stone structures were put in place by Robert de Roos I in the thirteenth century and were much 'strengthened and modernised' during the Middle Ages (Figure 57). What remains today is a result of it being dismantled during the civil war.[458] From the Outer Bailey, to the south-east of the castle, entry is made through the South Barbican and South Gate. This barbican has a turning bridge and a portcullis and with this combination, a spiral stair leading up to elite rooms above the gate would be expected. On the west side of the South Barbican there may be traces of a spiral stair but not enough to measure or even to be certain of its existence. The South Gate is much ruined but was equipped with a turning bridge, doors and a portcullis.

The East Tower (Figure 58) overlooks the town and was originally two-storeys high, with the first floor containing a double height chamber denoting a high status space – Coppack interprets this as the late twelfth-century chapel.[459] In the fourteenth century the double height chamber was divided horizontally into two and a further storey added above. The current straight eight stepped stairs – 165 cm wide, with a 28-33 cm tread, a 20 cm riser – down from the bailey to the basement through a 147 cm doorway are from the fourteenth century. The original access to the basement was from a spiral stair in the north-west corner of the tower. The doorway in the basement is 88 cm wide and leads to a clockwise spiral stair,

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[458] G. Coppack, Helmsley Castle, (London, 1990), p. 1. See also J. Clark, Helmsley Castle, (London, 2004), W. Simpson, 'The Development of Helmsley Castle' in A. Small (ed.), The Fourth Viking Congress, (Edinburgh, 1965), G. Coppack, 'Helmsley Castle', Archaeological Journal, Vol. 154 (1997) and P. Wilson, 'Excavations at Helmsley Castle', Yorkshire Archaeological Journal, Vol. 61 (1989).
[459] Coppack, Helmsley Castle, (1990), p. 8.

with a 93 cm wide step, an outer tread of 35 cm, a 23 cm riser and an 18 cm newel but there is no sign of slits to give light. This stair continued up to give access to the new second floor, where a new spiral was constructed giving access to the roof and wall walks. Coppack states that there is a clockwise spiral from the new second floor up to the roof or wall walk but this was too ruinous and inaccessible to measure.[460] Strangely, the doors accessing this spiral do not exactly marry up to the floor level of the new second and third floors but require wooden ladders to step up to the stair.
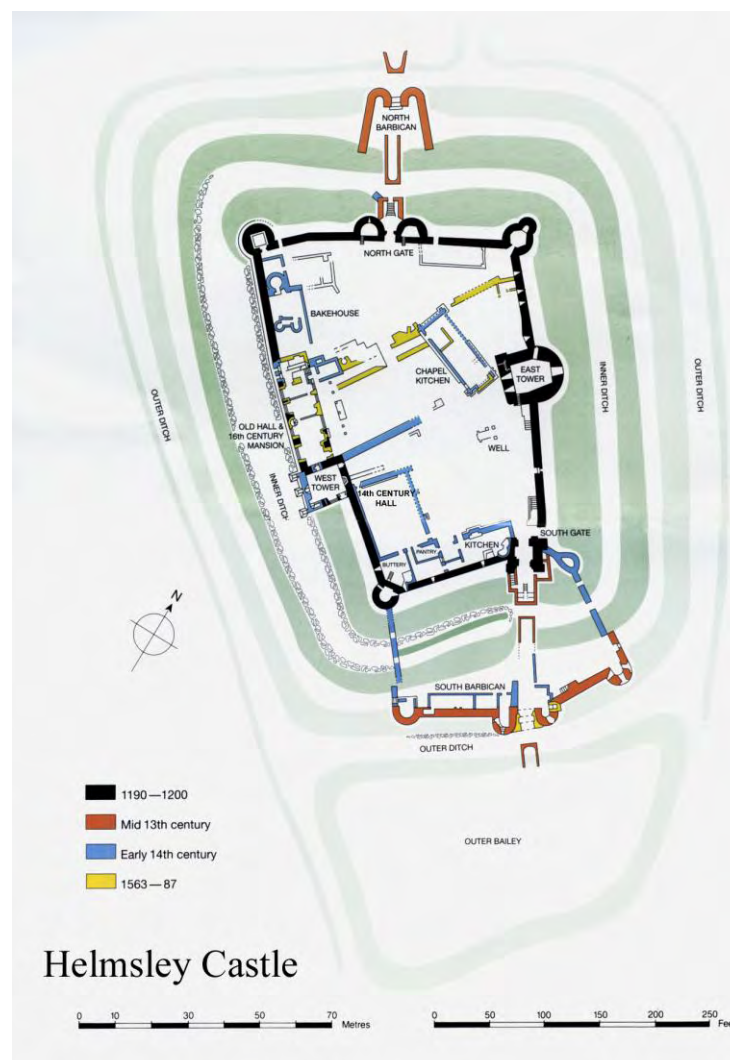
Figure 57. Helmsley Castle: Site Plan.
Courtesy of English Heritage.

The Hall and Services Range was created in the fourteenth century. The hall was single storey with a central hearth and a masonry bench along the north wall next

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[460] Ibid., p. 8.

to the private chambers in the West Tower. From the Buttery there is a set of straight steps – 91 cm wide, with a tread of 50-55 cm and an 18-22 cm riser – leading down to the basement of the tower in the south-west corner. The West Tower, in its position next to the lord's end of the hall, can be designated as the lord's private chambers and as such it is reasonable to expect that there will be a spiral stair in this tower. This is the case and there appear to be remains of a spiral – direction unclear – on the north wall from the first floor to the roof, which Coppack dates to the fourteenth-century changes,[461] and there is also a possible spiral stair on the south wall but this is uncertain given the very ruinous state. The method of access to the first floor remains uncertain.

Figure 58. Helmsley Castle East Tower.
Photographer: C. Ryder.

The West Tower is linked to the Old Hall and sixteenth-century mansion by seven straight steps to a 97 cm wide door opening into the Old Hall. The steps are 102 cm wide, with a tread of 25 cm and a 20 cm riser and these may date to the sixteenth century when the Old Hall was converted to a mansion. As part of this conversion, an anticlockwise spiral was added that links the Inner Ditch to the Old

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[461] Ibid., p. 14.

Hall. The doorway is 78 cm wide and the width of the step is 80 cm with an outer tread of 30 cm, a riser of 23 cm and a newel of 18 cm.

Both of the apsidal towers in the North Gate have straight steps leading down to the basement of the tower from the bailey. The tower to the west has straight steps that are 109 cm wide, with a tread of 38 cm and a riser 18 cm, whilst the tower to the east has straight steps 109 cm wide, with a tread of between 17 and 61 cm, risers generally of 20 cm but there is one riser of 15 cm. Neither tower has sign of a door.

In summary, Helmsley is much ruined and the location, direction and measurements of its spiral stairs are difficult to ascertain, but it is clear that a spiral existed in the private chambers of the lord next to the hall, in this instance beginning at first floor level and leading up to the more private elite spaces above. Although it is difficult to reach conclusions about the spaces in the other towers and the original access to them, what is clear at Helmsley is that there is a spiral which plays its usual role, giving access to the private chambers of the lord and leading from a more public to a more private space.

Hedingham

The great tower at Hedingham (Figure 59) is one of the best preserved Romanesque great towers in Britain and is sited on a low mound overlooking the River Colne flowing towards Colchester and into the Thames Estuary.[462] It was constructed *circa* 1140 by Aubrey de Vere II, Great Chamberlain of England, and may have been designed by William de Corbeuil. The great tower stands some 34 metres high with walls some three and a half metres thick whose original ashlar facing – now removed – was made from Barnack Rag[463] and would have been transported at great expense by water and land to the site, whilst the main wall structure was composed of flint and rubble bound with mortar. The putlog holes

[462] Dixon and Marshall, 'The Great Tower at Hedingham Castle', p. 16. See also M. Brown, Hedingham Castle, Castle Hedingham, Essex, (Cambridge, 1995) and D. Andrews, 'Castle Hedingham' in N. Pounds (ed.), The Colchester Area: Proceedings of the 139th Summer Meeting of the Royal Archaeological Institute, 1992, (London, 1992).
[463] Also used at Castle Rising.

visible today follow a horizontal line – as opposed to the diagonal line in Edward's castles in Wales – indicating that the construction was most probably by masons based in England.

The great tower at Hedingham is approached across the Inner Bailey and was entered at first floor level at approximately four metres above ground level. A straight external stair led up to the decorated entrance doorway with a portcullis and there are signs that the stair was covered by a forebuilding; from the evidence of neatly cut holes in the wall, it was not part of the original structure but was keyed-in to the tower later. At the top of the external stair a right turn brings one to the entrance. Under the external stair and immediately in front of the doorway is a chamber described as a 'Dungeon', although there must be some doubt about this because of its location.

Figure 59. Hedingham Castle Keep.
Illustrating first floor entrance and left-hand tower containing the spiral stair.
http://www.castlexplorer.co.uk/england.

The first and entrance floor is designated 'Guardroom' or 'Garrison Floor', consisting of a large hall with narrow windows, a garderobe in the north-east angle and a single spiral in the north-west angle that is the only spiral stair in the whole tower. As at Castle Rising and as was usual in most of the great towers, this corner spiral runs up the whole height of the building from ground level to wall walk and

is accessed at every level. The Basement or Storeroom is at ground floor level and was originally fitted with eight small slits for light and ventilation and two very small mural chambers in the south-east and south-west angles; the spine wall was a later addition. The Great Hall or 'Banqueting Hall' on the second storey has two decorative pillars, one towards the middle of the east wall and one in a corresponding position on the west wall, from which springs a decorated arch that would have supported the original roof. There is a grand fireplace at the opposite end of the hall from the spiral stair and eight windows. At this level, there is a garderobe and very small mural chambers. Also at this level and adjacent to the spiral stairs is an alcove where the portcullis winding mechanism would have been situated. The spiral continues upwards to give access to a gallery which runs around all four sides of the tower and gives a view down into the Great Hall; it is designated a 'Minstrels' Gallery' although it is unlikely that this was its original use. Today there is a floor above the Great Hall that is designated 'Dormitory Floor', but this was not original because the Great Hall was the highest floor within the structure. Originally the outer walls of the keep rose above the height of the wooden shingle-covered roof for its protection and probably for image – and the keep was of three storeys, with the fourth storey added in the fifteenth or sixteenth century.[464] There are corner turrets on the tower.

The clockwise spiral at Hedingham is impressive in its size. It has a 153 cm wide step, with a 48 cm outer, a 20 cm riser and a central newel of 48 cm, but what is extant is a replacement of the original that was constructed in brick in the fifteenth century. The stair is lit by slits. From the Basement the stair is accessed by a short passage and at the first and entry floor level access is off the entrance passage. At second floor, which is the Great Hall level, a set of wide, straight stairs diverts from the spiral and leads into the Great Hall. These are designed such that on leaving the spiral stair the head of the person will be approximately level with the floor of the Great Hall and thus the feet of the lord at the opposite end of the hall. At gallery level there is a set of narrow, straight stairs leading to the gallery. The stairwell – unlike many – is vaulted such that the undersides of the stairs are not visible: it is uncertain but probable that this was effected when the masonry stairs

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[464] Dixon and Marshall, 'The great tower at Hedingham Castle', p. 17.

were replaced in brick. The dimensions of the spiral stair at Hedingham are amongst the largest found during the fieldwork – that is, of the castles and religious buildings surveyed for this thesis – and the only spirals found to be wider are those in the middle of the North Wall of Bolton Castle at 168 cm; the Keep at Middleham Castle, North Yorkshire, at 180 cm; the spiral stair in the entrance tower to Tour Jean sans Peur at 186.5 cm; and the North-West Tower of Monea Castle, Co. Fermanagh, at 155 cm. The central column or newel is also extraordinarily large and, of the castles and religious buildings surveyed for this thesis, only the Charlemagne's Aachen Chapel at 135 cm and the tower of Brixworth Church at 73 cm are larger in diameter. From the research for this thesis the use of the large diameter central column – newel is perhaps a misnomer – is unique in English and Welsh castles of this period. The lack of a stair for servants to keep them separated from the lords may be compensated for by the width of this stair, but given Aubrey de Vere II's domineering personality and the nature of lordship at the time, this seems an unlikely interpretation. However, the width of the stair does lend itself to ceremony and procession and has echoes of Charlemagne and his greatness.

A great tower has been described as consisting of several elements contained within the tower – basement, a well, an impressive stair at the entrance to the great hall, a great hall, a chapel, a domestic stair to separate the staff from the lord and his guests, a stair to the noble apartments and noble apartments – but at Hedingham there are several of those elements missing. The great tower does not have a chapel and there is no evidence that the tower ever contained one. Originally, Hedingham did not have domestic arrangements within the tower; it did not originally have private apartments because those seen today are a later addition; the mural chambers are far too small to function as more than cupboards and even then, because the doors would have opened inwards into the mural chambers, the amount of space available in them is reduced. A great tower ought to have a well in the basement and the well at Hedingham has yet to be located. The defensive element of the great tower is not strong in its original form as the entrance was lightly defended by a door and portcullis and the access to the spiral stair that runs the full height of the structure is next to the entrance. There are only a small number of arrow slits and windows on each floor and they would not offer

any serious defensive volleys to deter an attack. Finally, it has a single stair and there is no evidence of a domestic stair to separate domestic servants from lords. The great width of this single spiral stair at Hedingham would indicate that it could be used for a ceremonial approach to the Great Hall but equally – but not at the same time – it could be used for the movement of a large number of servants carrying elements of the feast to and from the kitchen. Dixon and Marshall conclude that Hedingham was used for social events and not as a domestic residence.[465]

In summary, it appears that Hedingham Castle is lacking several elements that constitute a great tower and the impressive size of the single spiral draws one to the conclusion that the great tower at Hedingham, as one of the first great towers to be built by a lord in England, does not deserve to be classified as such. It should be interpreted as a place for display, perhaps a banqueting suite or ceremonial site, which in many ways harks back to the Anglo-Saxon hall in that it has an upper floor for banqueting. The single spiral stair with its great width and impressive newel would demonstrate the status of Aubrey de Vere II and it would also facilitate processional movement and the transfer of food from kitchen to table.

Peveril Castle

The castle at Peveril, called 'The castle of the Peak' in medieval times, contains a tower but not of the magnitude of those described above and it cannot truly be called a great tower. However, it is of value to include the Keep at Peveril in our discussion of great towers in order to compare and contrast it with other larger and earlier great towers. Peveril Castle was founded soon after 1066 by William Peverel in a location to protect an area with rich lead mines from whose ore silver was extracted; the Peak Forest was hunting country, as well as acting as a buffer zone to the 'wilder country of the Pennines and Cumbria'.[466] It stands on a rocky

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[465] Dixon and Marshall, 'The great tower at Hedingham Castle', p. 21.
[466] B. Morley, Peveril Castle, (London, 1990), p. 19. See also R. Eales, Peveril Castle, (London, 2006) and J. Himsworth, 'Peveril Castle Stones, Castleton', Derbyshire Archaeological Journal, Vol. 76 (1956).

outcrop between Cavedale and the Peak Cavern Gorge.[467] After 1155, the castle was forfeited to the crown and major changes were made to it, including the addition of the Keep in 1176 by Henry II, who visited it on several occasions, including that to accept homage from Malcolm IV of Scotland in 1157.[468] The town of Castleton stands to the north of the castle at the foot of the escarpment and was probably built by Henry II in conjunction with the structural changes to the castle as a *bastide* to encourage trade in the area. In the following centuries, Peveril underwent many changes and was comparatively well maintained until *circa* 1400, when it was dismantled under the instructions of Henry IV because it was probably outdated both on domestic and military grounds – although the honour was financially beneficial (Figure 60). In 1561 records indicate that the Keep was still in use as a court; in the nineteenth century, the Duchy of Lancaster, that had held it since 1369, undertook repairs. In 1932, it was placed under the control of the Department of Works and today is managed by English Heritage.
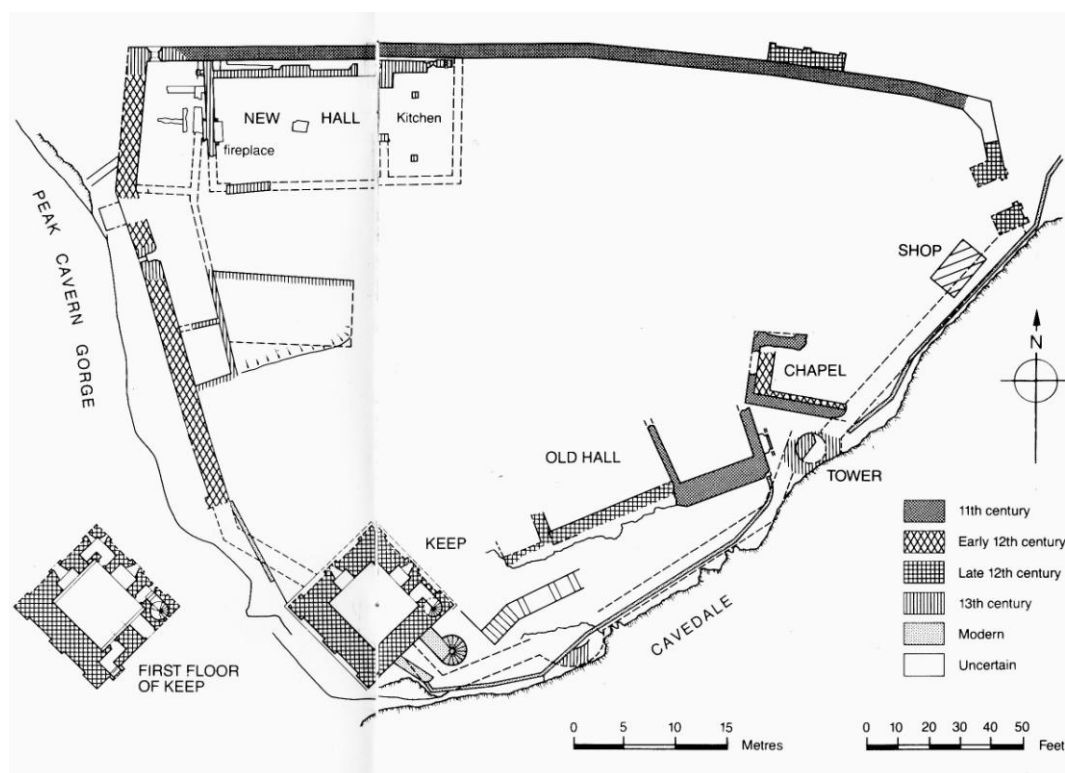
Figure 60. Peveril Castle: Site Plan of the Inner Bailey.
Courtesy of English Heritage.

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[467] The Peak Cavern entrance is the largest in Europe and there are remains of dwellings in the cave entrance.
[468] It would be interesting to know in which space within the castle this took place.

The Inner Bailey appears to have been accessed from the Outer Bailey to the south-west across a bridge spanning Peak Cavern Gorge, with the Keep (Figure 61) the first structure that a visitor in medieval times would have encountered. The Keep is situated at the southernmost tip of the bailey at the highest point within the castle. It appears to be three storeys high, but internally there are in fact only two storeys: a basement and an entrance floor. There is no spine wall, as would be the norm in the great towers. Entry to the structure was at first floor level through a door with a draw bar but no evidence of a portcullis is to be found. The entrance floor was the topmost room in the Keep under a pitched roof and had windows in the north-east and north-west walls as well as a garderobe in the south-east angle. In the north-east angle there is a very small intramural space lit by two slits. This space is inaccessible today but appears not to have been a garderobe and seems to be too small for sleeping accommodation. There is no evidence of a fireplace – very common at this time – and the entrance floor would have been warmed by a central hearth or brazier. A 79 cm wide doorway in the east angle of the entrance floor room leads to a short passage that doglegs right to join a spiral stair that rises the full height of the Keep from the basement to the wall walk. This is the only spiral in the Keep.

Below, at ground floor level is a basement for storage with two narrow slits for light and air in the north-east and north-west walls. In the basement, 33 cm above the current floor level, an 83 cm wide doorway opens into a passage that is 99 cm long and 103 cm wide, which turns right into a passage that is 130 cm long and 90 cm wide. At the end of this passage a clockwise spiral with a step width of 83 cm, an outer tread of 35 cm, a riser of 20 cm and newel of 20 cm diameter rises to the wall walk level. Window slits light the stair from the first floor upward.

The bailey contains the remains of a number of structures that have been interpreted as Old and New Halls, Kitchen and Chapel and there are some small circular remains to the south of the chapel that may have been a spiral – although its position indicates that it is too far from other buildings to have linked to them – but was more probably a small round tower. Today these remains are inaccessible.

In the late twelfth century a gate at the north-east angle of the Inner Bailey was constructed, offering access to the town below.

Figure 61. Peveril Castle Keep.
Illustrating the slits lighting the spiral stair on the left and the larger widows on the diagonal.
Photographer: C. Ryder.

Peveril Keep lacks almost all the essentials for a great tower. It does have a basement and a Great Hall at entrance floor level but lacks a well, an impressive stair at the entrance to the great hall, a chapel, a domestic stair to separate the staff from the lord and his guests, a stair to the noble apartments and noble apartments, nor does it have fireplaces and it has only one garderobe. Peveril Keep would not represent a very high level of sophistication and luxury for the lord, his family, his retinue and visitors and is very limited in the accommodation space it offers. However, within the Inner Bailey there are to be found remains of halls, a chapel and other accommodation that were probably suitable for a lord. Peveril as a royal castle then has a Keep that is not offering the full functions of a great tower but it does stand to represent the power of the king with its *donjon* that dominates the entrance to the Inner Bailey and the surrounding area.

Welsh Castles

The Welsh are not noted for the profligacy of their castle building: a rough count reveals that of the approximately 400 castles inside the modern borders of Wales, only around ten percent were built by the native Welsh – Davis pinpoints on a map just 40 castles built by the Welsh.[469] The traditional building associated with Welsh lordship was the *llys* or court in the form of a hall that was the political centre of the *commote* or political division of the territory, such as a county or canton. The Welsh prince would move from *llys* to *llys* to undertake his duties, much as the Norman lords would do in their lands. Archaeological evidence at Rhosyr, Anglesey, and the Bishop of Bangor's residence, Llandudno, Conwy, suggest that they were not highly luxurious dwellings even for their time. The *llys* consisted of a main hall with an offset fire; adjoining private rooms; and other ancillary buildings close by, the whole lot being single storey. The buildings were constructed from a dry stone base topped with a wooden structure that was probably thatched. Significantly, the prince's tenants were expected in law to provide these buildings.

For the Welsh, the construction of a stone castle would be a major financial and technological undertaking, but more than this it would be a break with tradition and may well have been viewed as unsettling by the traditionalists, leading to political tensions; given that power in Wales in the early medieval period was dependent upon the political support of one's peers and frequently led to conflict between siblings, it would be bold to move from traditional ways. Would the prince's tenants provide the structure for a castle as they provided the *llys* and, if not, what would their role be? Also following the argument that cultures develop buildings that support the social interactions within that culture, the construction and habitation of a castle would be a major cultural shift for its inhabitants and visitors at all levels in the social spectrum. It might, perhaps, have been a strange and unsettling experience for a Welsh person to sleep at first storey level or higher for the first time in his or her life. Above all, the act of being in and around a castle may have created changes in social interaction from those traditionally

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[469] P. R. Davis, <u>Castles of the Welsh Princes</u>, (Swansea, 1988), p. 12.

experienced in the *llys* and as a result might move Welsh society towards Norman ways at this higher level. King states that the Welsh learned castle building from the Normans but the transfer of ideas was already taking place through marriage and through invitations accepted by Welsh princes to stay in Norman castles, facilitated by the Norman method of absorbing neighbours as well as conquering them.[470] Militarily, the castle in Wales was an excellent idea because of the frequent uprisings and conflicts between the Welsh, for between 949 and 1066 'some thirty-five Welsh rulers died at the hands of other Welshmen' whilst fighting for supreme power in Wales.[471] Castles would also appear to be a fine defence against the prime Welsh weapon of the long spear, in the use of which the men of North Wales were highly proficient.

Were there differences between the castles built by the Welsh princes and those of the Norman lords or were they essentially the same? This broad question is beyond the scope of this thesis and is much wider than the subject being explored here. However, it is relevant and will be addressed to the extent that it sheds light upon the location, role and meaning of the spiral stair and the evaluation and interpretation of the spiral stair in this thesis will, in turn, be employed to throw some light upon the wider differences between English and Welsh castles.

Dolbadarn

Dolbadarn, Gwynedd (Figure 62) is strategically sited on a spur of land between two lakes – Llyn Padarn and Llyn Peris – on the Llanberis Pass that links Europe via central England to the important port and political centre of Caernarfon[472] and on to Anglesey and then to Ireland. The castle overlooks and controls this key road which runs close by the river that flows through the mountains of Snowdonia to the sea at Caernarfon. The castle's location is close to that of the prince's cattle ranches or *vaccaries* that were such an important symbol of wealth in the Welsh medieval culture. The castle also probably protected the route the cattle would

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[470] King, Castles of England and Wales, p. 7.
[471] J. Norris, Welsh Castles at War, (Stroud, 2004), p. 20.
[472] Caernarfon through the *Mabinogion* is strongly linked to the Roman world and according to its Tourist Information website http://www.visitcaernarfon.com/ the town has been 'continually inhabited since' (accessed December 2010).

take to summer pasture – *hafotiroedd*. It appears clear that Dolbadarn was an important site for in 1255, after the battle of Bryn Derwin, where Llywelyn ab Gruffudd defeated his brothers Owain and Dafydd, he chose to imprison his brother Owain here.[473] In the years that followed, Llywelyn worked assiduously at increasing his power and status in Wales through conquest and marriage alliances with the Marcher lords through his daughters.
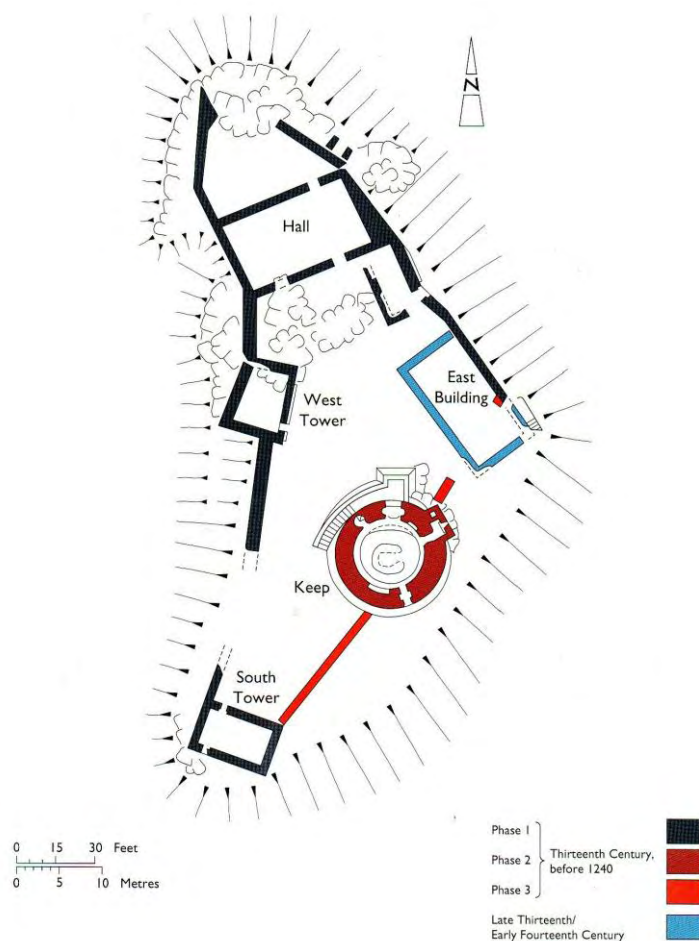
Figure 62. Dolbadarn Castle: Site Plan.
Courtesy of Cadw.

The original castle was probably constructed by Llywelyn ab Iowerth (died 1240) in the early thirteenth century when, as Prince of Gwyneth, he made Gwyneth supreme through political alliances and marriages, particularly his own marriage to Joan, King John's illegitimate daughter. This all came to nought when John

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[473] It was also to this site that the administrative centre of the *commote* of Is Gwyfrai was moved in the 1240s.

concluded that Llywelyn had become too powerful in Wales and he savaged the prince's Gwyneth lands.

There is no record of expenditure by King Edward I on Dolbadarn and this is unsurprising with his majestic castle of Caernarfon recently constructed near by. However, there is a record of the timbers from the hall at Dolbadarn having been taken to Caernarfon in 1284 for incorporation into its structure, probably as a political gesture of power as much for cost saving on timber.[474] Thereafter, Dolbadarn continued as a royal manor but not as a functioning castle. The ruins were consolidated in the mid-twentieth century when the site was opened to visitors.

The site of Dolbadarn Castle is limited in area and remains, and is dominated by the large round tower or Keep – as it is labelled on the Cadw plan – standing to some fourteen metres in height. The other masonry ruins are quite low, typically surviving to less than one metre above ground level and accordingly it is now difficult to interpret much of the original structure. The Keep is probably the finest extant example of a Welsh round tower and here is free standing – although elsewhere some Welsh round towers were incorporated into the curtain walls of castles – and it is clearly a later insertion within the castle, which follows an irregular plan to fit the spur of land.

The Keep (Figure 63) is entered at first floor level, with the main door facing north towards the Hall and the major part of the bailey. Unusually, the entrance was fitted with a portcullis that could be raised by a mechanism on the floor above the entrance floor and, behind the portcullis, stood a door that was secured by a solid drawbar. This sole entrance to the keep is accessed by stairs – once encased in a forebuilding that is now in a ruinous state – that follow the curved shape of the outer wall of the keep. Although the external access steps today are considered to be medieval, they replaced an earlier wooden set. The original entrance floor woodwork is missing – as are all the other wooden floors – but there are clear signs that the entrance floor enjoyed the luxuries of a fireplace, a window with window

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[474] Along with the hall timbers from the significant Welsh halls at Conwy, Aberffraw and Ystumgwern.

seats and, to the left of the entrance, a garderobe chamber set in a two-storey projection on the north-east side of the keep. Below the entrance floor is a basement that has neither window, nor fireplace, nor apparent access but has a narrow ventilation shaft. This suggests that access from the entrance floor to the basement was through a trap door from the entrance floor chamber.

Figure 63. Dolbadarn Castle Keep.
Illustrating entrance door with spiral to the right. Courtesy of Cadw.

To the right of the entrance door and out of line of sight of a person entering the Keep at the entrance floor, there is a doorway leading to an ascending spiral stair – one of two spirals at this castle – but the doorway's ruinous state made it impossible to ascertain with any accuracy the original width of this door. The doorway leads to a passage that is 84 cm wide and 102 cm long, at the end of which is located a spiral stair that rises anticlockwise. The step is 85 cm wide, with an outer tread of 23 cm, whilst the risers vary between 15 and 23 cm in height.[475] The steps in the spiral stair are constructed from random field stones – as is most of Dolbadarn – and are made from several pieces of these stones. A newel post is not apparent on this, the lower of the two spiral stairs, which is lit by two slit windows. At the nineteenth step, the spiral stair finishes and two straight

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[475] One wonders if this is a result of the reconstruction work rather than the original design.

steps on the right give access to a 38 cm long, 76 cm wide passage or landing where, on the right or south of the landing is a doorway to the second floor chamber. This chamber has all the signs of a high status room with its fireplace, steps down to a garderobe chamber – in the same projection as the entrance floor garderobe – and four windows with window seats.

At the opposite end of the end of the passage from the lower spiral stair, three straight steps lead to a second spiral stair – again constructed from field stone – rising in a clockwise direction and lit by two slit windows. There is no newel. After 22 steps, a doorway gives access to the original roof level, which is again in a ruinous state but has clear signs of the location of the original roof. The spiral stair continues in a clockwise direction for a further ten steps until it ends in ruins where it would have met the wall walk. The steps in this higher spiral stair are 64 cm wide, with 24 cm outer tread and a riser of 24 cm and are thus much narrower and have larger risers than the lower spiral stair, making movement up and down this stair more difficult than on the lower stair.

It is probable that the Keep was built around 1210 to 1240 and its work is attributed to Llywelyn ab Iowerth, who constructed it to enhance an earlier castle on this site. In doing so, he was probably influenced by the English culture of high status people holding castles and so modelled his Keep on the round towers at Skenfrith, Monmouthshire, Tretower and Bronllys in Powys, with which he had connections through arranged marriages between his family and English nobles.[476] By 1210 Llywelyn ab Iowerth had become the ruler of much of Wales and he probably felt the need to make a statement in stone and in the Norman style regarding his status.

Other parts of the castle do not reveal any signs of the presence of spiral stairs. The hall with its cross-passage was probably single storey with a central hearth and, in all probability, it was from this structure that the woodwork was removed to Caernarfon by Edward I. It appears that the West Tower and the South Tower were never very high – probably no more than a basement and an entrance floor –

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[476] Llywelyn's daughter lived at Bronllys with her husband Walter Clifford.

and there are no signs of internal stone stairs, drawing one to the conclusion that – if present – the internal stairs in these towers were of wood. The East Building is a slightly later addition and has a set of straight stone steps leading away from the castle. Strangely, there is no clear location for a gatehouse but it is generally assumed that it was located to the west of the Keep, where there is a gap in the present curtain wall.[477]

Dolbadarn makes a serious statement about the arrival of Llywelyn ab Iowerth in high society or perhaps his right to be there. He constructs the circular Keep in the style of the time that reflects the building designs of his in-laws and fits it with the trappings of power, despite its small size. The castle has a high circular Keep;[478] a large hall with cross-passage; latrines in the courtyard adjacent to the hall and also on both floors of the keep; windows with window seats on both floors of the Keep; a fireplace on each floor of the keep; a portcullis and two spiral stairs. Its location also shows his power in that it is at the centre of a *commote* and could be seen from afar in its day, reflected in the lakes nearby.

What is of great interest in Dolbadarn's Keep is the change of direction in the spiral stairs – although separated by a short passage or landing – with the lower stair being anticlockwise and the upper stair clockwise. This can be taken to be a remarkably advanced approach to the design of the structure. The two spiral stairs appear as some form of differentiation of space, with visitors to the Keep climbing up from the entrance floor to the second floor chamber and possibly waiting outside in the passageway until entry was permitted. Whilst waiting, the upper stair would denote a change of area by its change of direction and thus send a 'no entry' message to the visitor. Of note also here at Dolbadarn is the presence of the portcullis. These are more particularly found at castle gatehouses – and one has not been located at Dolbadarn – and it may well be that the portcullis was being used as a signifier of status and as part of an arrival ceremony in which it was

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[477] R. Avent, <u>Dolwyddelan Castle, Dolbadarn Castle, Castell y Bere</u>, (Cardiff, 2004). See also B. Morley, 'Dolbadarn Castle', <u>Archaeological Journal</u>, Vol. 132 (1975), C. Spurgeon, 'Dolbadarn: The Castle' in P. Joyner (ed.), <u>Dolbadarn: Studies on a Theme</u>, (Aberystwyth, 1990) and G. Jones, 'The Defences of Gwynedd in the Thirteenth Century', <u>Transactions of the Caernarvonshire Historical Society</u>, Vol. 30 (1969).
[478] It would be reasonable to expect that it was crenellated.

ceremoniously raised for certain visitors and not just for defence.[479] Certainly, on visits to Bronllys where his daughter Margaret lived and perhaps to Beeston, Cheshire, Llywelyn ab Iowerth would have been aware of the importance of portcullis, waiting spaces and spiral stairs in the 'form' of behaviour of a court. He imports these status symbols to Dolbadarn and squeezes them into a much smaller castle, giving it a lordly status beyond what its modest size might otherwise suggest.

Criccieth

The castle at Criccieth, Gwynedd (Figure 64), is situated on a rocky promontory that juts into Tremadog Bay in the north-west corner of Cardigan Bay. The sight lines from the castle are such that movement across the bay, along the old road from Segontium, along the Llyn Peninsula, into the valleys of Snowdonia and south past Harlech can be seen. The implications of this are also that the castle can be seen from all these locations, too, and the occupants of Criccieth would be able to watch Harlech Castle rise above them in the 1280s.

Criccieth, like Dolbadarn, was not originally the *maerdref* or administrative centre of the *commote* of Eifionydd in which it stood. This was originally at Dolbenmaen at a ford on the Afon Dwyfor to the north, where an earth and timber castle was built by the Normans towards the end of the eleventh century.[480] There is some uncertainty whether the castle at Dolbenmaen was originally Norman or Welsh, but it appears that the *maerdref* was transferred from Dolbenmaen to Criccieth by Llywelyn ab Iowerth in the 1230s.[481] Here, on this promontory, Llywelyn constructed a castle on a virgin site – no evidence has been found to suggest previous occupation of the site from any historical period.[482] The castle is next to the new borough of Criccieth, a borough that appears never to have had any

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[479] The lowering and raising of the portcullis at Monk Bar, York, for the coronation of Queen Elizabeth II in 1953 echoes these ceremonials.
[480] The motte remains with a flat top suggesting that at some point there was a stone structure on the top. There is no sign today of a bailey, although there are remains of a ditch.
[481] This transfer of a centre of power is similar to that at Dolbadarn and may reflect the movement of power from a place 'tainted' by Norman presence.
[482] This is exceptionally unusual because most castles are sited on previously occupied sites.

defensive walls[483] and it is assumed that the local people would seek shelter in the castle if the town were attacked.[484] A letter from Llywelyn ab Gruffudd to Edward I of February 1274 suggests that Criccieth was an important site on the Welsh prince's itinerary. This castle and small borough were held by the Welsh until 1283, when they were taken by Edward's troops. From March 1283 an English constable was in receipt of wages at the castle and in the following year Edward declared Criccieth a free English borough and appointed Sir William Leyburn as constable with fees for thirty men.[485]
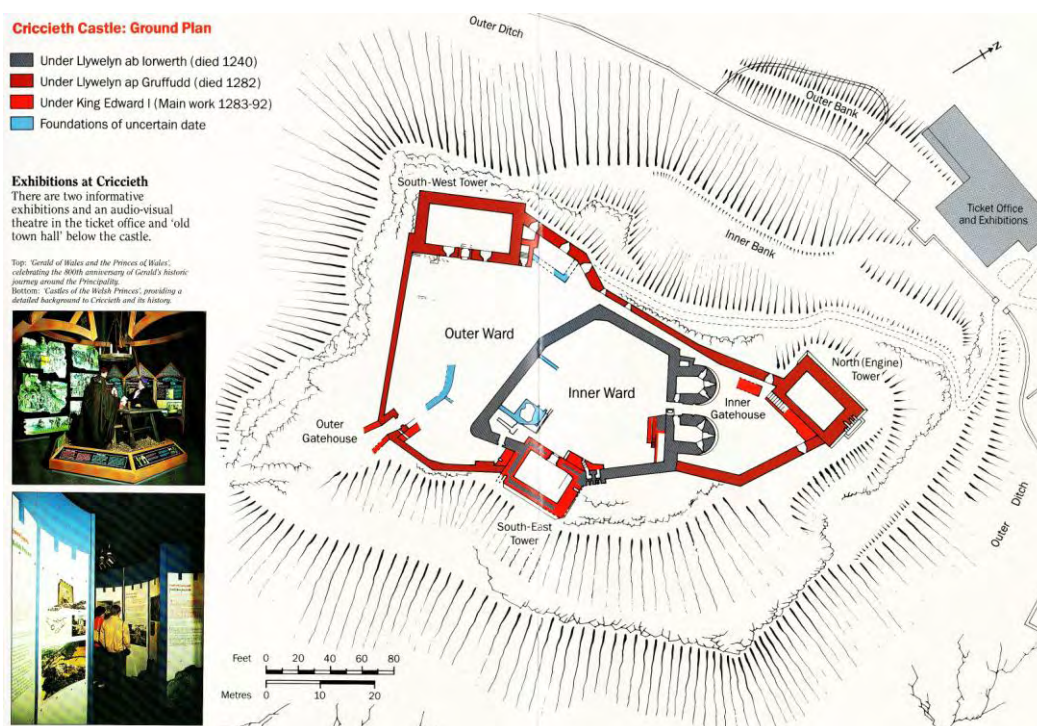
Figure 64. Criccieth Castle: Site Plan.
Courtesy of Cadw.

Differences in stone, mortar and stone working techniques indicate that there are three major periods of construction at Criccieth Castle. Firstly, between 1239 and 1240, Llywelyn ab Iowerth constructed the Inner Ward that included the large twin Inner Gatehouse with its apsidal towers. It has been compared to that at Rhuddlan, Denbighshire, but this was built much later than Criccieth and a better parallel would be the gatehouse at Beeston built in the 1220s by Ranulf de Blondeville,

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[483] Harlech appears not to have had town walls either.
[484] As in 1294, when Madog ab Llywelyn attacked.
[485] A tower at Criccieth Castle is named after him.

sixth earl of Chester.[486] Llywelyn's daughter Helen married John 'the Scot', the nephew and heir of Ranulf de Blondeville, and it does not stretch the imagination too far to suggest that Llywelyn visited Beeston or was at least aware of the gatehouse there.[487] Llywelyn would also have seen similar apsidal towers at the gatehouse at Montgomery Castle, Powys, which was under construction when he attacked it in 1228 and again in 1231. Between 1255 and 1282 Llywelyn ab Gruffudd undertook the second phase of building work at Criccieth, where he changed the flow into the castle by making the outer gate the main entrance to the castle; the Outer Ward was added, as were the towers to the north and south-west of the outer ward.[488] In the Inner Ward, the external stair to the south-east Inner Gatehouse tower was widened and a new entrance at ground floor level cut. The third period of development was under Edward I, whose expenditure on Criccieth Castle amounted to £353 between 1285 and 1292, but it is difficult to assess the amount spent by Edward before this because the accounts for 1283 and 1284 do not detail what was spent at Criccieth alone, but give a total for several castles including Criccieth. However, from the records it is likely that the height of the Inner Gatehouse was raised between 1315 and 1316; the stair at the rear of the gatehouse widened; the Leyburn Tower reconstructed and strengthened; an external stair added to the Montfort Tower;[489] and a wide shallow stair constructed leading to the top of what is now called the North (Engine) Tower, where some form of throwing engine was positioned by the English. During the reign of Edward II £250 was spent on various works but no single amount appears sufficient for the construction of a new tower or gatehouse. However, the walls of at least one of the gatehouses were raised again and there were repairs to other towers and to the King's Hall, a wooden structure against the north-west curtain wall.

In 1400 Owen Glyndwr and his followers rose up against the English and by 1403 Criccieth as well as Harlech and Aberystwyth, Ceridigion, were under siege. With

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[486] Sometimes de Blundeville.
[487] Construction of Beeston Castle commenced in 1225 but it was never completed.
[488] Today, the north tower is called the 'Engine Tower' and the south-west tower is called the 'Montfort Tower'.
[489] The Montfort Tower is probably named after Llywelyn ab Gruffudd's wife Eleanor de Montfort, daughter of Simon de Montfort.

the intervention of the French fleet in the Irish Sea to support the Welsh uprising, Criccieth capitulated in 1404 and both castle and borough were wrecked. The castle was never rebuilt and the borough became Welsh again. The castle ruins were excavated in 1944 and the site is now maintained by Cadw.

Figure 65. Criccieth Castle Inner Gatehouse.
Illustrating high status rooms in the upper levels of the Inner Gatehouse.
http://www.castlewales.com/criccth.html.

The castle is quite compact, like many Welsh castles, although it has an Outer and an Inner Ward, two gatehouses and three large rectangular towers. The Outer Gatehouse is little more than a gate with projecting walls, whilst the Inner Gatehouse has substantial apsidal towers containing accommodation (Figure 65). Because of their ruinous state, access is not permitted to the higher levels of the Inner Gatehouse towers but there are signs that there were high status rooms located here. For example, the north-east inner gatehouse has windows with window seats on its now inaccessible upper floors. The north-east Inner Gatehouse has an external straight stair to access the first floor and appears to have a straight intramural stair at a higher level. To the east side of the South-East Tower, a slightly curved stair is located that is 61 cm wide, has a 25 cm tread and 25 cm riser leading to the garderobes, although it did not become a spiral. The curvature in the stair may well be to hide the interior of the garderobes from the courtyard.

There are external stairs leading to the North (Engine) Tower and a further set to the South-West Tower where some fragments of dressed and decorated stone were found, suggesting that the upper floor was one of the principal apartments in the castle. However, here and elsewhere there were no obvious signs of spiral stairs and the evidence suggests that spirals were not employed in this Welsh castle.[490]

The pattern here is a typical apsidal shaped tower employed by the Welsh in their castle designs. Other than the Inner Gatehouse, the buildings comprise no more than a basement and entrance floor. It appears that Llywelyn ab Gruffudd, building on the work of Llywelyn ab Iowerth, has attempted to imitate the grander contemporary castles of his English aristocratic kin but has done so selectively and on a much reduced scale at Criccieth, as befitted his resources. Accordingly, there was limited call at Criccieth for vertical movement as, with the exception of the loftier Inner Gatehouse, the remaining buildings and structures appear to rise to no more than two storeys. Thus there was limited need for stairways and, quite typical of the native Welsh, vertical movement was achieved by straight or at most curving stairs rather than true spirals.

Ewloe

The third of Llywelyn ab Iowerth's castles discussed here differs from the previous two in that it is rather hidden away. Ewloe Castle, Flintshire (Figure 66), is compact, enclosed by the ancient forest of Ewloe and stands below the lip of a ridge overlooking the Dee estuary – towards the Norman five-storey tower of Shotwick Castle, Cheshire, and the river crossing here – and the main road from Chester into Wales. Some hold that Llywelyn ab Iowerth built the castle *circa* 1210, although the slight documentary evidence indicates that the castle was built by Llywelyn ab Gruffudd *circa* 1257 some twenty years before the construction of Flint Castle was initiated by Edward I. Armitage believed that Ewloe Castle was documented as Eggelawe Castle, but this was dismissed by King, and both Renn

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[490] R. Avent, <u>Criccieth Castle</u>, (Cardiff, 1989). See also D. Turnbull, 'Some Problems About the Origin of Criccieth Castle', <u>Fort</u>, Vol. 7 (1979), C. Gresham, 'The Development of Criccieth Castle', <u>Transactions of the Caernarvonshire Historical Society</u>, Vol. 34 (1973) and B. O'Neil, 'Criccieth Castle, Caernarvonshire', <u>Archaeologia Cambrensis</u>, Vol. 98 (1944-1945).

and Avent support the view that the castle was built in 1257.[491] There do appear to be two phases of building work undertaken at the castle, with the upper ward and its freestanding apsidal tower started first and the lower ward with its round western tower bonded in to the curtain wall built later – although there may not have been a great deal of delay between the two building periods. A third view proffered is that the apsidal tower and upper ward were constructed in 1210 and the lower ward and round tower in 1257. Clearly more work is required to settle this and it is not the aim of this thesis to do so or to enter further into the debate.
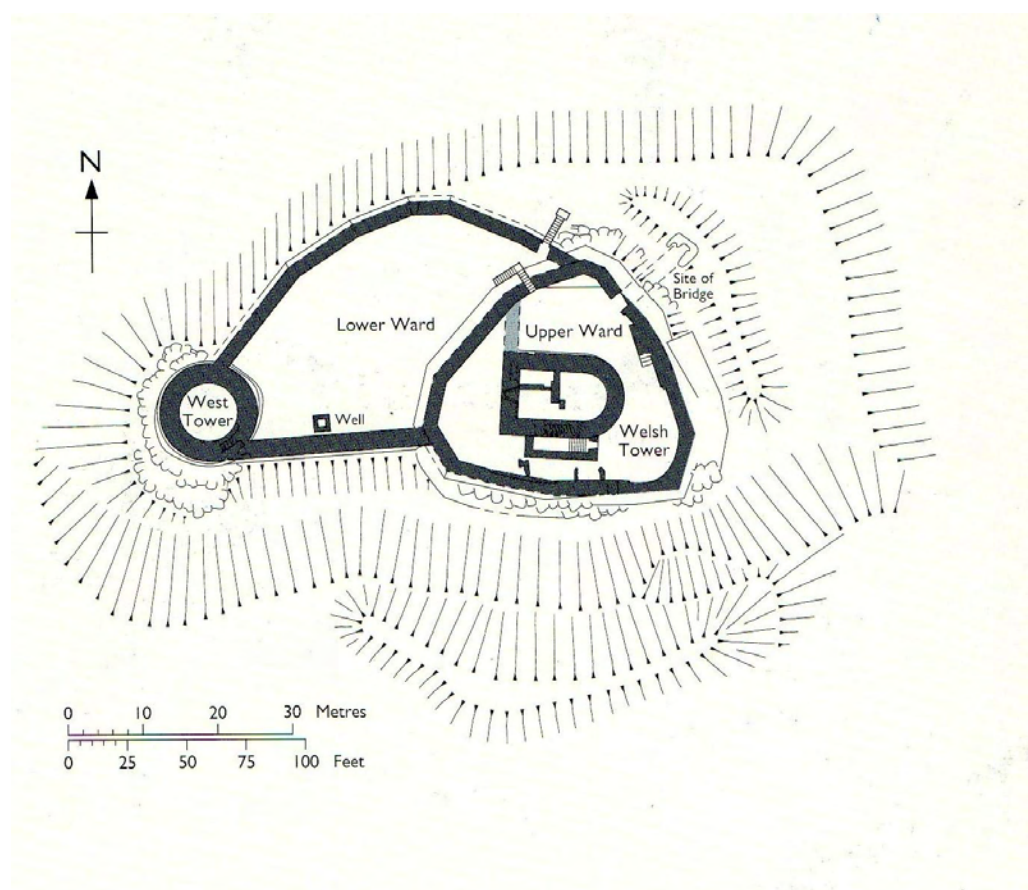
Figure 66. Ewloe Castle: Site Plan.
Courtesy of Cadw.

Ewloe Castle was severely damaged by the retreating Welsh in 1273, in an attempt to render it indefensible but, despite the Welsh filling in the well and destroying some of the walls, the English took the castle and reopened the well. The construction of Flint and Rhuddlan made Ewloe redundant as far as Edward I was

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[491] D. Renn and R. Avent, Flint Castle Ewloe Castle, (Cardiff, 1995), pp. 6-7. See also B. O'Neil, 'Ewloe Castle', Archaeologia Cambrensis, Vol. 99 (1946-1947) and D. King, 'Ewloe Castle', Programme of the 113th Annual Meeting at Chester, 1966, (London, 1966).

concerned and there is no evidence of its later use as a castle. The ruins of Ewloe are now maintained by Cadw.

Access to the Welsh Tower was by a stone staircase rising to the first floor entrance (Figure 67). The basement has neither windows nor fixed access and was probably entered through a trap door down from the entrance floor. The basement has a stone pillar rising in its centre and a stone subdivision in one corner. The first floor of the Welsh Tower has two windows with window seats and possibly a garderobe and, although there is no evidence of a fireplace, it is assumed that there would be a central hearth to heat the tower placed where the stone pillar in the basement projected through the entrance floor.[492] An intramural stair led from the entrance floor to the wall walk following the line of the wall. The roof was lower than the top of the outer walls of the tower and from the roofline had an asymmetrical pitch.[493] The West Tower is a round tower now closed to the public. Originally access to the tower would have been from the wall walk of the curtain wall, where wooden stairs linked to the tower's stone stair at first floor level, which then rose to the wall walk following the curve of the wall. Again, the basement was unlit and accessed through a trap door and there are traces of a window seat, though Renn and Avent consider this not to have been completed.[494]

Notably the two wards are not interconnected, they are not bonded together and the two towers are of different shapes. This is an unusual arrangement and may be interpreted as indicating that the two wards represented two princely zones. This may relate to Llywelyn ab Gruffudd being recognised as Prince of Wales – 'if somewhat begrudgingly'[495] – by Henry III in 1257 and the two wards representing Llywelyn ab Gruffudd's twin honour as Prince of Wales and Prince of Gwynedd. If this were the case it is difficult to determine which ward would be for which honour. The apsidal tower – sometimes named the 'Welsh Tower' – is in the upper ward and this may indicate that it was for the Prince of Wales. On the other hand, Llywelyn ab Gruffudd may have made a point about which of his titles he

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[492] Renn and Avent, Flint Castle Ewloe Castle, p. 34.
[493] Ibid., p. 34.
[494] Ibid., p. 36.
[495] Davis, Castles of the Welsh Princes, p. 17.

felt to be more important if the apsidal tower and upper ward was reserved for him as Prince of Gwynedd.

Figure 67. Ewloe Castle: Interior Stair.
Illustrating the straight intramural stair in the Welsh Tower at Ewloe Castle.
Photographer: C. Ryder.

At Ewloe Castle both towers are two storeys in height and neither contains a spiral stair. The stair to the top of the apsidal tower is straight and intramural leading from the entrance floor to the wall walk. The single freestanding apsidal tower at Ewloe appears unique, although single apsidal towers are found as mural towers at Caergwrle, Flintshire, Carndochan and Castell y Bere, Gwynedd, Dinas Brân, Denbighshire, Morgraig, Caerphilly, and twin apsidal towers functioning as gatehouses are found at Criccieth, Dinas Brân and Newcastle Emlyn, Carmarthenshire.

In summary, Ewloe offers some intriguing problems of interpretation but does not present a spiral stair for this thesis. The obvious question, then, is why Ewloe does

not have a spiral, when it does possess two towers containing elite space, albeit two towers of very different design – the round tower of the lower ward, which was a fairly common feature in English castles, and the apsidal tower in the upper ward, distinctive to native Welsh castles. However, in both towers the elite accommodation, or perhaps the main communal areas, were on the upper of the two storeys, with enclosed basements below, and so, as at other castles with structures of no more than two storeys, there was very limited need for vertical movement and we find no spirals.

Overall, the 40 or so identified Welsh castles are generally far smaller and more compact than the English castles of their day and their main structures typically consist of no more than a basement and one upper storey. There is the emergence of the Welsh Tower that is quite specific in design and its use as a free standing tower at Ewloe would appear to be a statement of Welshness. The apsidal shape of the Welsh towers may hark back to the Roman dining room, which was also apsidal, though it may also reflect the shape of medieval chapels; surprisingly, only Castell y Bere has a space labelled 'chapel' on its Cadw plans, though even this interpretation has been questioned by Avent, and no other Welsh castle has a structure labelled chapel. In all the Welsh castles only at Dolbadarn are spirals utilised. Perhaps it is because the Welsh did not function as the English did. There may be a cultural norm that the hall in the Welsh Tower did not function as private space but as general space for the lord's meetings, feastings and rest, or perhaps more simply that the Welsh Tower was only two storeys in height and there was little or no need for internal stairs. Only where there is extra height, as at Dolbadarn, is a spiral employed.

EDWARD I'S CASTLES IN WALES

In 1257 Henry III begrudgingly pronounced Llywelyn ab Gruffudd to be Prince of Wales and he went on to establish castles and power in his new Principality. Edward I was crowned King of England in 1274 and in the same year an attempt was made to overthrow Llywelyn ab Gruffudd by Dafydd, his brother, and Gruffudd ap Gwenwynwyn from Powys. These two were defeated and fled to

England for safety. Edward refused to return the two rebels to Llywelyn ab Gruffudd, who then refused to pay homage to Edward. In 1276 Edward launched a campaign into Wales and the Welsh fell back into the mountains as usual. On this occasion, the new king used his fleet in the Menai Straits to cut off supplies of food – grain from Anglesey – to the Welsh and by 1277 Llywelyn ab Gruffudd had capitulated. At this point Edward brought into play a plan to surround the Welsh mountain stronghold with castles, often attached to and defending new towns, which could be supported from the sea. This programme was greatly extended in the 1280s following a further Welsh revolt. The entire programme produced fourteen new English royal and baronial castles, the last of which at Beaumaris was started in the 1290s.[496]

Flint

Work commenced on Flint Castle and town in July 1277 with the influx from Chester – approximately one day's march away – of a large group of artisans that Edward had gathered from early June. Flint Castle is sited on a large outcrop of sandstone in the Dee marshes and, like the other castles and towns that Edward founded in Wales, is readily accessible by land and sea.[497] Renn and Avent promote the idea that the name *Le Flynt* is symbolic and represents Edward's 'intention to strike a spark of fire whose flames would consume Llywelyn'.[498] In any event, by August 1277 a workforce of around 3,000 was employed at Flint whilst the war with Llywelyn continued until the Treaty of Aberconwy in November 1277. Master James of St. George 'appears at the head of mason's pay-roll for Flint' in the same month and continues there for another seventeen months.[499] Despite further local troubles, the construction continued with the castle and town that was rebuilt after the constable of the castle ordered the town –

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[496] The order in which work commenced was Flint, Rhuddlan, Ruthin, Hope, Builth, Aberystwyth, Conwy, Harlech, Caernarfon, Denbigh, Hawarden, Holt, Chirk and finally Beaumaris. See A. Taylor, Harlech Castle, (Cardiff, 3rd edn, 2007), p. 5.
[497] Probably the name Le Flynt denotes this physical geographic feature.
[498] Renn and Avent, Flint Castle Ewloe Castle, p. 10. See also J. Edwards, 'The Building of Flint', Flintshire Historical Society Publications, Vol. 12 (1951-1952), T. Miles, 'Flint: Excavations at the Castle and on the Town Defences', Archaeologia Cambrensis, Vol. 145 (1996) and D. King, 'The Donjon of Flint', Journal of the Chester and North Wales Architectural, Archaeological and Historic Society, Vol. 45 (1958).
[499] Renn and Avent, Flint Castle Ewloe Castle , p. 13.

protected by timber and earthwork defences only – to be burned during a siege by the Welsh in 1294.[500] By 1296 the great tower was reroofed in lead. In 1301 a change was made to the great tower or Donjon under the instructions of the future Edward II.[501] This was 'a large timber structure, surmounted by a singularly beautiful wooden gallery circling the top of the great tower'[502] and the only other structural changes to the castle after this date were the construction of a hall and chamber in the castle – probably in the Inner Bailey or Base Court. In 1647, after being refortified and held by the royalists in the civil war, the castle was slighted.

The *bastide* town of Flint is placed at the southern end of the sandstone outcrop and was laid out in a 'regular parallelogram' with four gates but there was no town hall until Elizabethan times.[503] The castle at Flint is of a regular design set at an angle to the town at the north-east end of the sandstone outcrop and consists of a large Outer Bailey accessed from the *bastid*e town of Flint across a bridge over a ditch linked to the Dee Estuary that is large enough for medieval vessels to access. The route passes through small twin square towers across another ditch, through an inner gatehouse with large doors and a portcullis, into the Inner Ward. Here the rectangular Inner Ward is surrounded with a high wall with towers in three corners which are bonded into the curtain wall. At the fourth – south-east – corner, stands the great tower or Donjon that is not built into the walls like the other towers but is freestanding and is linked to the Inner Ward by a bridge. This tower and design are unique in Britain, though the external design does have some parallels on the continent.

The South-West Tower has a lobby, at the end of which are found the remains of a spiral stair rising anticlockwise for at least three floors, lit by slits. This spiral, as in all three corner towers, is now very ruinous and thus no measurements were taken, but it is likely that it gave access to all the floors and main chambers of the tower. The ground floor has the remains of three arrow slits rather than windows, whereas the upper floors of this tower were lit by windows. The North-West Tower is entered through a lobby at the end of which is the spiral stair – lit by slits

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[500] In Edward's *bastides* the constable of the castle was frequently also the mayor of the town.
[501] Then Edward of Caernarfon and Edward I's son.
[502] Renn and Avent, Flint Castle Ewloe Castle, p. 14.
[503] I. Soulsby, The Towns of Medieval Wales, (Southampton, 1983), pp. 135-136.

– rising anticlockwise to link the tower's multi-sided rooms (Figure 68), one of which contains a large fireplace, but there are insufficient remains to know if there were fireplaces at all levels. There is also a second anticlockwise spiral stair higher up this tower, but it is now completely inaccessible for safety reasons. The North-East Tower is the best preserved of the three and here are the remains of an anticlockwise spiral stair – again lit by slits – rising to the top of the tower with passages off to garderobes and a door to the wall walk. The rooms in this tower are hexagonal on all three upper floors and there is a basement that would have probably have been accessed through a trap door. There are fireplaces on the second and third floors and the third floor has windows.

Figure 68. Flint Castle North-West Tower.
Illustrating spiral stair shaft.
Photographer: C. Ryder.

The great tower stands apart from the curtain wall of the Inner Ward, much as Philip II's late thirteenth-century Donjon or *La Grosse Tour* at the Louvre. The great tower was accessed through a small guardroom onto a wooden bridge that could be drawn up by an 'engine' – timber for which was bought in 1303, soon after the wooden superstructure to the great tower was added. The entrance was protected by a door, but there is no sign that there was a portcullis too. On entering the tower there is a straight stone stair leading down into the centre of the tower,

which is circular and open – there is no sign that the central core of the tower was ever floored – with three other exits. A gallery runs around the tower at this lowest level and there is a well with a hole above to haul up the buckets. Within the thickness of the walls – approximately seven metres – there are garderobe chutes draining into the ditch to be flushed by the tides and there are three arrow slits that give light to three sets of steps. At the entrance, there is a passage – to the left when entering from the bridge – with an outward opening door, leading to a clockwise spiral stair that has 145 cm wide steps that are 49 cm at their outer edge, with an 18 cm riser and a circular 28 cm diameter newel (Figure 69). This, the only clockwise spiral in the castle, leads to the second floor, where the movable bridge 'engine' was presumably placed. The second floor is divided into five rooms with walls radiating from the – circular or polygonal – open central core of the tower like spokes on a wheel. Three of these walls contain garderobes and accompanying light and ventilation slits. Moving clockwise around this floor, the first space is recognised as a chapel because of its piscina, and the next three spaces each have an arrow slit, with the space opposite the stair-head having access to the well below. The final space brings one full circle back to the spiral stair. Latrine shafts in the walls indicate that there was a floor above, together with the wooden gallery noted in the accounts of 1301, although the 'missing' floor may well have been of stone. The plan of Flint is enigmatic and an explanation of the reasoning behind the design is often attributed to military factors. Simpson asks "What is the meaning of the extraordinary basement in the keep at Flint?' and then answers his own question by stating that it was for defensive purposes, to fall upon the enemy from three sides if they broke into that space.[504] However, this thesis ventures a different view, in that the plan of the great tower has echoes of Charlemagne's Aachen Chapel – although considerably smaller – where the centre of the round structure is open from ground floor to roof and the Emperor sat on his throne on the second floor looking across to an altar and also looking down to an altar directly opposite on the lower first floor. Charlemagne employed spiral stairs here for processional use as they are exceptionally wide – wide enough for two people to ascend or descend at the same time side-by-side – although at Flint there is only one wide spiral stair in the much smaller structure. Perhaps like

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[504] Simpson, Castles in England and Wales, pp. 107-108.

Charlemagne and Phillip II before him, at Flint Edward I was consciously and deliberately adopting architectural styles and features which would emphasise his now possession of the area and his power and status as ruler.

Figure 69. Flint Castle Donjon.
Illustrating spiral stair in the Donjon to the upper floors.
Photographer: C. Ryder

Flint was the starting point for the Edwardian colonisation of Wales and had to accommodate large numbers of troops and their commanders. The huge area of the Inner and Outer Bailey (Figure 70) would be able to accommodate these troops – perhaps in tents or temporary shelters or in now disappeared structures built against the walls – but the commanders would expect to be billeted in superior accommodation. This was afforded in the towers, which provided elite accommodation. The spiral stairs in the three towers linked to the curtain wall lead to high status accommodation, especially on the second floor. It may well be that at this level was the hall for a lord *pro tem* during his sojourn in Flint, with the storey above as his private chamber; the storey below perhaps accommodated some of his lesser lords or barons. In this way, three high ranking lords could have their own space – one in each tower – and be surrounded by their own staff, with

the spiral stair denoting that a private space was about to be entered and the passage a space for personal guards. Possibly one of these sets of rooms was for the Constable, as there is no gatehouse at Flint offering accommodation for the permanent residence of a constable and all Edward's *bastide* towns had a constable.
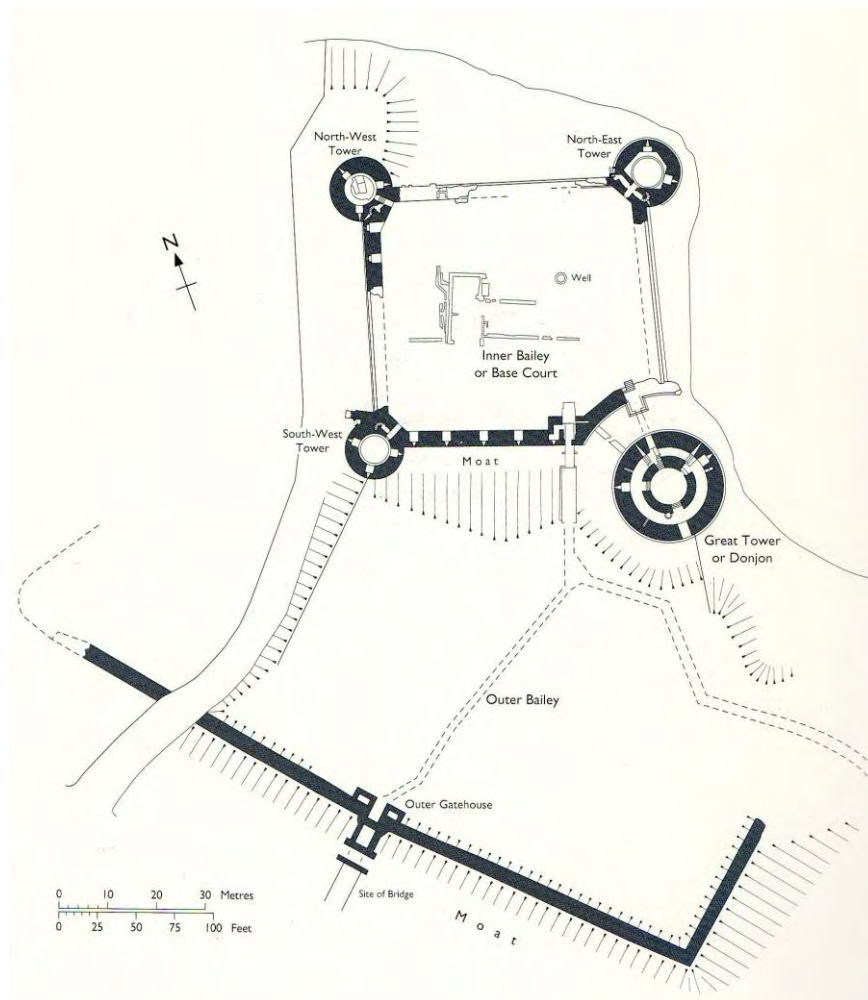
Figure 70. Flint Castle: Site Plan.
Courtesy of Cadw.

In summary, Flint is a multiple residence for a king and his lords, all of whom would expect a residence suitable for their status and the privacy that comes with it. The towers at Flint are built sufficiently high to represent and offer the space of a small keep and it would be possible for the lords to continue their way of life in these pseudo-keeps, whilst the spiral stairs represented a form of delineation between public and private space. In the great tower, the spiral stair may additionally have played a regal role in emphasising the position and status of the

king, with the possibility that Edward I was deliberately attempting to convey to others echoes of Charlemagne and King Philip II of France.

Rhuddlan

The motte at Rhuddlan and its small *bastide* town – it had its own mint – was founded by Robert, cousin of Hugh of Avranches, earl of Chester in 1083, although this location, on the River Clwyd at its lowest fording point at low tide, has a much longer history. Soulsby states that 'For both the historian and the archaeologist this is potentially one of the most interesting urban sites in the north, if not the whole of Wales'.[505] In the area are Mesolithic remains through to Romano-British and the whole area was disputed between Britons and Saxons before being disputed between Britons and Normans, as well as being frequently visited by Scandinavian raiders. In the ninth and tenth centuries the Welsh held Twt Hill with a settlement to the east of it. Gruffudd ab Llywelyn made it his royal seat until it was taken by Harold Godwin in 1063 and then changed hands several times – including a storming in 1075 by Gruffudd ab Cynan, when the survivors took refuge in the 'tower'[506] – until in 1277 Edward I captured it and in the same year initiated the construction of the new Rhuddlan Castle and *bastide* to the north of the old castle and settlement on Twt Hill and to the east of the hill. The old Anglo-Saxon town was not built upon.[507] Rhuddlan received its charter in the following year, when Edward and his queen came to stay for a short while, and the work on the town and castle was largely complete by 1282.[508] The new castle is sited closer to the River Clwyd and at a lower level than that on Twt Hill, with a large ditch excavated around three sides of the new castle to enable sea-going vessels to dock on the high tide and unload their cargoes. Soulsby suggests that it was Edward's intention to 'make Rhuddlan one of the most important towns in North Wales',[509] and this is consistent with the fact that he did, indeed, attempt to have the cathedral of St. Asaph, Denbighshire, removed to Rhuddlan and offered to

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[505] Soulsby, Towns of Medieval Wales, p. 226.

[506] J. R. Kenyon, Medieval Fortifications, (Leicester 1990), p. 4.

[507] J. Manley, 'Rhuddlan', Current Archaeology, Vol. 81 (1981), p. 307.

[508] A. Taylor, Rhuddlan Castle, (Cardiff, 4th revised edn, 1987), p. 7. See also H. Quinnell and M. Blockley, Excavations at Rhuddlan, Clwyd: 1968-1973, (York, 1994) and R. Avent, 'Rhuddlan Castle', 128th Annual Meeting, Chester and North East Wales, 1981, (London, 1981).

[509] Soulsby, Towns of Medieval Wales, p. 228.

pay part of the construction costs of the new cathedral, perhaps part of a wider plan to gain control of the Welsh Church. [510] Edward's plans for Rhuddlan to be a main seat of power changed after the castle was attacked by the Welsh in 1282 and in the subsequent conflict Edward captured much more Welsh territory and Caernarfon became the focus of his plans for a principal town.[511] Things moved on and the town walls were never built in stone nor was the cathedral built. In 1646, Rhuddlan Castle fell to parliamentarian troops and instruction was given that it was to be slighted and, unlike at many other castles, there is clear evidence that this was carried out and thereafter the ruins were used as source of stone for local building.

Today the very ruinous condition of the towers makes it difficult to undertake a survey of the spiral stairs and access is restricted for health and safety reasons. The moated castle is concentric, with a perfectly symmetrical Inner Ward sitting on an east-west axis, whilst the outer ward attempts symmetry on the same axis but this is thwarted by the severe slope in the ground to the south-west of the Outer Ward. Similar to the Outer Ward, the town is irregular in outline, but has a regular pattern to its main streets which cross at right-angles.

Entrance to the Outer Ward was originally possible through four gates (Figure 72). From the town it is through the Town Gate, whilst from the Dominican Friary to the south-east it is through the Friary Gate. The Town Gate originally had a turning bridge which appears to have been replaced soon after the castle was occupied, whilst the Friary Gate had its original causeway removed, the gate blocked and a new turret raised there by 1302, but neither of these gates appears to have high status accommodation and there are now no signs of any stairs. The third gate in the Outer Ward is the Dock Gate defended by the four-storey Gillot's Tower, after Gillot de Châlons its probable mason.[512] The original entrance was at third storey level from the wall walk and it is presumed that access to the lower floors was by ladder. There are remains of a straight stair high up on the east

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[510] M. Fradley, 'Space and Structure at Caernarvon Castle', <u>Medieval Archaeology</u>, Vol. 50 (2006), p. 173.
[511] Edward's troops burned St. Asaph's cathedral in 1283, claiming that the Welsh bishop had supported the uprising and Edward offered a meagre £100 in compensation.
[512] Taylor, <u>Rhuddlan Castle</u>, p. 23.

interior wall next to the fireplace but they are too high to measure. The fourth gate in the Outer Ward is the River Gate that appears to be a postern gate with a straight stair 86 cm wide, with a 25 cm tread and a 20 cm riser. The north and north-east wall of the Outer Ward is fitted with four projections with straight stairs, each leading to an inward opening door, and they have been interpreted as sally-ports,[513] although this seems a rather large number in a small section of wall and the inward opening doors could restrict action (Figure 71).

Figure 71. Rhuddlan Castle Steps to the Moat.
Raising questions as to whether this was a sally-port.
Photographer: C. Ryder.

Surrounded by a high, almost rectangular, curtain wall that largely remains to the original wall walk height, the Inner Ward is furnished with two four-storey, circular, twin-towered gatehouses set opposite each other in the west and east corners of the curtain wall, with circular mural towers in the other two corners. The West Gatehouse has a circular ground floor room on each side of the gate passage which was fitted with a gate, portcullis and arrow slits, whilst the rooms above the ground floor were heptagonal, with the first and top floor having fireplaces. A spiral stair rose from the ground floor to the third floor, after which an intramural stair led to the wall walk. The topmost floor was accessed directly

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[513] Ibid., p. 21.

from the wall walk and a further intramural stair led to the roof. This pattern was repeated in the East Gatehouse. Measurement in the East Gatehouse was limited because of the poor state of repair, but a doorway from the Inner Ward, 97 cm wide, leads to a 137 cm long and 117 cm wide passage, off which a clockwise spiral rises. Here the stairwell is 239 cm in diameter and it is therefore calculated that the original stair width would have been approximately 110 cm. It would be reasonable to assume that because of the symmetrical design of the castle, the stairs in the other gatehouse towers would be of a similar dimension.
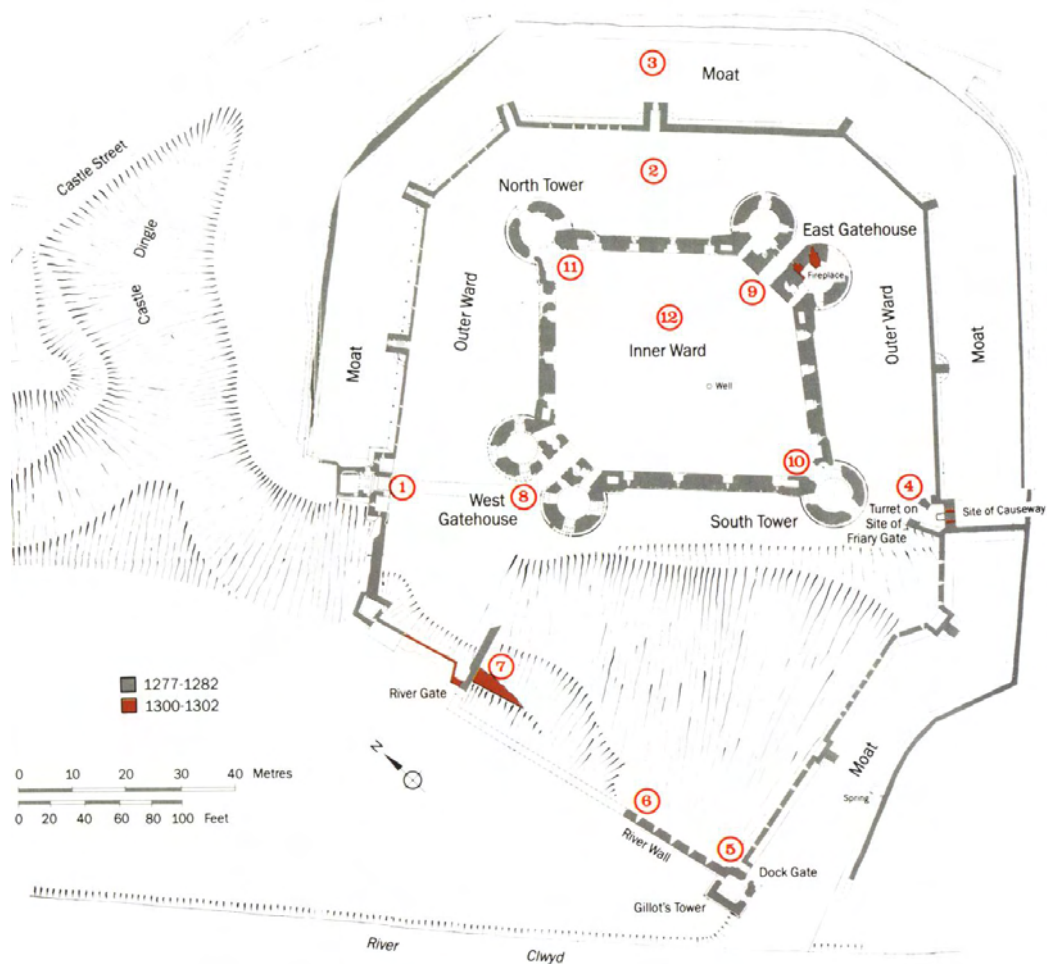
Figure 72. Rhuddlan Castle: Site Plan.
Courtesy of Cadw.

The remaining two towers – the North Tower and the South Tower – are similar in that they are both accessed from the Inner Ward. The ground floor room of the South Tower is circular and could only be entered from the floor above, whilst the rooms above reflect the same design as the two gatehouses. Because of a difference in ground level, in the North Tower the ground floor room can be

entered directly from the Inner Ward down some steps and the third floor was circular. From traces in the wall, the indication is that the spiral stair in the North Tower rose clockwise.

The poor state of Rhuddlan made it difficult to locate and to measure the spirals and even to be certain of their existence, but because of the symmetrical nature of the castle it was reasonable to assume the existence of some now missing spirals as well as to extend to them the measurements and other observations which could be made of those surviving in better condition. The Inner Gatehouses and corner towers afforded accommodation that was accessed by spirals, but the Outer Ward did not have signs of spiral stairs and is interpreted as being without elite accommodation.

Conwy

In 1283 the Welsh stronghold of Dolwyddelan, Conwy, fell and the English took control of the Conwy valley. There had been an English presence in the valley as early as 1080, when the Norman Robert of Rhuddlan built a castle on the twin peaks of the important post-Roman site – for the Welsh – above Deganwy, Conwy. The site had then changed hands between the Welsh and the English and was variously rebuilt by Llywelyn ab Iowerth and Henry III earlier in the thirteenth century. Edward rejected the castle site of Deganwy high on the hill and started construction of a new castle on the opposite bank of the River Conwy. Many of Edward's castles were placed in locations that had special meaning to the local people but this was nothing new for the Normans; for example, Colchester Castle was erected on a former Roman temple dedicated to the Emperor-God Claudius and Liddiard suggests that, like William I before him, Edward I chose locations for his castles which represented 'the fusion of political authority, a Roman past and a mythological founder [which] may have been too irresistible for the Conqueror to pass without comment'.[514]

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[514] Liddiard, <u>Castles in Context</u>, p. 34.

The construction of Conwy Castle (Figure 73) and its adjoining town went ahead very rapidly, starting in spring 1283, the same year that construction started at Caernarfon and Harlech, and by 1287 the castle and town were close to completion. People were encouraged to take up residence in the town, which was constructed on a hitherto thinly occupied site – pre-1283 there was only a Cistercian abbey, significant as a burial place for Welsh Princes, and a structure named 'Llywelyn's Hall' – almost from the beginning of construction and a charter was granted in 1284. The building material used was stone from the hillsides behind the town and for the features such as arrow slits stones quarried from the opposite bank of the river were used. The outer walls were covered in whitening, although this has long worn away.[515] Very little was changed at the castle once it was built, except for the introduction of lead roofing that, to carry this extra weight, necessitated the replacement of the wooden beams in the 'great hall range and royal apartments' with stone arches[516] made from stone shipped from Chester *circa* 1347 under the supervision of Henry de Snelleston.[517] The surviving records confirm that Master James of St. George was again the chief architect, and this identification has been strengthened by the identification at Conwy of various architectural features which Master James employed in his native Savoy, including the practice of using inclined scaffolding to raise up the building materials and the putlog holes that supported this inclined scaffold are visible today on the castle and town walls.[518] Unlike some of Edward's other castles in Wales, Conwy was not built on a concentric plan, but a linear plan following the shape of the rising spur of bedrock. What is seen of the castle today is a consequence of the removal of the lead roofing in 1665 and the resultant decay, now carefully conserved by Cadw.

The irregularly-shaped castle and town take advantage of the contours of the bedrock and are sited to the north of the confluence of the rivers Conwy and Gyffin. The town rises from the River Conwy and is surrounded by a wall with 21

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[515] Taylor, Conwy Castle, p. 10. See also Taylor, Studies in Castles and Castle-Building, (London, 1986), Taylor, 'The Town and Castle of Conwy Preservation and Interpretation', Antiquaries Journal Vol. 75 (1995) and Taylor, 'Conway Castle and Town Walls', Archaeological Journal Vol. 132 (1975).
[516] Of the original fifteen only two are extant.
[517] Taylor, Conwy Castle, p. 7.
[518] A. J. Taylor, 'Castle-building in Thirteenth Century Wales and Savoy', Proceedings of the British Academy, London LXIII, (Oxford, 1977), p. 268.

half-round towers and spurs to the river at the north and south ends nearest to the river. Conwy town has three gates that were offset from each other and the Cistercian church was retained in situ. All this combined means that the town has an irregular street pattern.
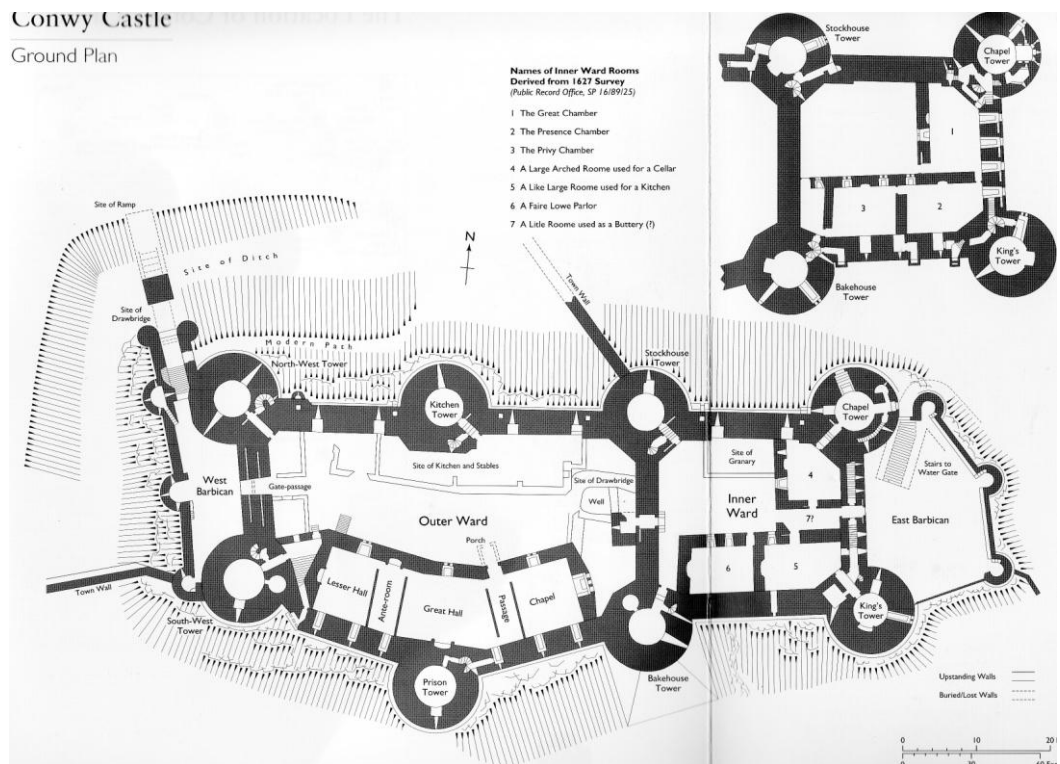
Figure 73. Conwy Castle: Site Plan.
Courtesy of Cadw.

The irregularly shaped castle consists of two wards – the Outer Ward is larger and set inland from the Inner Ward. The Outer Ward contains the landward entrance to the castle, four round mural towers and the Great Hall, which is uniquely bowed to follow the bedrock. The Inner Ward, which is entered from the Outer Ward and from the river, consists of four round mural towers, some of which house the private royal chambers and the entry to the castle from the River Conwy. Both wards contain ancillary buildings and all of the round towers, except the Chapel Tower, have spiral stairs, lit by slits, running from ground floor level to the wall walk. All the spiral stairs give access to rooms at every level through which they rise. All the stairs rise in a clockwise direction, except for the Bakehouse Tower which rises in an anticlockwise direction.

When visited by the royal court, the castle would need to house very large numbers of people in elite style, but even when the king was elsewhere, quite a large number of people would be in residence. In 1284, there was a fixed establishment of a constable and 30 men and to support these, an armourer, a smith, a mason, a carpenter and a priest. It is possible that the constable occupied the North-West Tower nearest to the town-side drawbridge and the other 'permanent' residents would be in the other towers and structures in the Outer Ward suitable to their status.

Figure 74. Conwy Castle.
View from the town wall with East Barbican in the foreground.
Photographer: C. Ryder.

One original approach to the castle was from the town, up a long ramp across the ditch, leading to a turning bridge, and then onto the East Barbican (Figure 74), that could act as a killing ground for the defenders but also as an assembly point for a processional entry into the castle and in other circumstances a greeting area. From the main gate, through the Gate-passage containing a portcullis and an inner gate, access is gained to the Outer Ward that covers some two-thirds of the castle area and from which its four round towers are accessible. The two western towers sit at each side of the rocky outcrop and although they are the closest together of all the

towers, they are too far apart too constitute a gatehouse but too close together for there originally to have been a gatehouse between them. The North-West Tower has had its spiral stair reconstructed. Entry to this tower is through a guardroom off the Gate-passage and into a corridor, lit by two slits, that could be locked from the outside with a door and drawbar, leading to the ground floor of the tower. Off this passage a spiral stair rises clockwise to the wall walk and the upper two floors, both of which have the same facilities: a fireplace, a large two-light window with seats and other small windows. Off the stair, between the two floors, is a small chamber leading to a garderobe. The access and layout of the South-West Tower is very similar to the North-West Tower, except for an oven in the basement, no drawbar and a garderobe for each of the upper two floors. The Kitchen Tower – sited next to the kitchen – has not had its spiral reconstructed, but it is clear that it originally rose to serve the wall walk and the two upper floors that are each equipped in the same manner as the two western towers. The Kitchen Tower's basement has a door with drawbar to lock it from the outside. The Prison Tower, which in the early sixteenth century was called the 'Debtors' Tower', is different from those described so far in that it has an extra storey that is somewhat hidden. Entrance to this tower is difficult to see because it is from the side of a window recess in the Great Hall, from which a passage leads to the spiral giving access to the wall walk and upper rooms. This lower level is lit by a small slit through the outer wall on the hall side of the spiral stair. Beyond the spiral, five steps lead down through two doors – one partway along and one at the end of a right-angled passage – and at the end of the passage there is a drop of just over a metre to the floor of the prison. Above are an upper basement and two floors with a fireplace and other lordly essentials, as in the previously described towers. There is a single garderobe in the Prison Tower situated between the two upper floors of the tower. At the east end of the Outer Ward was a ditch crossed by a turning bridge into a small gatehouse leading into the Inner Ward, where the royal chambers are situated.

The Inner Ward at Conwy covers approximately one-third of the total area of the castle. It has two entrances: one from the Outer Ward and one from East Barbican that is accessed from the River Conwy. The quadrangle of the Inner Ward has mural towers at the four corners and an 'L' shaped suite of apartments on the south

and east sides of the rectangle. Master James of St. George was contracted to construct these in 1283 and also noted is the expense of £320 and another £100 fee to Master Richard of Chester and Master Henry of Oxford for the woodwork.[519] Edward I used the rooms once in 1294, as did Richard II in 1399. According to a survey of 1627, the lower floors of this 'L' shaped block were used variously for a chamber, kitchen, buttery and 'faire lowe parlor'; whilst above, each with a fireplace and large windows looking onto the Inner Ward, the Great Chamber, Presence Chamber and Privy Chamber were for the king.[520] It is possible that these windows may have furnished a view onto a garden. Access to these upper rooms was by two wooden staircases from the Inner Ward – one to the Great Chamber through a barred door and one to the ante-room to the Privy Chamber. Of the towers in the four corners of the Inner Ward, the north-west corner Stockhouse Tower is entered through a door from the ward that can be barred from inside the tower. This leads to a passage and the basement is down six steps from the entrance and can be locked by a door barred from the passage that could incarcerate anyone in the basement.[521] The spiral stair here rises clockwise to the wall walk and the upper two floors that have a fireplace, garderobes and windows with window seats, as has been described in the other towers at Conwy. To the south of the Stockhouse Tower is the Bakehouse Tower, repaired by the London and North Western Railway in 1887. It is accessed from the Inner Ward along a short passage with steps down to the basement where an oven is located in the inner wall of the tower. Rising through two storeys to the wall walk, the only anticlockwise spiral stair at Conwy has a step width of 105 cm, an outer step depth of 28 cm and a riser of 13 cm. The newel is 20 cm in diameter. In the south-east corner of the Inner Ward, the King's Tower is accessed from a straight stair from the gate from the East Barbican. At the top of this stair rises a clockwise spiral, replaced in 1955. This stair served the upper storeys of this four-storey tower and led to the wall walk. The basement was accessed through a trap door from the first floor, which had a hooded fireplace and a large window with seats, as did the floor above, whilst the top floor had no fireplace.

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[519] Taylor, Conwy Castle, p. 26.
[520] Ibid., inside back cover.
[521] The Stockhouse Tower derives its name from the sixteenth century when stocks and manacles were ordered for use here.

The last tower in the castle to be described here is the most interesting for this thesis – the Chapel Tower. Access to the Chapel Tower is by a straight intramural stair – also renewed in 1955 – that rises from the door between the West Barbican and the Inner Ward directly to the chapel door. At the head of these stairs and to the left of the chapel door is a clockwise spiral stair to a private chamber for the king that looks down into the chapel through a wall slit. This stair has a 110 cm wide step, a 38 cm wide outer edge, an 18 cm riser and an 18 cm newel that leads to a 57 cm wide doorway opening into the private chamber, with a garderobe with a 65 cm door. This chamber's natural light falls through a slit in its roof. It is unusual that the stair structure of this tower is different from the others, even though it is not a residential tower in the sense that the others are residential.[522] The straight intramural stairs leading to the chapel would signify that they could be used for ceremonial processions, but the spiral to the king's private chamber for worship would prevent a similar ceremonial procession. There is sufficient space to have constructed a straight stair to the king's private chamber for worship but a spiral was selected. This begs the question why the spiral was chosen over the straight stair. This may be interpreted as the spiral stair being used as a marker to delineate public and private space. The spiral stair leads to private space that a person may only enter if he or she has authority or invitation.

Also of interest is the Mill Gate on the Conwy town walls (Figure 75). The Mill Gate is unusual in that the towers are not a matching pair, as at other castles and town walls of this period in this area. The north tower of the Mill Gate is apsidal, whilst the south tower is round, and unlike the other wall towers at Conwy, the Mill Gate had elite accommodation, evidenced by the hooded fireplaces and large windows. This upper chamber is not accessed by a spiral stair. There is evidence that these towers were associated with the king's wardrobe function and it is known that post-1312 the upper chamber of the Mill Gate was assigned to the chamberlain of North Wales but sited outside the castle walls was not considered highly elite.[523]

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[522] The residents are likely to have been priests who would lodge in one or both of the side chambers with squints to the main chapel and there is an upper floor above the chapel with a fireplace and window with window seats.
[523] Taylor, Conwy Castle, p. 56.

Figure 75. Conwy Mill Gate.
The apsidal tower is on the left of the gate.
Photographer: C. Ryder.

The design of Conwy Castle is special but the use of spirals in the towers is rather standard for Edward's castles, in that the each of the many towers has elite accommodation and has a spiral stair rising to the wall walk that links this elite accommodation vertically. The special arrangement in the Chapel Tower, where after a straight stair, a spiral leads to a raised private chamber looking down into the Chapel – again with echoes of Charlemagne – delineates what are relatively public and private spaces.

Caernarfon

Edward I's construction at Caernarfon of his castle and town was highly significant in its day, although the castle was never fully completed and on occasion work was suspended – once to utilise the workforce on a siege, and once 'due to demands in Gascony and once due to war in Scotland'.[524] There had been settlement in this area from at least Roman times with a fort – *Segontium* – on nearby Llanbeblig Hill. There is a belief that Emperor Constantine was born at Caernarfon and thus

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[524] Ibid., p. 16.

by constructing a castle here with echoes of Constantinople, Edward was making a symbolic link between the past and the present.[525]

The first castle, a motte and bailey structure, was thrown up by Hugh of Avranches, earl of Chester, in 1090 and the bailey is still found outside the Queen's Gate.[526] This was taken in 1115 by Llwelyn ab Iorwerth, who granted the town charter status in 1221, and in 1284 it became the administrative centre of the Principality of North Wales through the Statute of Rhuddlan. Caernarfon was never a great commercial success: in fact Conwy and Beaumaris each had more burgage plots than Caernarfon. The town's original earth and timber defences were replaced with stone walls with apsidal mural towers that are regularly placed approximately every 70 metres. There are two main gates at either end of High Street that runs down to the quay and some lesser gates for convenience.

Both town and castle are situated on a peninsula between the Rivers Seiont and Cadnant with the castle to the south nearest the River Seiont, making the town slightly irregular in shape and giving the castle a slight 'waist' or figure of eight shape. Through ditching, the town and castle were surrounded by water for defence, access by sea and for image. For cheapness and for effect, much use was made of the Roman stones from nearby *Segontium*. Timbers from the great halls of the Welsh Princes – such as Dolbadarn – were removed to Caernarfon and included in the castle's structural fabric not only to reduce costs but also to emphasise Edward's power, control and superiority over the Welsh. Work began in 1283 and moved on rapidly, as it did in the other Edwardian castles and *bastides* in Wales.

Although large, the castle did not hold all the offices of the shire within its walls. The exchequer was lodged in the town above the East Gate and it was probably here that monies were paid – using the chequer board[527] – to people like Roger de Staundon, sheriff of Meirionnydd, a new post created along with Edward's new

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[525] M. T. Clanchy, England and its Rulers 1066-1272, (Oxford, 2nd edn, 1998), p. 220.
[526] Fradley, 'Space and Structure at Caernarvon Castle', p. 169.
[527] Clanchy, England and its Rulers, p. 50.

shires in Wales.[528] The justice's lodgings were near the corner of Castle Ditch
Street and Shire Hall Street.
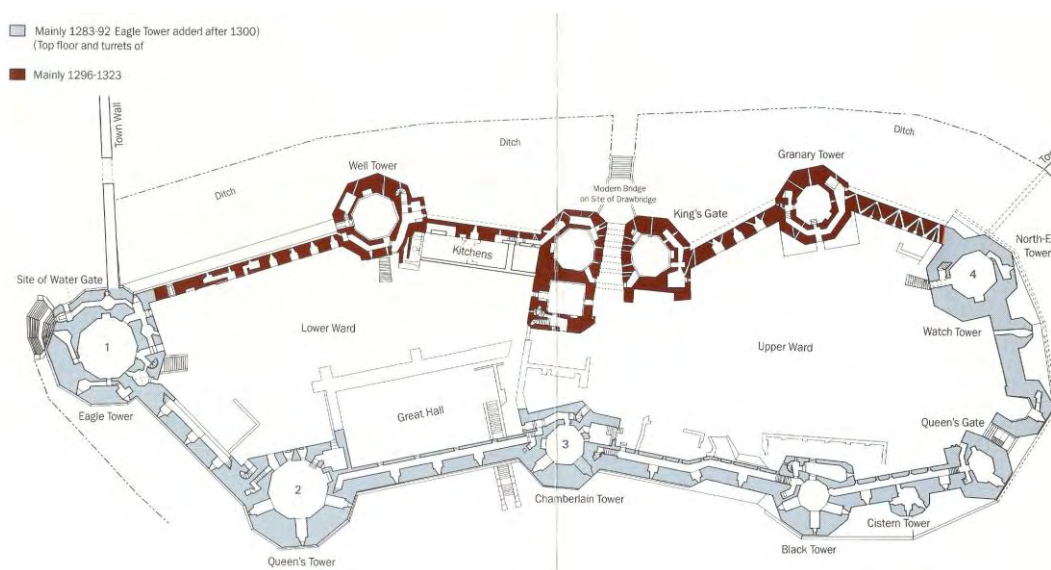
Figure 76. Caernarfon Castle: Site Plan.
Courtesy of Cadw.

The castle consists of Upper and Lower Wards with two polygonal twin
gatehouses, seven large towers and two small towers (Figure 76). The Upper Ward
incorporates the 1090 motte, giving a large difference in ground level between the
two wards. The construction of the castle has been determined to be in two phases,
the first from 1283 to 1292, when the southern structure from the Eagle Tower to
the North-East Tower was built, and the second phase from 1296 to 1323, when
the town side of the castle including the King's Gate and the Granary and Well
towers were constructed.

The first tower seen on approaching Caernarfon by sea is the Eagle Tower
surmounted by its three turrets, which enhance its height. The crenellations of the
tower are decorated with stone heads to give the impression that the walls were
strongly manned. Externally, wide stone steps rise up to the entrance to the tower.
From the Lower Ward, wide straight steps descend to the Eagle Tower's basement.
At the raised ground floor level, the tower is entered from the Lower Ward by a
door that can be barred from the inside, leading to a passage to the ground floor

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[528] L. B. Smith, 'The Governance of Edwardian Wales', in T. Herbert and G. Elwyn Jones (eds),
Edward I and Wales, (Cardiff, 1988), p. 85.

that has a fireplace but no direct natural light. Off this room are wall passages and small rooms in the thickness of the octagonal tower, whilst off the south side of the entrance passage a short passage leads to an anticlockwise spiral stair that at the bottom is 98 cm wide with an outer tread of 35 cm, a 20 cm riser and an 18 cm newel. At the foot of this stair, a 48 cm wide doorway leads to a small octagonal room – probably a chapel – with a slit looking onto the first floor and another out to the Lower Ward.[529] At first floor level the spiral stair joins an intramural passage with window seats, arrow slits, a garderobe and a 47 cm wide doorway leading to small chamber with a 47 cm wide exit doorway (Figure 78). Off this intramural passage a 101 cm wide doorway leads to a lobby, and then a 119 cm wide doorway gives access to the main well lit chamber with a fireplace. At second floor level, a 68 cm wide doorway leads to a garderobe, while an 89 cm wide doorway leads to the main chamber with a fireplace and window seats. From this room steps up to a 74 cm wide doorway lead to a small chamber with an external window and a possible 68 cm wide doorway to the main chamber that is set above floor level. At this point the spiral stair is narrower than at the bottom, being 78 cm wide and with an outer tread of 35 cm, a 20 cm riser and an 18 cm newel and it continues to roof level. At roof level there are three turrets. In one turret the original spiral described above continues, but access is prevented by a locked gate. Of the other two, the north-east is gated and the north-west contains a clockwise spiral some 73 cm wide, with an outer tread of 40 cm and a 20 cm riser and an 18 cm newel lit by slits. The doorways to these turrets are 78 cm in width.

The Queen's Tower is now the regimental museum of the Royal Welch Fusiliers and is not as accessible as the other towers for this fieldwork. Strangely, a 90 cm wide doorway that can be barred from the inside leads from the Lower Ward, along a short passage to a clockwise spiral with a 103 cm wide step, an outer tread of 45 cm, a riser of 18 cm, and a newel of 18 cm lit by slits. This stair rises from the ground level to the top room. The ground floor is not accessible from this spiral stair.

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[529] A. Taylor, Caernarfon Castle, (Cardiff, 1986), p. 32. See also C. Kightly, A Royal Palace in Wales: Caernarfon, (Cardiff, 1991), Taylor, Studies in Castles and Castle-Building and Taylor, 'The date of Caernarvon Castle', Antiquity, Vol. 26 (1952).

Figure 77. Caernarfon Castle: Eagle Tower Interior.
Illustrating the doorway from the ground floor small chamber to the spiral to the wall walk.
Photographer: C. Ryder.

East of the Queen's Tower, against the curtain wall, stood the Great Hall that linked to the Chamberlain Tower. There are entrances to the Chamberlain Tower from both the Upper and Lower Wards. From the Lower Ward a doorway leads to an intramural passage that runs through the tower to the Upper Ward, where there is another outer doorway. Near to the doorway from the Upper Ward a spiral stair rises clockwise from the ground floor to the top of the tower. At the bottom, the step is 100 cm wide, the outer tread 40 cm wide, the riser 20 cm and the newel 18 cm in diameter. Higher up, the width of the step is 76 cm, with an outer tread of 30 cm a riser of 18 cm and a newel diameter of 18 cm. The stair is lit by slits and there is a small landing near the top of the stairs. Off the stair, the doorways to the first and second floor chambers are 86 cm wide, whilst the doorway to the chamber on the third floor is 56 cm wide and that to the wall walk is 71 cm wide. A straight intramural unlit stair 63 cm wide, with a tread of 20 cm and a riser of 18 cm links the top room to the wall walk at the top of the tower. The Chamberlain Tower's

design is remarkable because at first and second floor level there are interior passages around the outer side of the tower.

East from the Chamberlain Tower and joined to it by the south curtain wall is the Black Tower. There is no external ground level access to this tower, and access is only along passages from the Chamberlain Tower to the west and the Queen's Gate to the east. Arriving from the direction of the Chamberlain's Tower, one mounts straight stairs to the higher ground-floor level of the Black Tower,[530] where there is a left turn into a small vestibule, then left again to ascend clockwise to the roof of the tower up a spiral with a 108 cm wide step, a 35 cm outer tread, an 18 cm riser and an 18 cm newel. Off the passage between the Black Tower and the Queen's Gate is the Cistern Tower, which is not accessible directly from the Upper Ward, only from the wall passage linking the Chamberlain Tower and the Queen's Gate. At ground level there is no fireplace in the hexagonal chamber with its three arrow slits, whilst above, there is a water cistern; there is, therefore, neither elite accommodation nor a spiral stair in the Cistern Tower. Taylor believes that it was intended that both of these towers were to be higher when completed.[531]

To the east of the Cistern Tower in the south-east corner of the Upper Ward is the Queen's Gate. Built on the remains of the 1090 motte, the gate stands high above the land outside the castle and its external access was via a ramp and a turning bridge. It is a twin-towered gatehouse with polygonal towers served by gates, murder holes and a portcullis, though its construction was never completed. A clockwise spiral rises from the second floor to the third, with an 80 cm wide step, a 28 cm outer tread, a 20 cm riser and an 18 cm diameter newel, but there is no natural light.

To the north of the Queen's Gate is the Watch Tower which contains neither accommodation nor spiral stairs. To the north of the Watch Tower is the North-East Tower, entered through a 107 cm wide doorway into a passage with another 107 cm wide doorway at the far end, leading into a chamber. To the left of this

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[530] Here the remains of the early motte of Hugh of Avranches make the ground level in the Upper ward higher than that in the Lower Ward.
[531] Taylor, Caernarfon Castle, p. 35.

passage is another short passage leading to a stair curving to the right, that in turn leads to a 119 cm wide intramural passage (with window seats and arrow slits) leading to the Queen's Gate. Off this passage is an anticlockwise spiral, with a step of 93 cm, a 30 cm outer tread, an 18 cm riser and an 18 cm newel. This spiral stair with slits rises to the top of the tower, and narrows at the top to 65 cm wide, with an outer tread of 28 cm, whilst the riser and newel are the same measurements as lower down. Doorways off the stair are 74 cm wide into the rooms and 59 cm wide to the wall walk. The doorway to the first floor garderobe is 76 cm wide.

![Caernarfon Castle viewed from the south across the harbour with boats in the foreground]

Figure 78. Caernarfon Castle.
View from the south with the Eagle Tower on the left and the Queen's Tower on the right.
http://www.busybus.co.uk/caernarfon-castle.

The King's Gate was part of the second phase of building here and links to the town. This twin polygonal-towered gatehouse – though never completed – dominates the town and the Seiont estuary and in 1321 a statue of Edward II was set above its entrance.[532] On its completion, the intention was that it would have a turning bridge and no fewer than five doorways and six portcullises – a number far higher than needed purely for defensive purposes, surely – plus murder holes and arrow slits. In the west tower of the King's Gate a doorway with a drawbar on the

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[532] Fradley, 'Space and Structure at Caernarvon Castle', p. 168.

inside leads to a passage that turns left and becomes a straight stair, which converts to a clockwise spiral, then splits off at first floor level into two straight stairs. The spiral with slits continues up but is now ruinous; however, the lower levels survive in sufficient order for measurements to be taken, revealing a 105 cm wide stair, with a 35 cm outer, a 20 cm riser and an 18 cm newel. A straight stair from the western King's Gate tower descends to the kitchens, constructed against the north curtain wall, which stretch between the western King's Gate tower and the four-storey Well Tower. A 107 cm wide doorway leads from the Lower Ward into an intramural passage, at the end of which is a doorway to an anticlockwise spiral stair lit by slits, which rises from the upper-ground floor to the third floor. At upper-ground level the stair is 90 cm wide, has a 38 cm outer tread, an 18 cm riser and an 18 cm newel. At first floor are a 76 cm wide doorway to a small chamber with a fireplace – possibly a kitchen[533] – and an 89 cm wide doorway to the main chamber with a fireplace and garderobe. A doorway to the wall walk is 68 cm wide. At the second floor the spiral stair is 90 cm wide, with an outer tread of 48 cm, a 23 cm riser, and an 18 cm newel. There is an 81 cm wide doorway to the third-floor chamber.

To the east of the King's Gate and linked to it and the North-East Tower by the curtain wall is the Granary Tower. The entrance to the Granary Tower from the Upper Ward is through a 115 cm wide doorway, leading to a passage that splits in three directions: ahead are steps to the basement; to the right an intramural passage to a well; and to the left an intramural passage to a spiral stair with a garderobe beyond. The spiral stair rises clockwise to the top of the tower and is lit by slits. The stair width is 83 cm at the bottom, narrowing to 76 cm at the top, with an outer tread of 33 cm, a riser of 20 cm and a newel 19 cm in diameter. The stair leads to rooms with window seats, garderobes and fireplaces, each entered by a 97 cm wide doorway and it also links to the intramural passages and wall walk through a 56 cm wide doorway. Although here and elsewhere, many of the spiral stairs and newels were renovated by Sir Llywelyn Turner in the late nineteenth

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[533] Taylor, Caernarfon Castle, p. 29.

century, sufficient of the original fabric remains to be fairly confident that these measurements reflect the dimensions of the original Edwardian structure.[534]

Caernarfon (Figure 77) is a large and complex castle with a mixture of straight and spiral stairs. The use of straight stairs is, in part at least, driven by the sloping site and having a number of towers without elite accommodation. So Caernarfon reveals a mixed use of spiral stairs: in some places they are used to access non-elite accommodation, perhaps employed because of the restricted and awkward nature of the site, while other spirals play their more typical role, giving access to elite accommodation and signifying the move from public to private and from communal to more restricted spaces. One innovation at Caernarfon is the use of intramural passages that skirt around the central chambers in some of the towers and require the employment of cleverly positioned slits to light the central chambers.

Harlech

The town and castle of Harlech are built on an impressive high promontory overlooking Tremadoc Bay, north to the Llyn Peninsula and the Welsh castle of Criccieth captured by Edward I in 1283. Harlech was another castle and *bastide* combination constructed to control the Welsh and Wales, to generate income and to give room for expansion for the growing population of English elite and their European supporters.[535] Construction began in 1283 and was largely completed by 1289, with the exception of the wall to the north enclosing Castle Rock – finished in 1295 – and a fortified bridge to the main gate finished in 1323-1324.[536] The Harlech *bastide* was Edward's smallest, though it had the same complement of a weekly market, judicial courts, mill and town hall as the larger towns. Similar to the Welsh-founded Criccieth nearby, Harlech town did not have a town wall and as a result the town was easily overrun in 1401 by the Welsh.[537] With Criccieth so close, it is worth considering why Harlech was built. One idea is that – as in other

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[534] Ibid., p. 20.
[535] For example, Wizo and Frodo, both of Flemish origin, were granted manors in South Wales *circa* 1100 and built motte and bailey castles there – Wizo at Wiston.
[536] Only the bridge supports remain today.
[537] Norris, Welsh Castles at War, p. 130.

locations chosen by Edward – there was a link to the past, for at Harlech there is a link to the *Mabinogion* and the Celtic god Llŷr. Between 1400 and 1414 Harlech Castle played a role in the uprising of Owain Glyndwr and fell to the Welsh in 1404 after which he set his court here. In 1408-1409 the English using cannons besieged it and probably damaged the south and east curtain walls that were its most likely points of attack. In 1460, Harlech played a role in the Wars of the Roses, housing Margaret of Anjou, wife of Henry VI, and later falling to the Yorkists. Few repairs seem to have taken place after this, although the castle, or part of it, was in a suitable state to hold Elizabeth I's Merrioneth assizes. Harlech was the last royalist stronghold to be taken during the civil war and Taylor states that the two spiral staircases in the Gatehouse were destroyed soon after this, although the instruction to slight the castle was never carried out.[538] Harlech remained a crown property and is now cared for by Cadw. Repairs have been undertaken to the entrance arches and many of the spiral stairs have been partly reconstructed.

The concentric castle is almost rectangular, with a longer eastern wall to contain the Gatehouse (Figure 79). The relatively narrow Outer Ward completely surrounds the Inner Ward and there are two further areas bounded by an outer wall that was built in two distinct periods – the first to the south and east protecting the Ditch, and the second to the north and west protecting Castle Rock. The latter has three gates, one of which – the Water Gate – would be the access to the sea. The principal entrance to the castle is through the town, across a defended bridge – now destroyed – and through the dominant, twin almost-circular-towered Gatehouse,[539] offering a gate passage with three doorways, three portcullises, two arrow slits and a doorway to a guardroom.[540] This three-storey gatehouse contains the most significant set of rooms in the castle, for at each of the three levels both gatehouse towers were divided into two rooms – front and back – whilst at the front and above the passage were two chapels with a vestry at each side. The front rooms

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[538] Taylor, Harlech Castle, p. 13. See also N. Coldstream, 'The Castle Builders: Harlech and Caernarfon', in B. Ford (ed.), The Cambridge Guide to the Arts in Britain 2: The Middle Ages, (Cambridge, 1988), Taylor, Studies in Castles and Castle-Building and Taylor, 'Harlech Castle', Archaeological Journal, Vol. 132 (1975).

[539] *Le Gemeltour Supra Portem,* i.e. Twin Tower over the Gate according to Taylor.

[540] or Porter's Room.

facing the entrance are apsidal and the first and second floor rooms each have a fireplace, windows with window seats and garderobes on each side of the Gatehouse. However, in the south tower of the Gatehouse, at first floor level, the rear room extended across the Gatehouse passage and is interpreted as a Great Chamber,[541] accessed from a wide, impressive set of straight, external stairs leading to the grand entrance to this chamber. It is more than likely that Sir John Bonvillars of Savoy was lodged in these rooms in his role as castle constable and deputy justiciar of North Wales in 1285, and 'It seems likely that the first-floor apartment in the gatehouse was quickly made to receive John and his wife Agnes in the closing months of 1285'.[542] The constable, warden or castellan of the castle was a post of 'great honour'[543] and no doubt responsibility which would have accommodation to match the position, but it was also a perilous position in times of siege.[544] It is assumed that after his death in 1287, his widow continued to inhabit the rooms, even though in 1290 Master James of St. George became the constable of Harlech Castle. At the rear of the Gatehouse are two stair turrets where in each case the spiral stair fills the whole of the circular turret, highly unusual in Edward's castles. The spiral in the stair turret to the south of the Gatehouse leads to the upper floors and roof or wall walk and is accessed from the south Guardroom, through a 83 cm wide doorway with a drawbar to secure it from the stair side, giving access to a passage 313 cm long and 96 cm wide, at the end of which a clockwise spiral stair rises. The steps on this stair are 124 cm wide, with a 15 cm riser and a 45 cm outer tread. The newel is 25 cm in diameter. There are 143 stairs and eleven slit windows with doorways leading off to the first floor, second floor and wall walk. The design of the north Gatehouse stair turret is a mirror image of the south, except that the both spirals are clockwise.

Around the Inner Ward on the remaining three walls are the remains of buildings that include the Well, Granary, Bakehouse, Kitchen, Buttery, a third Chapel, a Great Hall with screens passage and doorway to the Outer Ward and the Ystumgwern Hall, a relocated Welsh hall from Ystumgwern. To the left of the doorway into the Great Hall screens passage, there is a 50 cm doorway leading to

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[541] Taylor, Harlech Castle, p. 24.
[542] Ibid., p. 7.
[543] Tenen, This England, p. 158.
[544] J. Bradbury, The Medieval Siege, (Woodbridge, 1992), p. 77.

the remains of a clockwise spiral, which possibly accessed rooms above the Buttery and Kitchen or a gallery or slit overlooking the Great Hall. The stair has been reconstructed.
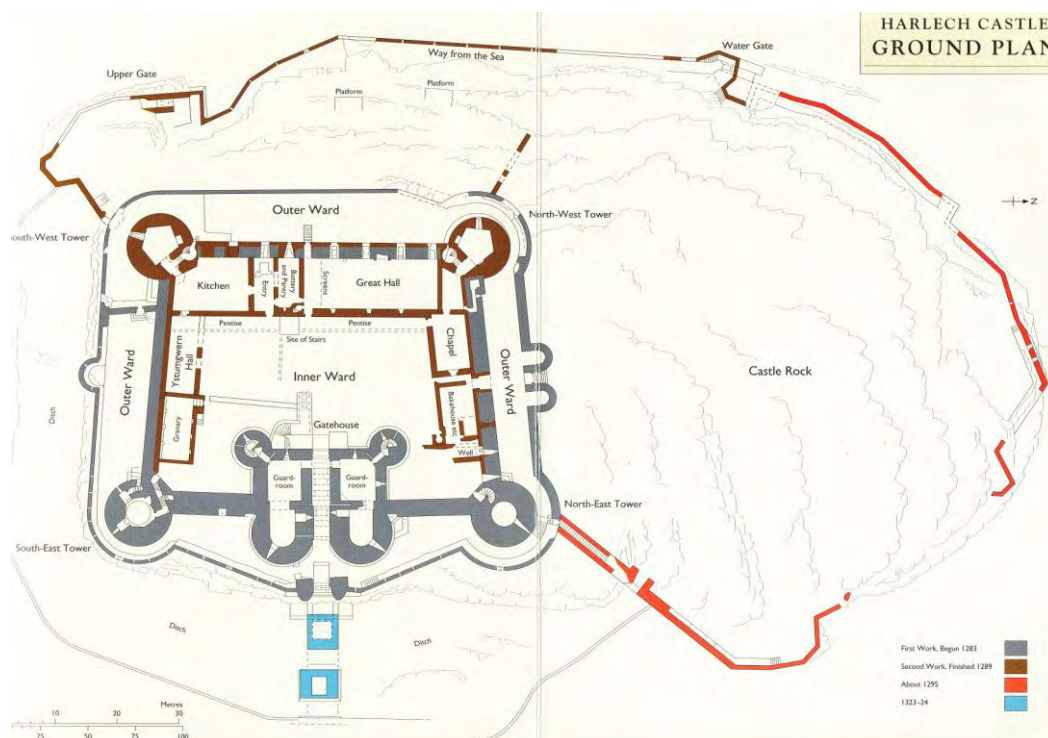
Figure 79. Harlech Castle: Site Plan.
Courtesy of Cadw.

The South-East Tower has three storeys with a circular basement lit by a slit. In a 1343 survey this is called *Turris Ultra Gardinum* or Garden Tower and in 1564 it is named Mortimer's Tower.[545] The upper two floors have seven sides, a fireplace and widows with a garderobe at first floor level. This tower is entered from the Inner Ward through a 96 cm wide doorway leading to a 157 cm long passage that is 110 cm wide; at the end of this, a 97 cm wide straight stair with a 28 cm tread and 20 cm riser leads to a clockwise spiral, which after ten steps splits left and right and is no longer spiral. The left stair continues up and is 89 cm wide, with a 24 cm tread and an 18 cm riser and then turns left into an intramural passage to the wall walk. The right stair continues straight and is 94 cm wide, with a 24 cm tread and 23 cm riser and turns right to an 81 cm wide doorway to a chamber.

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[545] Taylor, <u>Harlech Castle</u>, p. 27.

Figure 80. Harlech Castle: Rear of Gatehouse.
Illustrating to the left and right extremes of the photograph the large stair towers.
Photographer: C. Ryder.

The names for the towers have changed over the years. The South-West Tower and North-West Tower or Armourer's Tower were made by Master William of Drogheda and are almost mirror images of each other. In 1343, the South-East Tower was named as *Le Wedercoktour* or Weathercock Tower and in the 1564 survey named as the Bronwen Tower, whilst the North-West Tower in 1343 was named *Le Chapeltour* or Chapel Tower and in 1564 named as the Armourer's Tower.[546] These towers appear to have four floors with fireplaces and windows with window seats on each of the upper three floors, whilst basements lit by a slit appear to have had no direct access from the Inner Ward and were probably

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[546] <u>Ibid</u>., p. 27.

accessed through trap doors from the first floors of both towers. Because of the ruinous condition of the spiral stairs, it is not possible to enter and take measurements, but it can be seen that both of these towers were accessed by a doorway some 100 cm wide that led to a passage, in turn leading to the pentagonal first floor room. To the right off this passage in the South-West Tower and to the left in the North-West Tower and up a few steps rises clockwise spirals lit by slits, both stairs ascending into turrets that top both towers. The doorway to the South-West Tower is accessed through the Kitchen, whilst the doorway to the North-West Tower is accessed though the Chapel and then through an unnamed passage or room. The spiral in the South-west Tower also leads to a postern and steps down to the Outer Ward. The rooms on the upper floors all have windows, with the middle two rooms having fireplaces; unusually, these rooms are pentagonal, although there is no structural reason for this in a round tower and this raises questions why they should be so.[547]

Entry to the North-East Tower is through an 81 cm wide doorway into a passage 157 cm long and 99 cm wide. To the left of the passage, a clockwise spiral stair – lit with slits – with 112 cm wide step, a 15 cm riser and a 47 cm outer tread with a 22 cm diameter newel rises up to the wall walk past two floors. At the first floor is a passage with a garderobe off, accessed by a 66 cm wide doorway, and a 77 cm wide doorway leads to the first floor chamber with a fireplace and two widows with window seats. Across the hall, an 84 cm wide doorway leads to an intramural stair to the second floor with a fireplace and one window with window seat. Across the hall is a straight intramural stair up to a garderobe without any apparent doorway that is at the head of this stair and next to the doorway to the wall walk.

The use of stairs at Harlech is very interesting and different from most of Edward's castles in North Wales in two ways: firstly, in the use of stair turrets where the stair fills the whole space; and secondly, that the stair turrets are so obvious to the observer and part of the design of the castle, whilst in other castles the spiral stairs are generally built into the fabric of the building. Here at Harlech, the obvious

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[547] It is perhaps worth noting that Holt Castle, Wrexham, is of a pentagonal shape.

stair turret makes a statement that there are important rooms above, reinforcing their role as demarcating movement from public to private space (Figure 80).

Denbigh

Denbigh Castle, Denbighshire (Figure 81), stands on a rocky outcrop that dominates the Clwyd Valley, a major route into Wales from the north coastal plain. For the Welsh, Denbigh was in the *cantref* of Rhufoniog and was an ancient Welsh princely seat held by Dafydd ab Gruffudd, which served as his main stronghold with hall, private room, chapel, buttery and Bakehouse.[548] These were sufficiently strong to resist Edward I's siege for a month in 1282 until the complex fell to Henry de Lacy, earl of Lincoln, accompanied by Edward I and Master James of St. George. Afterwards de Lacy was given the task of building a castle at Denbigh by the king.[549] There is an abundance of contemporary information about the building of Edward's castles in surviving royal financial accounts, but little about this one by de Lacy, although we know that within one year of commencing construction de Lacy was requesting deer for the park, implying that building was well underway by then.

At Denbigh, we see a planned castle and *bastide* combination, typical of Edward I's conquest of Wales. The castle and original town were constructed on a rather inaccessible hilltop site overlooking the agriculturally rich Vale of Clwyd,[550] and although the original charter of 1285 mentions 63 burgesses, it makes no reference to town walls, though a second charter from 1295-1305 does mention town walls.[551] The castle and town are designed as a hill-top unit and because they follow its contours they are of irregular shape, with the town to the north of the castle and lower down the slope. Today the town walls are an almost complete circuit, perhaps due to the migration of the inhabitants down the hill beyond the

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[548] L. A. S. Butler, Denbigh Castle, (Cardiff, 1990), p. 5.

[549] Ibid., p. 6. See also C. Smith, 'The Exchequer Gate, Denbigh', Archaeology in Wales, Vol. 22 (1982) and Smith, 'The Excavation of the Exchequer Gate, Denbigh', Archaeologia Cambrensis, Vol. 137 (1988).

[550] Limestone from the hilltop was used except for the major elements of the castle – Great Gatehouse, Green Chambers and, in the town, the Burgess Gate and Goblin Tower – where local sandstone was used.

[551] Soulsby, Towns of Medieval Wales, p. 121.

walls for easier access to the wider world once the castle as a focus point for wealth generation and defence began to fade. Although an excellent defensive site, the hilltop location was not conducive to commerce and the new town declined and has not recovered, though a later flourishing town, the modern town of Denbigh, subsequently grew on an entirely different valley site. The castle changed hands many times over the centuries until in the mid nineteenth century a local committee was formed and commenced clearing the ruins; in 1914 they were handed over to the Department of Works and today are managed by Cadw.
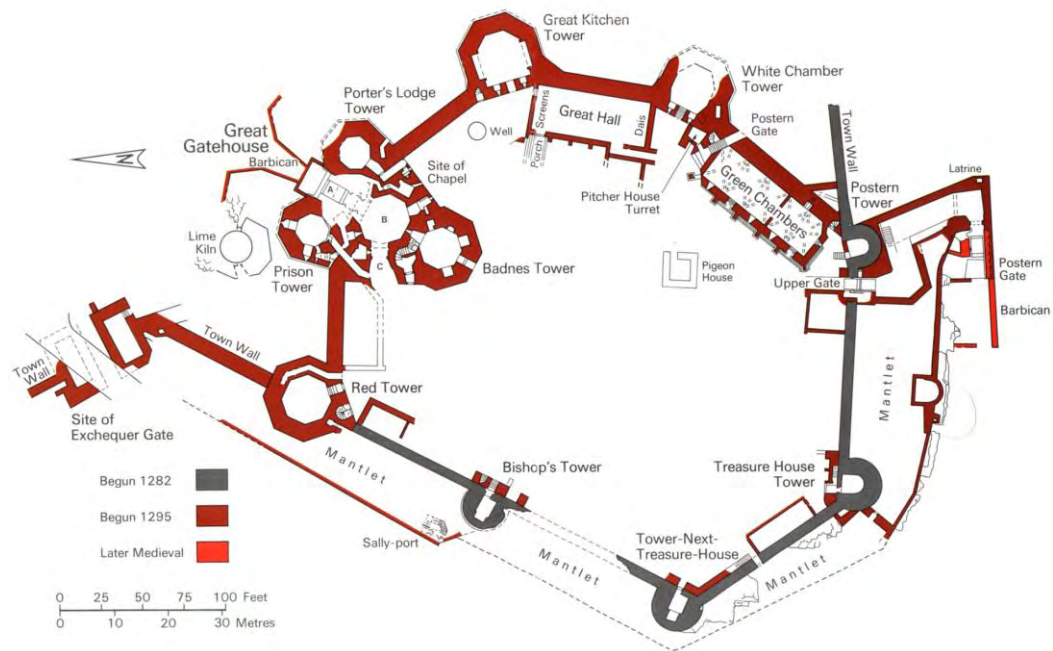
Figure 81. Denbigh Castle: Site Plan.
Courtesy of Cadw.

The Great Gatehouse at Denbigh is extraordinary in its huge size and its three octagonal towers on which construction started in 1295 – the Porter's Lodge Tower, the Prison Tower and the Badnes Tower, named after an early constable of the castle. The inner ward was accessed via a turning bridge, past two portcullises and gates into the central vaulted area and then a right turn through a further portcullis and doorway. Access to the upper parts of the towers was from a straight stair into the Porter's Lodge Tower and a spiral stair from the inner bailey to the other two towers.

The Great Kitchen Tower is to the east of the Great Gatehouse and it has a ruinous clockwise spiral stair from the ground floor to – possibly – the roof, with no apparent window slits. The entrance to this tower was at ground floor level from the inner bailey through a doorway 108 cm wide – the doorway would have opened inwards and would have been secured by a bar – to a passage 130 cm wide and 135 cm long, at the and of which is a spiral stair rising clockwise with a width of 108 cm and an outer tread of 43 cm, a riser of 23 cm and a newel 17 cm in diameter. To the south of the Great Kitchen Tower stands the White Chamber Tower with the Great Hall in between. There is a clockwise spiral here but it is too ruinous to measure. Moving around the castle in a clockwise direction from the Great Gatehouse, the next spiral stair to be found is off the passage to the Postern Gate and next to Green Chambers. It has a doorway 60 cm in width that leads to an 87 cm long and 75 cm wide passage, at the end of which a clockwise spiral stair rises from ground floor level that is 90 cm wide with an outer tread of 45 cm and a riser of 23 cm but there was no sign of a newel (Figure 82). The structure was too ruinous to observe any window slits.

Following the clockwise direction, there are straight stairs to the Postern Tower and the Treasure House Tower, but the next spiral stair observed was in the Bishop's Tower. There a 120 cm wide doorway leads to 51 cm long and 122 cm wide passage, at the end of which an anticlockwise stair rises from the ground floor that has a 120 cm wide step, with an outer tread of 30 cm, a riser of 17 cm but no sign of a newel and much like the spiral stair leading to the Green Chambers it is too ruinous to observe any window slits. The final tower before arriving back at the Great Gatehouse is the Red Tower, which has a barred doorway opening inwards from the inner bailey that is 75 cm wide and leads to a 147 cm long and 120 cm wide passage. At the end of this passage a spiral stair rises from the ground floor in a clockwise direction with a 115 cm wide step, an outer tread of 50 cm, a riser of 18cm and a newel 17 cm in diameter. It is too ruinous to observe any window slits. Outside the walls there is a Sally-port to the west. Here a mixture of straight and curved stairs descend the hill, with the spiral stair 107 cm wide and a tread of 25 cm, with a riser of 23 cm There are no window slits but there are two murder holes and a portcullis slot. At the bottom there is a doorway to the castle exterior that is 81 cm wide.

Figure 82. Denbigh Castle: Spiral to the Green Chambers.
Illustrating straight steps from the postern with a door off locked from the inside with a
drawbar and spiral steps to the Green Chambers.
Photographer: C. Ryder.

In the town walls, there are two gates – the Exchequer Gate and the Burgess Gate –
that have rooms above them. However, none of these gate towers have spiral
stairs. The Exchequer Gate is much ruined but there are more remains of the
Burgess Gate, where a straight intramural stair runs from the larger space in the
west tower from the first floor to the wall walk. The wall towers – North Eastern
Tower, Countess Tower, Goblin Tower and Bastion Tower – do not have spiral
stairs.

Field research at Denbigh Castle yielded evidence of a difference between the number of towers with spiral stairs compared to Edward's castles in Wales. Whereas in Edward's castles in Wales described in this chapter there is generally a spiral stair in each tower, here at Denbigh Castle it appears that several of the towers do not have spiral stairs. It appears that the towers without spiral stairs are those where construction commenced *circa* 1282. These are the Postern Tower, the Treasure House Tower, the Tower-Next-Treasure-House and the Bishop's Tower and they are smaller than the later towers – Red Tower, Prison Tower, Badnes Tower, Porter's Lodge Tower, Great Kitchen Tower and White Chamber Tower. Given that lords have fewer high status followers than kings, the castle of a lord would have fewer high status chambers and lodgings within its enceinte and this is borne out at Denbigh. The difference in the presence of spiral stairs between the older and newer towers can be interpreted as the early stage of construction of the castle being concerned with raising a defensible perimeter for holding the military personnel and craftsmen and the later and larger towers with spiral stairs as offering accommodation to people of status within the now fully functioning castle. The theory that the castle was strengthened after the defeat of Madog ab Llywelyn in 1294 goes some way in explaining the raising of the curtain wall for reasons of defence, but these alone do not fully explain the construction of the towers and gatehouse with their high status rooms. Thus the inclusion of spiral stairs in the new towers with their high status rooms supports the case for spiral stairs indicating a movement from private lodgings or rooms to higher status spaces of the elite.

Beaumaris

The construction of Beaumaris Castle and its accompanying *bastide* commenced in 1295 and a borough charter was granted in 1296. It appears that Beaumaris was an afterthought of Edward's strategy and was initiated as a result of Madog ab Llywelyn's attack on Caernarfon in 1294 which indicated a gap in the ring of defences around North Wales. The site selected was a low-lying marsh area close to the sea, similar to Flint, and, to make space for the development, local inhabitants were moved and their dwellings destroyed – as at Caernarfon. The

castle is close to the village of Llanfaes which was important on the route to Ireland and was also once a *llys* and resting place of Joan, daughter of King John, in the Franciscan monastery founded by her husband, Llywelyn ab Iorwerth. The castle is sited to the east of Beaumaris town and nearer to the Menai Straits towards the Irish Sea. There is no record of Beaumaris town originally having walls or outer defences and stone walls were only raised in 1414, with further additions in the early sixteenth century. It also seems likely that the south-west corner of the town walls was washed by the high tide and stood proud at low tide.[552] Of all of Edward's *bastides*, Beaumaris had the largest take up of burgage plots and soon spread beyond its boundaries.

Work at Beaumaris Castle was never completed and this gives the castle its rather 'squat' look, because the higher parts of the towers were never added. Its chief architect, Master James of St. George, died during its construction in 1309, but work continued until the 1330s. In later years, little damage was done to the castle either through sieges – the castle was taken by the parliamentarians in 1646 and again in 1648 – or through slighting. Being in a swampy area, there was a local dearth of building stone, which instead had to be transported by water from 'Penmon and beyond Benllech'[553] to the site and this increased the costs considerably. A solution for reducing the costs would be to transport cut and partially dressed stone and to facilitate this, the use of standard building units could be employed. The use of standard, pre-cut building blocks probably suited the construction of a concentric, symmetrical castle on this flat site. Some of the stone work appears to have been robbed in the nineteenth century, perhaps for the new jail in 1829, and there are records of people being caught removing the lead from the roofs from earlier times. The movement of the economic hub of Anglesey to Holyhead probably assisted in minimising the impact of modern destruction on the castle and today it is maintained by Cadw.

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[552] Ibid., p. 79.
[553] A. Taylor, Beaumaris Castle, (Cardiff, 4th edn, 1999), p. 7. See also Taylor, Studies in Castles and Castle-Building, Taylor, 'Beaumaris Castle', Archaeological Journal, Vol. 132 (1975) and Taylor, 'The Beaumaris Castle Building Account of 1295-1298' in Kenyon and Avent (eds), Castles in Wales and the Marches.
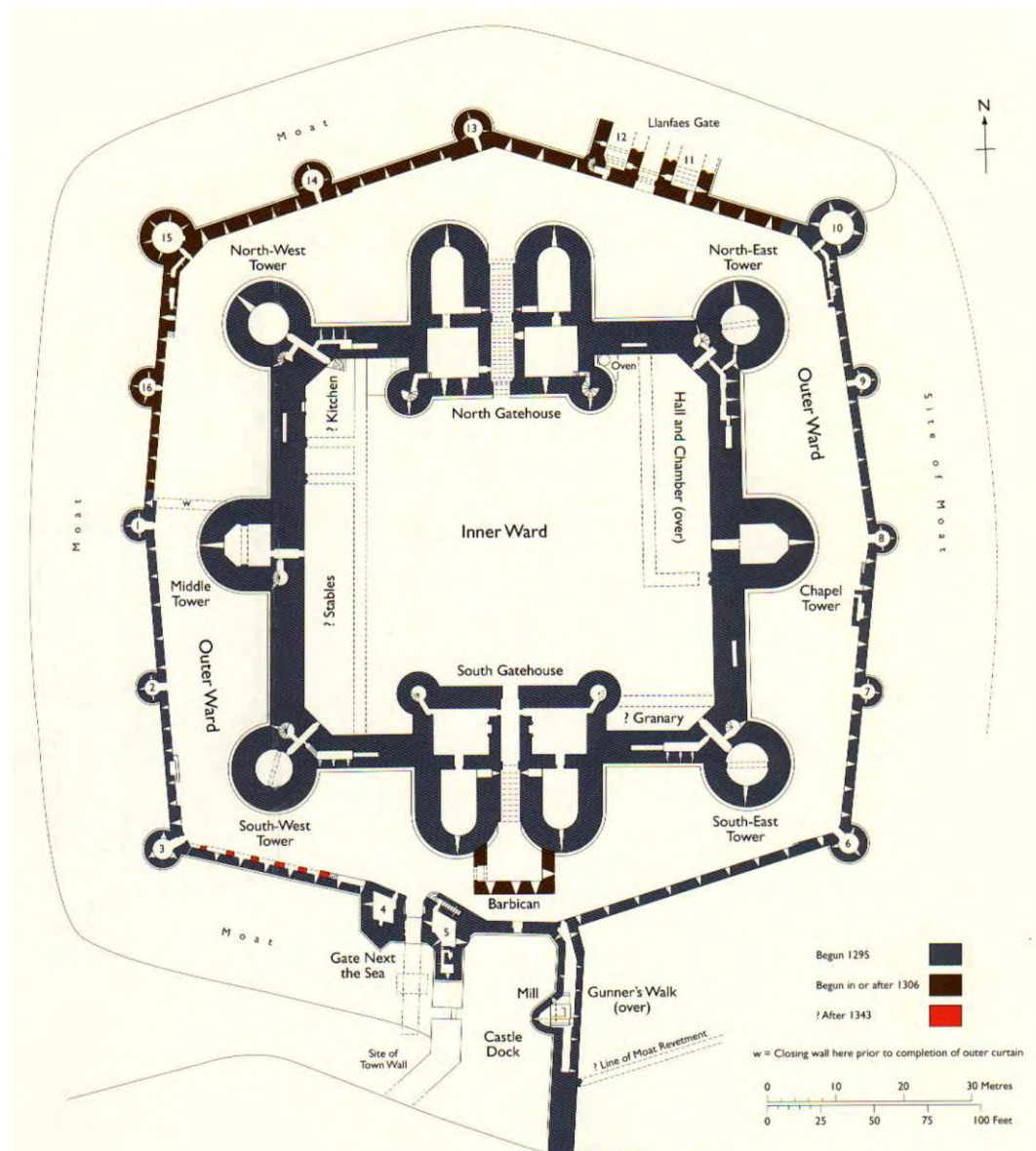
Figure 83. Beaumaris Castle: Site Plan.
Courtesy of Cadw.

This concentric, symmetrical structure sits along the lines of the compass, with its two twin apsidal-towered gatehouses sitting on a line due north to south (Figure 83). Entrance to the castle across the wet moat is either from the north, through the Llanfaes Gate, or across a turning bridge and through the Gate Next the Sea that gives access from the town and from the sea via Castle Dock. The Gate Next the Sea is a twin multi-angular towered gatehouse with a passage between the two towers into the Outer Ward and is slightly offset from the South Gatehouse to the west. Access to each side of the Gate Next the Sea towers is through ground-level doorways and in the east tower a raised ground floor passage leads to a clockwise spiral and up to a chamber with a fireplace. Unfortunately, access to take

measurements was not possible for safety reasons.[554] From the Gate Next the Sea access into the Inner Ward is across the Outer Ward and through a right turn into the barbican and then a left turn towards the South Gatehouse.

The South Gatehouse has echoes of Harlech Castle with its twin apsidal towered gate with circular stair turrets at the rear. The gatehouse passage was fitted with doors, portcullises, arrow slits and murder holes. At the rear was a door on either side of this passage leading into a symmetrical ground floor room and to the stair turret, leading up to the accommodation above and possibly to the wall walk, as at Harlech.[555] The clockwise stair in the east tower of the South Gatehouse is not accessible but can be seen to have been accessed through a door that opens into a short passage, whilst the stair in the corresponding west stair tower is a clockwise spiral of which only a few steps, 99 cm wide, with a 20 cm diameter newel, now remain.

The South-West Tower, North-West Tower and South-East Tower are all very similar, in that they are all circular, were designed to be three storeys high and are all accessed through a doorway from the Inner Ward into a passage that runs straight into the chamber at that level. Off each is a passage with garderobes and a spiral stair, lit by slits, that would have risen – or was planned to have risen – presumably to the top of the tower and would have accessed the two upper floors and wall walk, as at other Edwardian castles. Each basement is lit by a slit and accessed through a trap door in the floor above. The principal chamber in each tower was on the first floor and had two windows and a fireplace and was supplied with a garderobe. The second floor of the South-East Tower indicates that at this level there would have been the same amenities in these chambers as at first floor level in all the towers.

The South-West Tower has an anticlockwise spiral but only a few steps now remain, which are 104 cm wide, with an outer tread of 35 cm, a riser of 20 cm and a newel of 22 cm diameter. The other steps are clearly modern and were thus not measured. The North-West Tower has an anticlockwise spiral but it is

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[554] It was described as in a very bad state in William de Emeldon's survey of 1343.
[555] Although it is likely that the upper floors of south gatehouse were never completed.

inaccessible. The South-East or Pillardesbathe Tower has a clockwise spiral that has a 102 cm wide step and a 19 cm riser but is in a ruinous state.

The North-East or Rusticoker Tower is slightly different from the other three corner towers of the Inner Ward in that the passage from the Inner Ward does not lead directly into the chamber but forces the person entering to turn right and then left and then left again along a corridor. The anticlockwise spiral stair is off the corridor close to the entrance from the Inner Ward but it is in a ruinous condition. It can be seen that at first and second floor levels the chambers were similarly appointed to those in the other three corner towers of the Inner Ward.

Figure 84. Beaumaris Castle Middle Tower.
View down the anticlockwise spiral.
Photographer: C. Ryder.

The Middle Tower is accessed from the Inner Ward through a doorway and a passage through to the ground floor chamber, and off the passage to the left at the end of a short passage is an anticlockwise spiral that is inaccessible. A second spiral in the Middle Tower is also anticlockwise and inaccessible (Figure 84).

The Chapel Tower is entered from the Inner Ward through a Hall with Chamber over that is constructed against the east curtain wall of the Inner Ward. The chapel is situated on the first floor. Entry to the chapel is through a pair of doors up a short but wide set of straight stairs and through a set of twin-arched doors with

trefoil heads. At the top of the short flight of straight steps already described were doors to the left and right. Behind the door to the right is a small chamber with seats and squints into the chapel and a further door to the wall passage in the east curtain wall leading to the South-East Tower. Off this south-running wall passage is a straight set of stairs leading to a private chamber with a window overlooking the chapel and a slit in the exterior wall lighting the chamber. Behind the door to the left is a similar arrangement, with a small chamber at wall passage level but without the second door to the wall passage and, instead of straight stairs leading to the chamber overlooking the chapel, there is an anticlockwise stair – 79 cm wide, with an 18 cm riser – that ascends to a private chamber with a window overlooking the chapel and a slit in the exterior wall lighting the chamber.[556] The second part of this arrangement has echoes of the chapel in Conwy Castle.

The North Gatehouse is much ruined and reflects only part of its previous grandeur. The North Gatehouse is a mirror image of the South Gatehouse in outline and resembles the Gatehouse at Harlech. The gatehouse passage was heavily defended with gates, portcullises, murder holes and arrow slits and there are two doorways from the gatehouse passage into the rear rooms of the gatehouse towers. These are offset, unlike the doors in the South Gatehouse. Access to the higher levels of the towers is via the spiral stairs in circular stair turrets at the rear of each gatehouse tower. On the west, there is a straight stair 85 cm wide, with a 21 cm riser from ground floor to a 145 cm long passage leading to a clockwise spiral with a 104 cm wide step, a 35 cm outer tread, a 17 cm riser and a 20 cm diameter newel. On the east there is a straight stair with a few more steps than the west stairs, but both are 85 cm wide, with a 21 cm riser. Unfortunately, a locked door prevented further measurements but the plan of the castle indicates a spiral stair rising in an anticlockwise direction. A further method of access to the first floor of the North Gatehouse was by an external straight stair – now removed – that gave entry through the western-most window of the first floor hall. The North Gatehouse was never completed and it is generally held that it would have had a second floor. As it stands, the first floor on the Inner Ward side appears to have been a great hall, but because there are two fireplaces perhaps it was divided by a

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[556] It was intended that this stair rose to a second floor above the chapel and probably to a wall walk.

wooden partition or intended to be divided later and the suspension of work in the 1330s prevented that change. The other six rooms in the North Gatehouse have fireplaces, including those above the gate passage, which means that they would not be designed as chapels, as at Harlech.

In the Outer Ward, the Llanfaes Gate to the north has signs of a clockwise spiral stair in the west gatehouse tower, accessed through a door from the Outer Ward into a passage that runs directly to the lower room in this tower. There are fireplaces in some of the mural towers in the outer curtain wall but none of these towers appears to have been accessed by spiral stairs.

The large number of lavishly equipped suites and chambers at Beaumaris reflects the fact that the king's court had greatly expanded now that the Prince of Wales was old enough to have his own staff. Moreover, Taylor suggests, because Beaumaris town had no walls the justiciar, constable and sheriff of Anglesey may well have had lodgings in the castle.[557] With all these elite spaces now in the castle, it was essential to have spiral stairs to define the limits of public and private space, hence the proliferation of spirals at Beaumaris Castle.

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[557] Taylor, Beaumaris Castle, (1999)p. 7.

Enclosure Castles in England

Old Sherborne

Between 1122 and 1137, in a marshy area of Dorset, Roger de Caen, Bishop of Salisbury, constructed Sherborne Castle on an octagonal-shaped, asymmetrical plan, broken by two parts of the design: the insertion of the North Gate and Barbican which is slightly east of centre, and the central core of buildings which is set slightly west of centre (Figure 85). The castle is very well constructed with rubble infilling and expensive stone dressing from Ham Hill, Somerset, utilised to promote and reflect the power and prestige of Roger that came with his elite role as Henry I's chancellor and justiciar.[558] The access route from the River Yeo led to and through the highly impressive North Gate and Barbican, after crossing over a stone rather than a wooden bridge, an unusual feature for the time. The present remains of the Gatehouse have clear indications of adjustment from the sixteenth century when, under the ownership of Walter Raleigh, many changes were undertaken, including the destruction of the Great Hall.

Entry from the North Gate leads into the Outer Courtyard, which would probably have contained the structures essential for the day-to-day functioning of the large elite household, for example, the stables and the brewery. Entrance into the Outer Courtyard could also be made through two other gatehouses set diagonally opposite each other in the outer wall. Fieldwork revealed that the Southwest Gatehouse had a spiral stair beginning at ground level, but as it has been blocked it was not possible to take any measurements here, whilst an inspection of the Northeast Gatehouse did not reveal signs of spiral stairs. This may tentatively indicate that there was elite accommodation above the Southwest Gatehouse but not above the Northeast Gatehouse, though the ruined state of both gatehouses makes this somewhat uncertain.

The central core of buildings has two courtyards – the Inner Courtyard and the West Courtyard – around which were originally arranged several structures,

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[558] P. White, <u>Sherborne Old Castle</u>, (London, 1993), p. 4.

including the Great Hall to the south and building ranges to the west, east and north. The Great Hall was accessed along the arcades of the Inner Courtyard, perhaps echoing the religious buildings and life familiar to Roger. Above the North Range there are double blind arcading decorations that may reflect his very high status. The arcades also lead to the straight stair that would give access to the first floor of the great tower. Unfortunately, this was destroyed by parliamentarian forces during the civil war and no traces of spiral stairs were observed, although the great tower would probably contain the private rooms of the lord, accessed by a spiral stair.
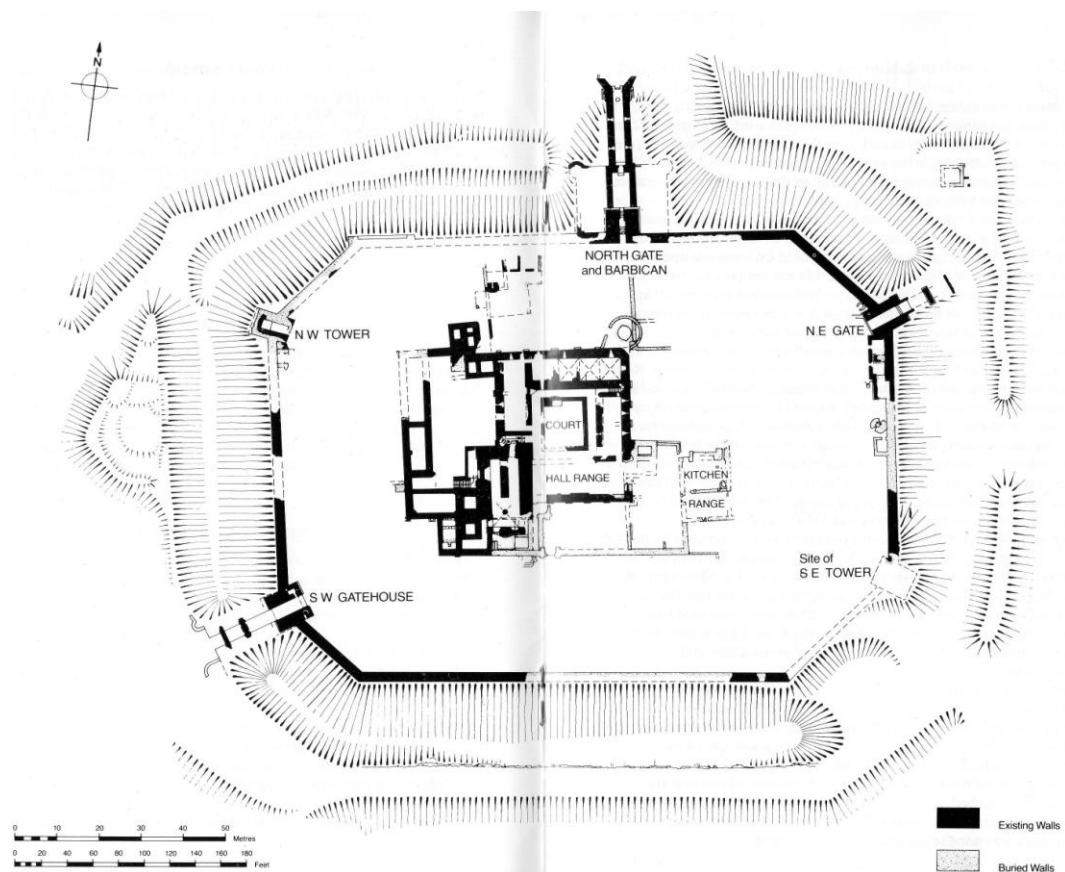
Figure 85. Old Sherborne Castle: Site Plan.
Courtesy of English Heritage.

The remains of the West Range show that it was of two storeys, with the ground floor probably barrel-vaulted and reception chambers above.[559] The garderobes in the turret indicate that this space was used for group meetings. The North Range

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[559] Ibid., p. 4. See also B. Davison, Sherborne Old Castle, (London, 2001), P. White, 'Sherborne Old Castle', Archaeological Journal, Vol. 140 (1983) and R. Ollard, 'Sherborne Castle', History Today, Vol. 44 (1994).

contained two superimposed chapels, with the more highly decorated – with double blind arcading – and thus the higher status chapel above the other. A 137 cm diameter spiral was positioned at the west end of the chapel, but the remains are too fragmentary to reveal any other dimensions. The East Range also has garderobes in a turret, but from the remains it appears originally to have been less decorative than the North Range and it seems reasonable to interpret this range as offering accommodation on the upper of the two floors for Roger's staff and perhaps the staff of elite visitors. The upper floor is accessed by a vaulted stair taking a 'U' turn but it is not a spiral.

Figure 86. Old Sherborne Castle: General View.
https://www.aboutbritain.com/sherborneoldcastle.htm.

For such a large castle (Figure 86) constructed for one of the richest and most important persons of his time, there are surprisingly few spiral stairs observed at Sherborne Castle. In part this could be because of the destruction of many parts of the castle, but also perhaps the unusual design with its use of courtyards and a tendency towards a horizontal plan for the structures around those courtyards would negate the need for spiral stairs.[560]

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[560] Ashbee, 'The function of the White Tower under the Normans', p. 139.

Farleigh Hungerford
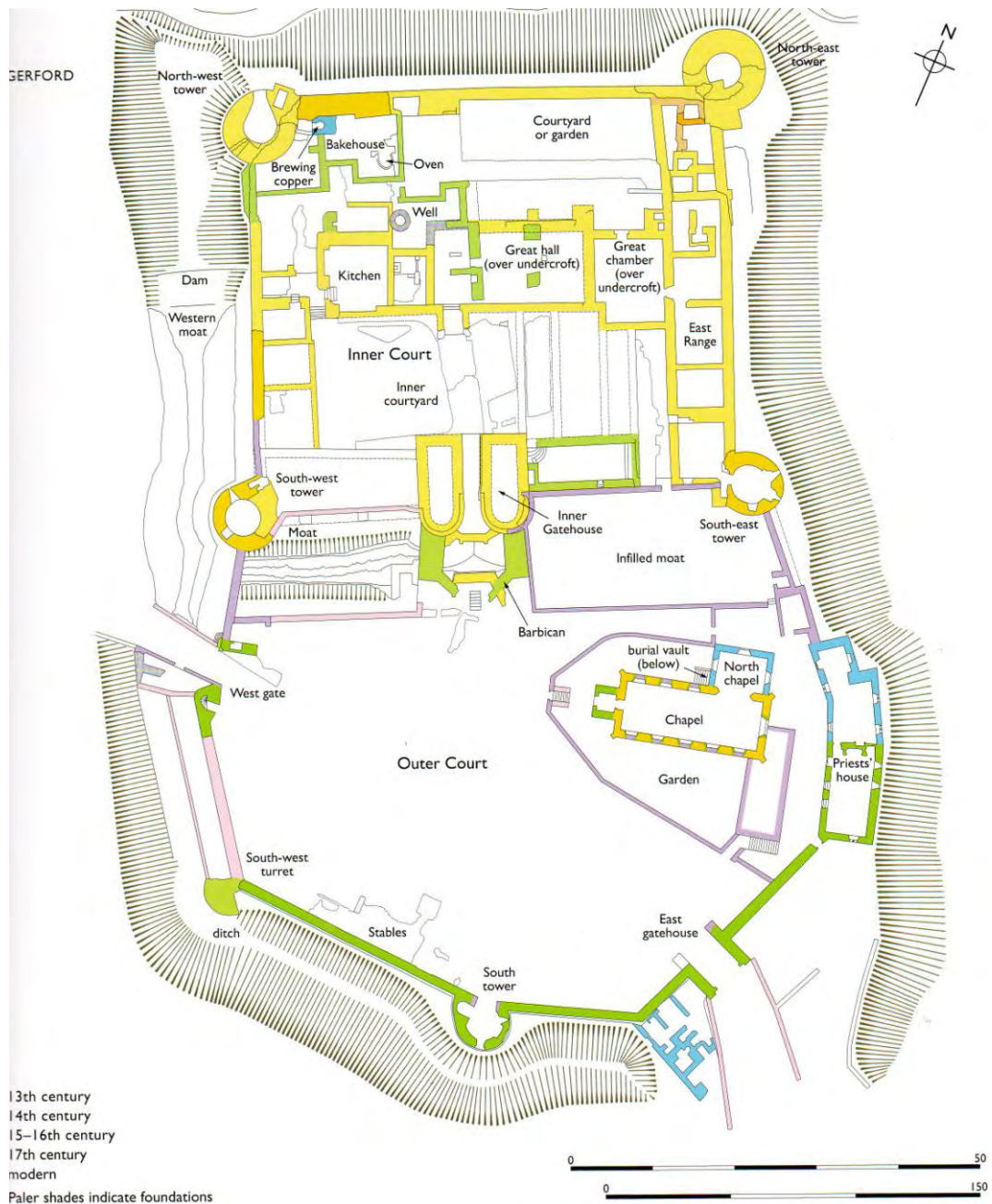
Figure 87. Farleigh Hungerford Castle: Site Plan.
Courtesy of English Heritage.

Farleigh Hungerford, Avon, in the Frome Valley, was originally constructed as a manor house which was held by the Montfort family. In 1369, it was bought by Sir Thomas Hungerford and, after he retired as the first Speaker of the House of Commons in 1377, he took it upon himself to develop the former manor house site into an enclosure castle. He had already started the development when he was

granted a licence to crenellate in 1383. His son Walter continued in his father's footsteps, both in politics where he, too, became Speaker and in the 1420s a baron, and in the construction at Farleigh Hungerford, where he added the Outer Court, in so doing enclosing the parish church within the new walls (Figure 87) and sequestering it for his personal use.[561] The money for the construction of the Outer Court was probably derived from the ransom of the duke of Orleans, whom Walter captured at Agincourt. The Hungerford family held the property until 1686, after which it went through a number of owners, some of whom used the materials from the site to construct nearby Farleigh House. Today the ruinous site is managed by English Heritage.

The Outer Court is accessed by both the East Gate and the West Gate, with two mural towers between them. The almost circular mural South Tower projects from the curtain wall close to the East Gate and has a spiral that was not accessible during the fieldwork. A further mural tower at the south-west angle is now very ruinous and no stairs were observed. Enclosed in the Outer Court are the remains of a stable, the Chapel of St. Leonard and the Priest's House, a large two-storey structure attached to the north-east wall. A comparison of the remains of both gatehouses indicates that the West Gate was probably the lesser of the two in size, but it has a spiral stair that would have given access to a room over the gate (Figure 88). The East Gate had a turning bridge and, although the ditch it crossed is now filled in, the holes for the lifting chains are still to be seen in the face of the two-storey gatehouse. However, there appears to be no spiral stair in the East Gate. The clockwise spiral stair in the West Gate is accessed from the Outer Court through a 100 cm wide doorway and along a 153 cm long, 112 cm wide passage, from where it rises with step of 76 cm, an outer tread of 33 cm, a riser of 18 cm and a newel of 15 cm that is in a ruinous state. In the Outer Court in the south corner of the Priest's House there is a slit and the curvature in the wall gives the impression that there was a spiral stair here leading from the ground floor to the first and top-most floor, which has been replaced by a modern spiral. If there was a spiral here it would be very unusual because, as a priest's house would not

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[561] English Heritage, Farleigh Hungerford, (London, 1998), p. 1. See also C. Kightly, Farleigh Hungerford Castle, (London, 2006) and R. Wilcox, 'Excavations at Farleigh Hungerford Castle, Somerset', Somerset Archaeology and Natural History, Vol. 124 (1980).

normally be deemed an elite space, we would not expect to find a spiral demarcating access to its upper floor. Moreover, the spiral rises for only one floor in a two-storey dwelling, which in itself is unusual.

Figure 88. Farleigh Hungerford West Gate.
Illustrating the spiral stair to the former accommodation above the West Gate.
Photographer: C. Ryder.

Access to the Inner Court and the original castle is through the Barbican and then across a turning bridge through the apsidal twin towers of the Inner Gate into the Courtyard, around which are ranged scant remains of the Hall with all the necessary supporting facilities, such as a kitchen and the possibility of a Solar next to the Hall. There are mural towers in the four angles of the wall that were originally some five storeys high. The South East Tower now stands to three storeys, with the remains of a clockwise spiral from the second floor to the roof. The steps are made from single blocks of masonry including the newel and are lit by window slits. There is a garderobe on the ground floor and it is possible that

the stair started near this, but because the remains are so scanty this is uncertain. The remains at Farleigh Hungerford are poor for those seeking spiral stairs, but given the height of the corner towers there are grounds to suggest that they did exist. Within the enclosure walls, the remaining structures appear not have had spiral stairs.

Farleigh Hungerford is of interest because it offers a mixture of buildings, some of which would require vertical movement within them and others horizontal. Clearly, at least one tower has a spiral stair to assist in vertical movement, whilst there are none evident in the structures where horizontal movement was required. Unfortunately, the paucity of remains above the first storey does not assist in furthering the research.

In summary, enclosure castles typically have a mixture of buildings of different heights, some three or more storeys and some fewer than three. In the buildings with few storeys, straight stairs are generally employed, whilst in the buildings with more than two storeys spiral stairs are commonly used.

Castles without Spirals

Beeston
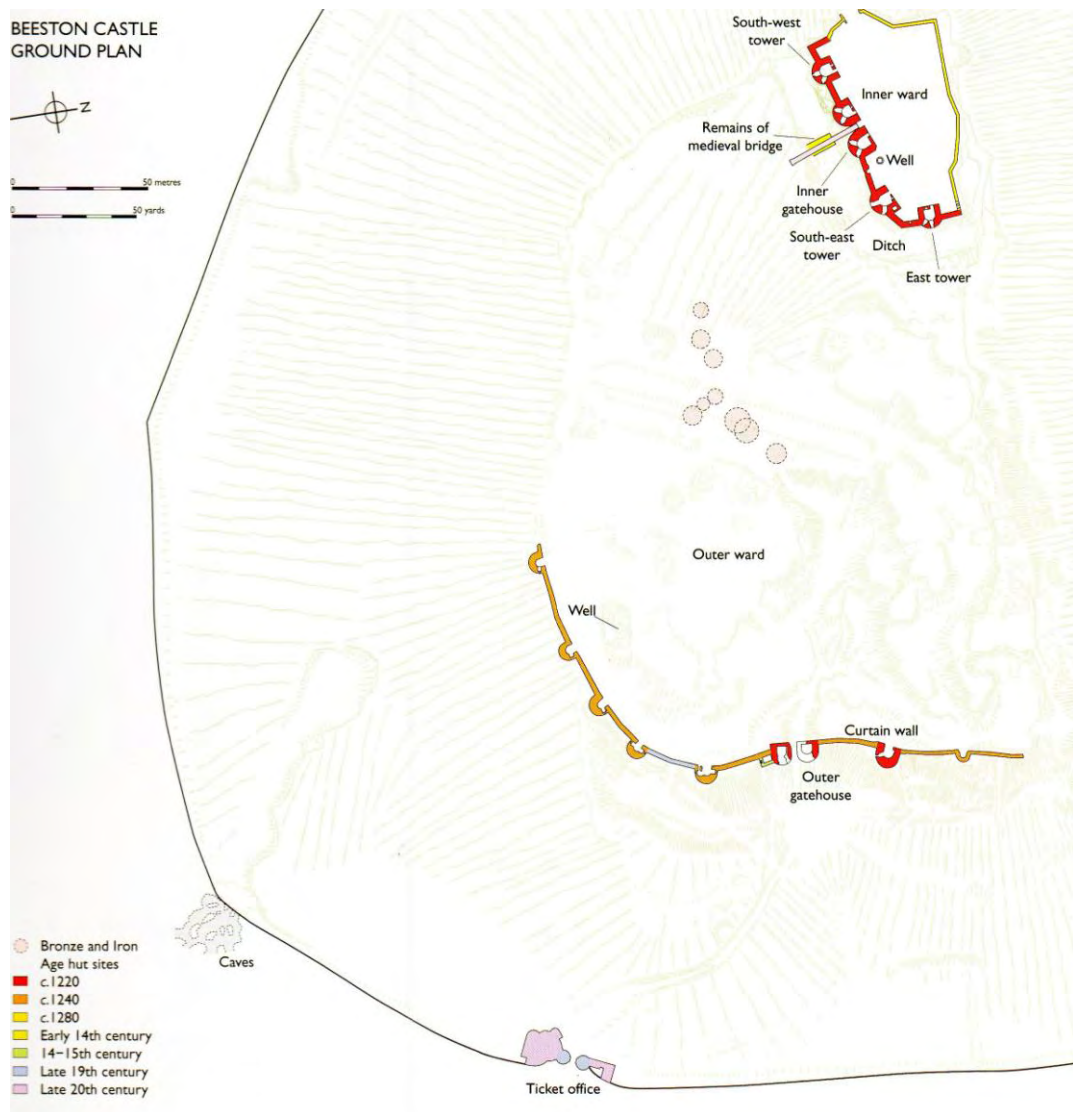
Figure 89. Beeston Castle: Site Plan.
Courtesy of English Heritage.

On his return from the crusades in the 1220s, Ranulf de Blondeville, sixth earl of Chester, commenced the construction of Beeston Castle (Figure 89) on a high sandstone outcrop that overlooks the Cheshire Plain and out towards Wales. This very prominent and conspicuous site has signs of occupation from over one thousand years before de Blondeveille started to build a castle. Keen and Ellis described Beeston Castle as an early example of the 'keep-less' castle with a true

gatehouse.[562] Work remained incomplete when Ranulf died and also when his successor, John, died without a male heir and by law the estate became crown property. The crown had no use for a residence in this place because it held a castle with residential accommodation at Chester, only 20 kilometres away. However, as Beeston lay in a sensitive area, on the borders of Wales and on the route to Ireland, the crown did choose to maintain the castle it acquired here. Thus the crown probably had no use for high status residential accommodation here, but because of its key position, the castle was maintained in good order until the fifteenth century, when it began to fall into disrepair.[563] It became the property of a local family and during the civil war it was besieged by the parliamentarians in 1645 and as usual an order to slight the castle was made but not fully complied with. Lord Tollemache purchased the castle in 1840 and constructed the current Entrance Building in 1846. Beeston castle is now under the management of English Heritage and it can be seen from afar today; it was even more visible during the medieval period when it was covered in a pale wash, like many other castles, but the views from the castle were extensive too.

The Outer Gatehouse has twin apsidal towers with an entrance passage between them and the remains of a portcullis slot. There is evidence that the twin apsidal towers had rooms with doors into the Outer Bailey and were lit by slits. There are insufficient remains to define either the original heights of these towers or their internal layout, but it is probable that they were two storeys high and equipped with chambers at first floor level. The Outer Walls run out from the Outer Gatehouse and are interspersed with apsidal, open-backed mural towers. Entrance to the Inner Bailey is across the Inner Ditch, some eleven metres wide and nine metres deep, cut by hand – 'a remarkable feat of engineering'[564] – that was originally spanned by a timber bridge with a central stone support and later by a turning bridge at the end of a ramp. The Inner Gatehouse – described by Ridgway and King as advanced for 1220, because its block of buildings and its

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[562] P. Ellis, Beeston Castle, Cheshire Excavations by Laurence Keen and Peter Hough, 1968-85, (London, 1993).
[563] J. Weaver, Beeston Castle, (London, 2nd edn, 1995), p. 7.
[564] C. Oman, The Castles of Great Britain, (London, 4th edn, 1970), p. 116.

superstructure were clearly habitable[565] – consists of twin apsidal towers with a gatehouse passage – fitted with a portcullis and a gate – between the two towers (Figure 90). There is a room at ground floor level in each tower that was accessed by a doorway in the Inner Bailey. The first floor consists of a single chamber across the whole width of the Inner Gatehouse, accessed by a doorway at first floor level on the Inner Bailey side of the structure, but there is no evidence of internal stairs or external masonry stairs, suggesting that a timber stair access was in place. The chamber has windows but no evidence of a fireplace. A search of the buildings within the Inner Bailey did not uncover evidence of spiral stairs at all.

No traces of spiral stairs were observed at Beeston Castle and it is probable that the original stairs were of wood, despite the huge amount of naturally-occurring sandstone inside the Inner Bailey. We must consider why this is so, as it may throw important light upon the role of spirals in medieval castles. To answer this, we must go back and explore why the castle was built here. Weaver contends that the castle was originally constructed here on this high, cold, windy vantage-point because Ranulf felt less secure once the king had new advisors, as well as to reflect his up-to-date knowledge of castle design and to provide 'a symbol of his power and importance'.[566] It is also possible that Ranulf constructed Beeston as a response to the developing power of Llywelyn ab Iowerth across the border in Wales, which he had tried to neutralise through the marriage of his daughter to Llywelyn and the signing of a treaty with him. However, if Llywelyn did not honour that treaty and attacked across the border taking the motte and bailey castles which defended the border south of Chester, the Cheshire Plain would be open to invasion and Ranulf's property would be under threat. It would therefore seem logical to have a defensive position at a high central point on the Cheshire Plain and Beeston, on its rocky outcrop, would seem ideal. However, this location also brought problems. Castles typically have towns close to them to support their everyday living requirements and Nash and Redwood maintain that a castle

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[565] M. H. Ridgway and D. J. C. King, 'Beeston Castle, Cheshire', <u>Journal of the Chester and North Wales Architectural Archaeological and Historical Society</u>, Vol. 45 (1958), pp. 14-15.
[566] Weaver, <u>Beeston Castle</u>, p. 4. See also R. Liddiard and R. McGuicken, <u>Beeston Castle</u>, (London, 2007), McGuicken, 'Castle in Context? Redefining the Significance of Beeston Castle, Cheshire', <u>Journal of the Chester Archaeological Society</u>, Vol. 81 (2006) and McGuicken, 'Castle in Context? An analysis of Heritage Interpretation and Presentation at Beeston Castle, Cheshire', <u>Ibid.</u>.

'depends on the surrounding catchment for its survival'.[567] The small medieval settlement at Beeston appears not to have been granted a charter and so had no regular market; moreover, the village is approximately 1 kilometre to the south-east of the castle, whilst Ranulf's castle at Chester lay only some 20 kilometres away. If one follows McNeil, then 'the main reason for choosing a site was apparently convenience' and this site is not convenient for access to the everyday needs of the castle.[568]

Figure 90. Beeston Castle Inner Gatehouse.
No spiral stairs are to be found in this structure.
Photographer: C. Ryder.

This castle is also unusual as it appears not to have been built with or later to have acquired high status domestic accommodation. Normally, during the early stages of castle building a high status chamber would be constructed for the lord or king to visit the construction site and yet this does not appear to have occurred at Beeston. Equally, the castle did not gain elite accommodation in its later history, even when it was being held and maintained by the crown. There is an argument that the castle site is close to the earl's and later the crown's castle at Chester and

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[567] Nash and Redwood, Looking beyond the castle walls, p. iii.
[568] McNeill, Castles, p. 33.

so would not require overnight accommodation, but in medieval terms a day's riding would have been approximately 30 kilometres for a round trip and the round trip between Chester and Beeston is in excess of that. Is the interpretation that this was not a castle but a hunting lodge? However, the size of the structure and its apparent military role do not support this argument. Alternatively, did Ranulf bring back with him ideas from the crusades of a military base without high status accommodation? That, too, seems unlikely in that the garrison at Beeston appears to have been quite small for a permanent military base on par with a crusader stronghold. Gravett describes Beeston as a 'fortified enceinte'.[569] The idea of Beeston as a fortified camp is supported by some evidence, for the Outer Bailey is very large and when Edward I was gathering his forces and workmen for his assault on Wales, he billeted many of them here, in the Outer Ward, apparently viewing Beeston as a good location to gather his strength for an assault into Wales.[570] Whichever interpretation is correct, the absence of elite accommodation at Beeston helps to explain the absence of spiral stairs. If the latter were generally employed in castles to give access to but also to signal and demarcate elite domestic space, there would have been no role for them at Beeston.

Stokesay

Stokesay Castle, Shropshire (Figure 91), is a fortified manor house built by Lawrence of Ludlow, a wool merchant. The castle is sited where the Onny Valley breaks the Wenlock Edge escarpment and is conspicuous on the main Ludlow to Shrewsbury road. Soon after 1066, William I gave Stokesay to Roger, earl of Shrewsbury, and it became a feudal holding of Ludlow Castle. In 1281 Lawrence of Ludlow bought this and other manors out of the vast wealth accumulated by his family's business, founded by his father. The purchase of a country property by a merchant was very unusual during this period. In 1291 Lawrence was granted a licence to crenellate by Edward I and it is probable that work commenced soon afterwards.[571] By the sixteenth century Stokesay had added 'Castle' to its name

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[569] C. Gravett, English Castles 1200-1300, (Oxford, 2009), p. 11.
[570] Weaver, Beeston Castle, p. 6.
[571] J. Munby, Stokesay Castle, (London, 1993), p. 17. See also J. Smith, 'Stokesay Castle', Archaeological Journal, Vol. 113 (1956), G. Chitty, 'The Tradition of Historical Consciousness:

and the current timber Gatehouse was added in the seventeenth century, probably replacing an earlier stone one. The remainder of the buildings date from the thirteenth century. In 1645 it was besieged and taken by the parliamentarians and was ordered to be slighted after the civil war but only the curtain wall seems to have been damaged. It was continuously occupied until the early eighteenth century and then fell into disrepair when used for farm buildings, until, in 1869, J. D. Allcroft purchased Stokesay and repairs were undertaken. In 1908 it was opened to the public by the Allcroft family, and further extensive repairs were undertaken in 1986-1989;[572] today it is under the guardianship of English Heritage.
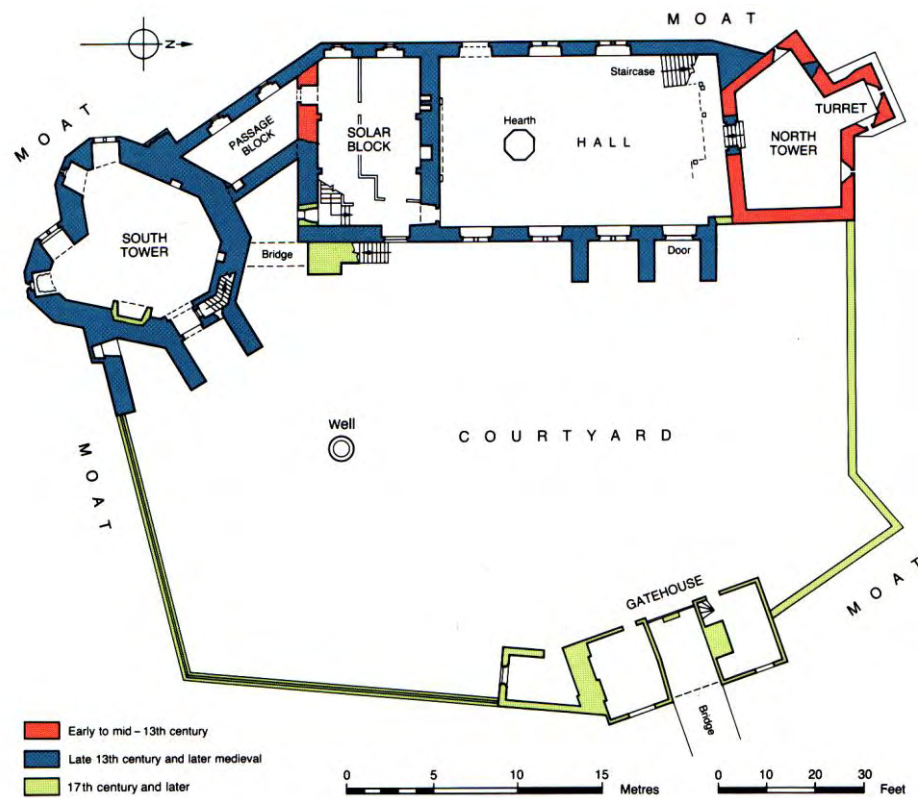
Figure 91. Stokesay Castle: Site Plan.
Courtesy of English Heritage.

The Case of Stokesay Castle' in G. Chitty and D. Baker (eds), <u>Managing Historic sites and Buildings: Reconciling Presentation and Preservation</u>, (London, 1999) and H. Summerson, '"Most Renowned of Merchants": The Life and Occupations of Laurence of Ludlow (d. 1294)', <u>Midland History</u>, Vol. 30 (2005).
[572] Described in R. J. Tolley, C. Babington and G. Chitty, <u>Stokesay Castle Shropshire The Repair of a major Monument</u>, (London, 1991).

According to Liddiard, the design of Stokesay reflects, albeit on a much reduced scale, that of Caernarfon and Denbigh.[573] Stokesay consists principally of a Hall with a Solar Block and two towers – one to the north and one to the south. The ground floor of the North Tower is entered from the Hall at ground floor level; the fact that the floor of the North Tower is lower than that of the Hall is often interpreted as suggesting that the North Tower was built earlier than the Hall. That the North Tower has arrow slits on its lower two floors also suggests an earlier construction date and that this tower was in place when Lawrence took possession of Stokesay. The first floor is accessed from the Hall up a straight wooden staircase. The second floor is accessed from inside the North Tower by a further straight wooden staircase.

The Hall and Solar Block arrangement is typical of this period – although a little dated when compared to the Halls in Edward's castles – although the central hearth – necessitating the dissipation of smoke through the roof – was rather dated when it is considered how many contemporary castles had numerous fireplaces.[574] There was probably a dais at the south end of the double-height Hall near to the fire and the Solar Block. The three-storey Solar Block is entered through a door at ground floor level and would have been the private apartments of the Ludlow family. There is a cellar that it has been suggested was part of a structure on the site when Lawrence purchased it.[575] The first floor of the Solar Block is accessed from a straight external stair that would originally have been covered. The first floor of the solar was of double height with large windows with window seats and a fireplace with small windows looking down into the Hall. This somewhat dated arrangement may well have been intended to give the image of a family that had been longer in residence than was the case and perhaps was designed to support Lawrence's social aspirations.

The South Tower (Figure 92) gives the image of a keep and, through this, associations of lordship. It is accessed from the Courtyard through a doorway into

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[573] Liddiard, Castles in Context, p. 45.
[574] It is the introduction of chimney flues set in the wall that permitted the construction of high towers with heating at all levels as required because before this any hall or chamber with a fire needed to have a roof out of which the smoke could be dissipated.
[575] Munby, Stokesay Castle, p. 27.

a short passage leading to the ground floor room equipped with large windows with window seats but originally there was probably no fireplace. Off the passage to the right is a doorway leading to an intramural stair – lit by small pointed windows – that follows the shape of the South Tower's outer wall and rises to the roof. The first floor can also be accessed over what was a turning bridge from the Solar Block's external staircase. The chamber here is well lit and has a fireplace. At second floor level there is a garderobe and a well-lit chamber with a fireplace. There is a blocked-up doorway in the north wall that leads to nowhere. At roof level there are stairs to a turret.

Figure 92. Stokesay Castle Courtyard.
View of the Hall and South Tower illustrating the first floor entrance.
Photographer: C. Ryder.

From the history of the Ludlow family and a study of the architecture of Stokesay, it would appear that Lawrence was seeking to present an image of his family being part of the establishment and the South Tower represents a keep and has crenellations – granted by the king – that are associated with lordship. However, there are no spiral stairs or traces of any at Stokesay. This needs interpretation and attention ought to be given to the origins of the family members who built

Stokesay: they were not lords but merchants and to have a sign of lordship such as spiral stairs would be a step too far, perhaps. However, this interpretation can be questioned, as the family seem to have had no qualms imitating other older lordly features in their castle, so we need to seek an alternative explanation for the absence of spirals. One suggestion could be that while the family adopted the principal forms and structures of a castle, even though some were a little anachronistic by the time Stokesay was built, they opted for more spacious and domestic internal arrangements, including the use of straight wooden or occasionally stone stairways rather than stone spirals.

Conclusions

Overall, this chapter has explored eighteen castles, and where appropriate associated defended towns, in England and Wales and has focussed on three aspects of the spiral stair. Firstly, through these examples it has assessed where spirals are found and where they are not found, both in the castle as a whole and within different elements of the castle buildings. Secondly, it has assessed the position of the spiral and the spaces which it links, offering interpretations of those spaces, in part based upon the presence of the spiral stair, and thus of the wider role played by the spiral stair. Thirdly, it has presented evidence about the dimensions and orientation of the spiral stairs in these castles wherever the present condition of those spirals and issues of access permitted measurements and other detailed observations to be made. These eighteen castles, all of them in England and Wales, have been selected as representative of the broad development of medieval castles in these countries, taken from a database of measurements and observations from over 90 castles in Britain and Europe. Broader analysis and conclusions, drawing upon the full castles database but also putting castles within a wider context of medieval buildings and architectural developments, will be presented in the next chapter. However, the case studies presented in this chapter do permit a number of conclusions to be drawn which will point the way forward.

Firstly, spiral stairs found in castles in England and Wales were generally built by the Anglo-Normans or the English; they are very rarely found in castles built by

the native Welsh, who do not seem to have adopted this element of castle architecture. It has been suggested here that, although the native Welsh certainly acquired the technique of castle building and constructed and built stone castles of their own, their separate culture and cultural heritage, together with their distinctive social structure and grouping, perhaps meant that the spiral stair was less appropriate to their use of castles and so, with just one exception, they did not employ spirals in their castles.

Secondly, in English-built castles spiral stairs generally lead and give access to elite spaces, especially in towers of three or more storeys. It has been suggested here that in this context the spiral stair played a key role in demarcating space and in signifying a movement from public or communal to more private space and from an area with wider access to an area with more limited access. This is apparent in many of the great towers or keep-style castles of the eleventh and twelfth centuries, but it is also often found in later thirteenth- and fourteenth-century enclosure castles. In these castles, individual mural towers and occasionally the gatehouse towers replicated the role of the earlier great tower, with each tower providing a suite of accommodation for an elite resident and his family and household, thus containing a range of more public and more private spaces often linked by a spiral stair.

Thirdly, many spirals also lead up to the wall walk and give access to that elevated area of the castle and of its tower or towers. This, in turn, may therefore imply that, in times of peace when the wall walks would not be serving a military or defensive role, the wall walk was also seen as a restricted and elite space, access to which was demarcated and controlled by the employment of a spiral.

Fourthly, the absence of a spiral in an English-built castle may imply that there was something different or unusual about that building. For example, it may suggest that all the elite space was on a single level and may, perhaps, have comprised no more than public or social space, without private elite accommodation, which could all be accessed horizontally from the main entrance and on that single level; thus in these cases there would be little or no need for the elite to move around the castle vertically. This might, in turn, throw doubt upon the role of such buildings

as a true castle, if we accept the definition of a castle as defended residence of a lord; if the castle contained elite social space but no bedrooms or other private elite chambers, whether accessed by a spiral or not, the castle may have been used by the elite owner and his guests for a number of high status purposes but may not have been fully residential.

Fifthly, not only are Welsh-built castles different but also some English-built castles do not conform to these general themes. For example, we have seen that both the White Tower (discussed in the previous chapter) and Castle Rising contain full-height spiral stairs, but in these great towers they do not primarily seem to be playing a role in linking and demarcating elite space on two or more levels of the tower; instead, the full-height spirals here (though not some of the other shorter spirals) may have played a more mundane service role, purely giving access, with no implications about status or restricted movement. At Conisbrough (also discussed in the previous chapter), exceptionally, we do see elite accommodation, including elite private space, arranged over two floors of a four-storey tower, but here there are no spirals and instead all the levels are accessed via straight stairs running in the thickness of the outer wall. This clearly runs against the general theory about the role of spirals outlined above, but it has been suggested here that the stairs at Conisbrough played a special role, namely as an element within a building which had, in part at least, an unusually prominent ceremonial focus.

CHAPTER 5 – SPIRAL STAIRS IN THEORY AND IN PRACTICE

Earlier chapters in this thesis have explored the origins of the spiral stair, including its first use in a castle, and have examined spirals in a range of English and Welsh castles, looking in detail at twenty specific case studies (eighteen in Chapter 4, plus a further two in Chapter 3 in relation to the new diagrammatic approach developed in this study). In the process, but particularly in the analysis within and the conclusions to Chapter 4, it has been suggested that the spiral stair within the medieval castle generally (but not always) played a specific and specialised role in giving access to elite space and in demarcating the move from less private to more private space.

In this final main chapter, before the concluding chapter, the suggested interpretation drawn from selected case studies will be tested and extended within much broader contexts. This will be approached in three ways. Firstly, the coverage of medieval castles will be extended in terms both of numbers and of geographical area, to see whether the interpretations offered in the previous chapter hold true in a wider context. Secondly, a range of other medieval buildings and building types will be explored, focussing on the presence or absence of spiral stairs and, where they are employed, assessing whether their position, function and role are similar to those within the castle, offer variations to them or, in fact, run counter to the theories already developed for castles. These two issues will be assessed in detail and will provide the core and bulk of this chapter. Thirdly, and more briefly, the chapter will close by summarising the fieldwork and by looking at the physical structure of spirals down to the end of the medieval period, both within castles and in other buildings, exploring issues such as construction, shape, dimensions and orientation.

Castles in Britain, Europe and Beyond

This chapter begins by exploring more broadly the presence, position and role of spirals within castles, initially drawing heavily upon the extensive fieldwork

undertaken at around 90 English and Welsh castles. Native Welsh castles can be dealt with quite swiftly. The Welsh did build castles eventually, but it is only in the thirteenth century that they raised significant stone castles. We have already noted that native Welsh stone castle are not very numerous and had a fairly short lifespan under Welsh control, that neither Criccieth nor Ewloe contain spiral stairs and that the two spirals found at Dolbadarn seem to be an exception; arguments about the cultural and social aspects of the native Welsh, distinctive from the Normans and the English, have already been presented to interpret and explain why the native Welsh did not use spirals. Further fieldwork, supplemented by desk-based research, has confirmed these findings. For example, fieldwork at Deganwy and Dolwyddelan suggested that no spirals were present and, despite the ruinous condition of both castles, careful observation in the field supported by Cadw plans confirmed this.[576] A further Welsh castle, Dolforwyn, Powys, is described by Butler as having been constructed by Llywelyn ab Gruffydd between 1273 and 1277; the English captured it in spring 1277 and it was repaired and improved under the supervision of Engineer Master Bertram, so that by the time of a survey by Walter de la Breche in 1322-1323 it contained at least fifteen rooms. However, the castle was abandoned by the English in the fourteenth century and by 1398 it was ruinous. Butler's recent work at the site, springing from extensive excavations, has confirmed that the castle never possessed any spiral stairs, whether as part of the original native Welsh structure or in its later fairly brief reuse and extension by the English.[577] Desk-based research on some other stone-built native Welsh castles, such as Dinefwr and Dryslwyn, Carmarthenshire, confirm the absence of spiral stairs. All the evidence suggests that with perhaps a single exception already noted, the Welsh did not employ spiral stairs in their castles.

Through a generous selection of Edward I's castles in North Wales, in many ways the apogee of the English enclosure castle, examined in the previous chapter we have already seen that these English-built castles in Wales make extensive of spiral stairs and that the position and role of these spirals conform to the theories about

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[576] Avent, Dolwyddelan Castle, Dolbadarn Castle, Castell y Bere.

[577] L. Butler, 'Dolforwyn castle and the Welsh Castles of North Wales', Fortress, Vol. 8 (1991). See also L. Butler and J. K. Knight, Dolforwyn Castle, Montgomery Castle, (Cardiff, 2004).

spirals in castles already presented. But what about other, often earlier, English or Anglo-Norman castles within Wales? Fieldwork was conducted at around a dozen English castles in Wales, over and above the Edwardian castles of North Wales, though spirals were not found at all these sites, either because none ever existed or because of the fragmentary nature of the surviving remains. Perhaps the earliest castle at which spirals were observed is Chepstow, the heart of which, the Great Tower, was begun in 1067, though the castle was repeatedly extended and modified through to the thirteenth century and beyond. Of the seven spirals observed and measured at Chepstow, the majority certainly belong to the later, thirteenth-century parts of the castle, and even the spiral in the south-east corner of the Norman Great Tower belongs to the thirteenth-century modification of this building, when it was heightened; the Norman Great Hall was accessed by a straight stair in the thickness of the wall, but a spiral was added at the upper level when the structure was significantly heightened in the first half of the thirteenth century. It is noticeable that, while the outer wall of the Great Tower was sufficiently thick to enable a straight stair to continue upwards, the thirteenth-century architects chose to incorporate a spiral stair when they heightened the building, accessing a new floor inserted above the hall and the newly raised wall walk. An analysis of the data collected concerning all seven spirals at Chepstow reveals that they all ascend in a clockwise direction and that most but not all begin at ground floor level. Many give access to the upper levels of mural towers, including those in Marten's Tower, the South-West Tower and one of the towers of the twin-towered Main Gatehouse.[578]

The thirteenth-century enclosure castle at Caerphilly, with its elaborate waterworks, offers a profusion of spiral stairs. A combination of fieldwork and use of published plans suggests that there are at least a dozen spirals at this castle, mostly found in the towers: the two towers of the East Inner Gatehouse, the two towers of the West Inner Gatehouse, the two towers of the West Outer Gatehouse, the four main corner towers of the Inner Ward and the South Tower all contain spirals, and a further spiral is fitted within the thickness of the main curtain wall rising by the west wall of the Great Hall. However, several of these spirals or their

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[578] R. Turner, Chepstow Castle, (Cardiff, 2002); R. Turner and A. Johnson (eds), Chepstow Castle: its history and buildings, (Logaston, 2006).

ruins are currently inaccessible and it was only possible to make close observation and to take measurements of three of these spirals. The common aspect of the spirals measured is that they are all to be found at the end of a passage with a door from the Inner Ward and these and the other spirals at Caerphilly which survive in reasonable condition appear to run from ground floor level up the full height of the castle, accessing the wall walk.[579]

In the first half of the thirteenth century one of the great families of south-east Wales refortified in stone a trio of castles which defended the Monnow Valley. Probably designed to be held together and to support each other, and thus often known simply as the Three Castles – Skenfrith, Grosmont and White Castle – all in Monmouthshire, were all developed as enclosure-type castles, defended by a dry ditch or a wet moat. There are variations between them: White Castle was the biggest and most heavily defended castle; Grosmont was the smallest and one side of the Inner Ward was given over to a large rectangular hall block; and Skenfrith appears to lack a strong outer gatehouse but instead has a freestanding circular tower within the ward, almost an echo of a much earlier round keep. Although these castles are roughly contemporary with Caerphilly, they offer nothing like Caerphilly's profusion of spiral stairs and instead spirals are used quite sparingly. At Grosmont a spiral was added when the castle was extended in the fourteenth century, but the only original spiral is at the east corner of the two-storey rectangular Hall Block giving access from the Main Hall, which was entered from an external wooden stair and a diametrically opposed doorway, down to the basement level and up to the wall walk and the roof of the corner turret. The Solar, formed by a wooden partition across the Hall Block, was at the end furthest from the corner spiral stair and appears to have been self-contained at that level; thus no stairs of any sort linked the Solar with the basement below or the wall walk above. At Skenfrith there is again just a single spiral, this time in the freestanding, three-storey circular keep. This spiral rises clockwise from the first floor, accessed at an angle from but not opposite to the main entrance to the tower, which was accessed by an external wooden stairway, and it rises to give access to the elite accommodation on the top floor of the tower and on up to the wall walk. Very

[579] D. Renn, Caerphilly Castle, (Cardiff, 1989).

distinctively, the spiral is contained in a small semi-circular projection which rises the full height of the Keep and which draws attention to the presence of the spiral, perhaps in turn deliberately highlighting the elite status of the accommodation (Figure 93). At White Castle there were two spiral stairs, this time found in both towers of the twin-towered Inner Gatehouse. These spirals gave access to the wall walk but not directly to all the spaces in the towers. However, they did provide access to the top floor, where there are window seats, often the sign of an elite space: at White Castle certainly not the private rooms of the owner, as he had a hall and solar within the ward, but perhaps the rooms used by the constable.[580]

Figure 93. Skenfrith Castle Keep.
View of the round Keep from the Hall Range with the protruding stair turret on the right side of the Keep.
Photographer: T. Park.

Although English-built castles in Wales do not follow a set pattern and thus the number and placing of spiral stairs vary, at these sites and at other castles where fieldwork has been undertaken, including Abergavenny, Monmouthshire, Carew and Cilgerran, Pembrokeshire and Tretower, they do play the type of role which we would expect and which has already been discerned in more detailed evaluation of the Edwardian castles of North Wales. Used sparingly or in profusion, rising

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[580] J. K. Knight, The Three Castles, (Cardiff, 2000).

the full height of the structure or occasionally linking only some of the storeys within a building, the spiral stair links to and acts as a marker for elite space.

Turning to castles in England, the ten English case studies explored in Chapters 3 and 4 have already given a clear and very similar picture of the role and position of spiral stairs. Fieldwork at a further 40 or so castles in England revealed some minor variations from castle to castle but again tended to confirm the main trends and interpretation. For example, Norwich offers an instance of where an originally planned spiral was adapted for another use. A fireplace survives in what appears to have been a circular shaft intended for a third spiral stair. The guidebook describes how 'The circular shaft for the stair became the chimney flue and you can see three slits in the back which helped the smoke to escape'.[581] Without a contemporary written explanation of why the design of the castle was changed, one must rely upon educated guesses, but what appears clear is that at the time a fireplace was more important than a spiral in that part of the castle. If one places this castle into its context, it becomes apparent that it was not a true castle in the sense of being a defended home of a lord, for the Keep at Norwich, like those at Hedingham and the White Tower, was more a social and administrative base and offered limited elite accommodation. Its two other spirals provided adequate access for this type of building and so perhaps a third spiral was deemed unnecessary.

Another great tower that we might expect to have had spiral stairs is the Keep at Richmond (Figure 94). The Keep is a twelfth-century conversion of an earlier gatehouse formed by closing the outer gateway with stone – a new gate was built immediately to the east. The work was probably completed by Henry II. Although a rather narrow spiral stair leads from the basement to the first floor, this is not original and was added much later. The entrance to the Keep is at first floor level at the top of a straight external stair to a door in its south-east corner. From the entrance, the internal stairs are straight and intramural, rising through two floors and then up to the wall walk. The explanation for this probably lies in the origins of the Keep for it was originally a gatehouse, in this case probably containing no elite accommodation, and so the differing levels of the gatehouse were accessed by

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[581] Anon, A Guide to Norwich Castle Museum, (Norwich, 1981), p. 29.

straight stairs and not by spirals. When the building was converted to a keep, complete with elite and private spaces, perhaps thereby enhancing the ceremonial potential of the castle, the architects may deliberately have retained the existing straight stairs to support this role or alternatively it may simply have been too difficult to insert new spirals within the structure. Hence Richmond has a keep without spirals.[582]

Figure 94. Richmond Castle Keep.
Illustrating first-floor entrance to the right.
Photographer: C. Ryder.

Fieldwork revealed that some castles are particularly rich in spirals. At Ludlow seven spirals were observed and measured, most of them clockwise and several starting at ground floor level and accessed by an outer door and short passage. However, the long and complex history of Ludlow and its repeated adaptation together mean that the layout and positioning of the spiral stairs are now rather variable: some do not start at ground floor level and some do not rise to access the wall walk.[583] At Middleham, another castle with a long and complex history that saw repeated rebuilding, six spirals were observed and measured. Mostly rising from the ground floor, though their ruinous nature often means that we cannot be certain that they originally rose to wall walk level, they are a mixture of clockwise

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[582] J. Weaver, Richmond Castle and Easby Abbey, (London, 1989).
[583] Shoesmith and Johnson , Ludlow Castle: its History and Buildings.

and anticlockwise.[584] At Dunstanburgh, Northumberland, within the main castle there is a distinct unit interpreted as the accommodation for the constable, furnished with a small gated courtyard surrounded by the usual offices for elite living, and rising from this courtyard is a clockwise spiral stair to the second floor of a structure that would have contained the main living space for the constable. This space allocation would be necessary for the constable to undertake his duties when the main part of the castle was not in use.[585] Even if we look at much smaller and humbler castles, we find spirals playing much the same role. Thus at thirteenth-century Edlingham Castle, Northumberland, a spiral led from the ground floor to the upper floor of the Hall House which contained the elite accommodation; in the fourteenth century a solar tower was added, complete with a second spiral rising from the ground floor through the whole height of this structure.[586] Many more examples of large and small English castles could be given, based upon both fieldwork and desk-based research, but the overall patterns have been well established and are clear. Despite variations and despite a few castles either not conforming to the general trends or at least appearing on first sight not to conform, spiral stairs in English castles generally lead to private elite space and play a key role in signifying and demarcating that transition.

Turning to the continent, the earliest stone keeps in France have already been discussed in Chapter 2, in relation to the search for the origins of the spiral within the castle. In particular, probably the earliest keep containing a spiral, that at Loches (Fig 95), has been analysed in detail. Limited fieldwork, both in France and further afield in Switzerland, sheds further light on spirals within castles. In particular, it has been noted that Swiss castles generally did not originally have spiral stairs, King describing them as 'corporate castles'.[587] For example, Château Chillon, Switzerland, at the eastern end of Lake Geneva is positioned to cover the narrow gap between the lake and the mountains at the point where the road between Italy and France and the River Rhone are very close together. Today, spiral stairs are to be found in Château Chillon, but discussions with the curators revealed that these spiral stairs were not added until the fifteenth century. What is

[584] J. Weaver, Middleham Castle, (London, 1993).
[585] H. R. T. Summerson, Dunstanburgh Castle, (London, 1993).
[586] F. Graham, The Castles of Northumberland, (Newcastle, 1976), pp. 142-145.
[587] King, Castles of England and Wales, p. 1.

of interest here is that Château Chillon is strongly associated with Master James of St. George, who once lived in the walled town of Morges, not far from Chillon. Master James is strongly associated with Edward's castles in Wales and it is probable that Edward met him when returning from the crusades in 1272. This original absence of spiral stairs in Chillon is notable, given the extensive use of spiral stairs in Edward's castles in Wales and begs the question why there are spiral stairs in Edward's castles but not at Chillon. Considering this and the culture behind it, it would appear that the difference lies in the purpose of Edward's castles and Château Chillon. Château Chillon was probably built to protect the route along the Rhone and to collect taxes on goods being transported. So this castle, like many others in Switzerland, was not the defended residence of a lord but a civic structure and thus Château Chillon was probably more of a heavily-defended customs post and fortress to defend the land and water passages down the Rhone Valley. Accordingly, even though the architect knew perfectly well how to construct spiral stairs and later built them with aplomb in North Wales, as his Swiss castle contained no elite domestic quarters there was no need for any spirals here.

Figure 95. The Chateau at Loches.
Photographer: C. Ryder.

Castles in medieval Germany developed upon the same broad lines as those already examined in England and France. Like those castles, the German castle served a range of functions, providing a fortified seat and residence of a lord, serving as an administrative centre and acting as a status symbol. By the central Middle Ages, many German castles had adopted the enclosure style, with a strong curtain wall and one or more gatehouses, encircling and defending a range of buildings which typically included a two-storey elite block, sometimes termed a *palas*. However, one additional and very distinctive feature of these German castles, found in large numbers and considered by some historians to be an essential element of a German castle, was the *Bergfried*. Sometimes freestanding, though sometimes attached to other buildings, they were tall and lofty stone towers, either square or round in shape, generally eighteen to 30 metres high. Unlike the main castle buildings, which often did contain spirals, these towers have no spirals. Vertical movement within the *Bergfried* was by wooden steps or ladders. The explanation for the absence of spirals in these towers, in contrast to their use giving access to elite and domestic spaces within the other castle buildings, is that the *Bergfried* was not intended or suitable for every-day habitation, and accordingly it did not have elite residential features expected at the time, such as fireplaces and large or numerous windows. Thompson concludes that the *Bergfried* was defensive, in that it could provide temporary shelter at times of attack, but that it also played a key 'symbolic' role and, as it was 'not serviceable for accommodation', it was intended as 'a supernumerary symbol'.[588]

In northern Europe towards the end of the twelfth century, a new order of spiritual knights emerged from the Hanseatic League that traded with the Holy Land. The merchants of the cities of Bremen and Lubeck gave financial support to what became known as the Teutonic Knights – Servants of St. Mary of the German House. The organisation was founded in 1190, became recognised as a 'spiritual corporation' in 1196 and in 1199 Pope Innocent insisted that it become a knightly order.[589] At this time the Prussians were pagans, and castles were constructed by the Teutonic Knights along the border between the Hanseatic League and Prussia.

[588] Thompson, Rise of the Castle, pp. 22-25.
[589] Turnbull, Crusader Castles of the Teutonic Knights (1) the red-brick castles of Prussia 1230-1466, (Oxford, 2003), p. 5.

Initially, the Teutonic Knights constructed wooden castles for speed and cheapness but because of the shortage of good building stone in the area these wooden castles were progressively converted to brick-built castles – by 1250 'no more than five castles were converted to stone' – and these brick castles, amongst the earliest in Europe to be built of this material, appear to have been constructed to a common plan.[590] This plan consists of a tower in a corner of a quadrangle, containing a chapel, a refectory, a dormitory, the commander's chamber and a storage cellar. Some of the castles take this design further and had a latrine tower – *dansk* – linked by a bridge to the main complex. The exterior walls of the castles were largely plain but there were large windows facing into the quadrangle. Access to more diagrams, plans and photographs would have been useful but the resources available show that there are spirals at some of these castles. For example, Reden Castle (Radzyn Chelminski, Poland) has spirals in a corner tower and in the corner of the cloister, and Lochstädt Castle, Russia, to the west of Kaliningrad, has a spiral in the corner of the cloister that leads up to the Amber Chamber constructed *circa* 1305.[591] Certainly, here at the Amber Room there is a case for a spiral stair denoting restricted access, for the amber that was stored in this room was a very valuable commodity during this period. So although spirals in some Teutonic castles do conform to the general pattern by giving access to private spaces, their use in this way is not as strong as in other areas and there is at least one example of a spiral being employed to demarcate limited access to a precious resource and a safe room rather than to personal space.

Further north in the Baltic region, Lithuanians were alternating between Christianity and paganism as they sought the best deals for their country and, when in 1199 Albert of Buxhorden became Bishop of Riga, he started 'continuous crusades' against them. To do this he started his own knightly order – The Brothers of the Militia of Christ or Swordbrothers – in 1204. The castles constructed by the Brothers were similar to those of the Teutonic Knight, but again

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[590] Ibid., p. 17.
[591] Ibid., p. 25.

a dearth of source material, whether photographs, plans or drawings, means that little is known about the presence and role of spiral stairs in these Baltic castles.[592]

Turning to southern and Mediterranean Europe, by the mid-eleventh century there were Normans in the Mediterranean area in southern Italy and Sicily, where they took charge of Byzantine, Lombard and Arab structures and developed them, as well constructing their own buildings. The export of the keep to Sicily came about in 1061, when the Normans invaded the island, and by 1091 they had captured the whole of it; in fact, they had had a presence in Sicily and southern Italy since 1017 as mercenaries for the Pope, until that relationship ended in 1053 when the Normans defeated the Pope's army. The Normans also founded Apulia and Calabria as their bases on mainland Italy.[593] Gravett states that the earliest Norman stronghold is Aversa, north of Naples, where Segius IV gave the town to Ranulph Drengot from near Rouen; after Ranulph's death in 1045 Aversa was expanded by his nephew, Asclettin, to become the Norman principality of Capua, whilst prior to 1050 Robert Guiscard was building in Calabria. It is of interest to note that Ranulph gained a large income from payment for protecting pilgrims and soon gathered a large force around him of travelling knights from Western Europe and locals, too, making him a significant player in that part of world and providing funds to construct impressive structures. The styles of castles constructed here differ conspicuously, for in the mountains the constructions were often single towers, whilst on the more fertile lowlands castles more typical of north-west Europe were constructed, often with rectangular donjons and later round ones.[594]

After the invasion of Sicily in 1061, Roger and Robert Guiscard constructed castles there similar to those in France. At Caltabelotta, to the south of Palermo, there is a solitary Norman tower in which 'the stair vice is set in the centre of one wall rather than at the corner' and there is a first floor entrance with two rooms and a chapel.[595] Later 'palace towers' were constructed, such as La Ziza, Palermo, that was begun in 1162 by William I (The Bad) of Sicily (1154-1166) and completed

[592] Turnbull, Crusader Castles of the Teutonic Knights (2) The stone castles of Latvia and Estonia 1185-1560, (Oxford, 2004)
[593] Gravett, Norman Stone Castles (2) Europe 950-1204, p. 6.
[594] Ibid., p.18.
[595] Ibid., p. 20.

by William II (The Good) of Sicily (1166-1189). Sicily experienced the usual approach by Normans when they settled in a country, adapting the culture to their own needs, and thus in Sicily a landed Moslem aristocracy remained in place alongside the Normans until the thirteenth century. The south Italian castles have a particular style, with tapered walls, corbels to support the floor beams, a cistern in the basement and a stone-vaulted ground floor ceiling, but little Norman work remains today because of post-Norman warfare, conquest and rebuilding. Access to more plans, drawings and photographs would have assisted the research, but it appears that the spiral stair is rare in southern Italian and Sicilian Norman castles.

By the time of the First Crusade, most European castles had spiral stairs employed in the locations and for the purposes already outlined, and since the crusader castles were designed and constructed by European crusaders, it would seem reasonable to expect that these castles would follow similar designs or at least have many features common to European castles. Thus, given the wide distribution of spiral stairs in European castles, it is reasonable to expect that spiral stairs would be used as part of the design of crusader castles. However, despite the utilisation in crusader castles of many other features of European castles – the use of crenellations, mural towers and great halls as a few examples – spiral stairs were not as frequently incorporated in the crusader castles (Figure 96).

It is certainly true that crusader castles drew on a range of different geographical, cultural and architectural origins. Many crusaders originated from rural France and a characteristic of this region was small rural fortifications that were considerably less sophisticated than other parts of Europe, such as Normandy, which Nicolle describes as 'in some respects ahead of the rest of France in matters of fortification',[596] and England. Thompson adds that the rectangular keep was 'scarcely known on the continent outside of Normandy' and England.[597] The crusaders from Germany and the Holy Roman Empire brought with them 'slightly different traditions and new styles of fortification' that they had developed in the tenth and eleventh centuries and the Italian castle was 'often technologically more

[596] D. Nicolle, Crusader Castles in the Holy Land 1097-1192, (Oxford, 2004), p. 5.
[597] M. W. Thompson, 'Keep or country house? Thin-walled Norman 'proto-keeps'', Fortress, Vol. 12 (1992), p. 22.

sophisticated than that seen north of the Alps'; Nicolle explores whether this was because of their closeness to the Byzantine and Islamic World.[598] The crusaders would visit the 'early Islamic fortifications' that had a high degree of domestic comfort combined with defence, a design in use since the Umayyad caliphs in the seventh and eighth centuries.[599] This contact influenced some crusader castles: for example, east of Jaffa, Majdal Yaba (or Mirabel), held by the Ibelin brothers, had a keep in 1122 and during the twelfth century expanded to develop a courtyard with building around the sides reflecting the Islamic design.[600] Antioch was special in that there were few western Europeans settled there: the settlers were mainly of Armenian, Greek and Syrian origin.
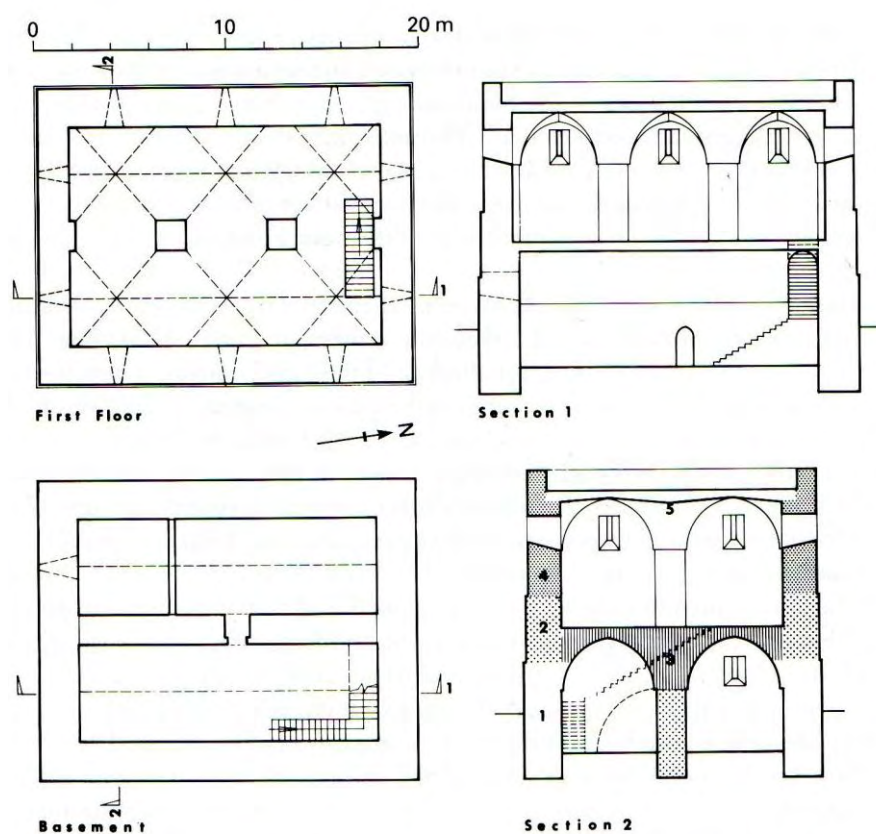
Figure 96. Red Tower: Drawing.
Illustrating straight internal stairs.[601]

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[598] Nicolle, Crusader Castles in the Holy Land, p. 5.
[599] D. Pringle, 'Crusader Castles: The First generation', Fortress, Vol. 1 (1989), p. 17.
[600] Ibid., p. 19.
[601] H. Kennedy, Crusader Castles, (Cambridge, 1994, reprinted 2001), p. 34. Kennedy promotes the Red Tower - *al-Burj al-Ahmar* – Plain of Sharon Israel, as a typical small crusader donjon of the early twelfth century.

With regard to this melange of crusaders and settlers, Nicolle writes 'The first crusaders…. came to the Middle East with their own established ideas about military architecture'[602] and later adds '…today it is widely accepted that the military architecture of the crusader states reflected a broad array of influences, in addition to the inventiveness of those who actually designed it'.[603] It was this inventiveness that created, in the Holy Land before Western Europe, concentric castles with protruding mural towers where there was greater reliance upon the curtain wall for defence rather than the keep that, according to Nicolle, became a centre of defence rather than the place for a last stand.[604] However, this architectural richness and inventiveness does not appear to have extended to stairs. With regard to stairs, Nicolle describes how wood was employed or at most stone stairs running within the thickness of the external walls and an analysis of the drawings, photographs and plans of crusader castles reveals that the stone spiral stair is a great rarity within them.

The situation in Palestine in many ways reflected that in Europe, in that land was granted hierarchically and allegiance was to one's lord; upon receipt of that land, a castle was constructed. For example, in the early twelfth century Baldwin granted land in Caesarea to Eustace Garnier, who constructed a castle there soon afterwards.[605] However, constraints on the crusaders – access to personnel, construction materials, water, agricultural produce and finance – limited the size and the complexity of castles there for, unlike Europe, the source of income for the crusader lords was not from produce from the land through 'servile peasants'[606] but, in this harsher environment, from the sale of water and import taxes on the goods transported around the region that were so important to the survival of its people. For example, the castle at Le Destroit, near Atlit, Israel, was, in reality, merely a fortified way station with a straight intramural stair.[607] So unlike Europe, where the wealth of the elite was derived from the land and its produce, the wealth generated in the Holy Land was from taxes and charges. It follows from this that

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[602] Nicolle, Crusader Castles in the Holy Land, p. 4.
[603] Ibid., p. 9.
[604] Ibid., p. 10.
[605] Pringle, 'Crusader Castles', p. 16.
[606] Ibid., p. 20.
[607] Nicolle, Crusader Castles in the Holy Land, p. 19.

castles played a different role in the two regions: in Europe to hold the land and in the Holy Land to control trade routes. Additionally, while in Europe the peasantry were owned by a castle-dwelling elite, in the Holy Land they were not.

So the economic foundations of the castle, their administrative functions and their role in overseeing a social hierarchy were all very different in the Holy Land compared to the situation in Europe. Moreover, many castles may initially have been built to serve the largely male crusading elite rather than to serve a full mixed gender family and household, though it is clear that some crusaders did in due course move their families to the Holy Land and housed them within their castles. Thus there are some factors which may help to explain the absence of spiral stairs from most crusader castles, but this remains a puzzle: after all, crusader castles did draw on a European heritage which used spiral stairs, many crusader castles were at the forefront of employing advanced architectural features and there was plenty of stone available locally from which to construct a spiral stair. Yet even at the greatest crusader castles, they appear to be absent. For example, the large crusader castle at Krak des Chevaliers, Syria, which was a sophisticated structure holding a garrison of 60 knights under a master, none of the towers have internal stairs and all communications are external, with a rare saut-de-loup of approximately three metres with a turning bridge. [608] At one group of crusader castles there may, however, be a simpler explanation for this puzzling absence of spiral stairs, linked very much to the social structure of their owners, a tightly regulated and exclusively male 'organisation'. The Knights Templar built and ran a number of castles in the Holy Land, for example Beaufort, Lebanon, which they developed into an extensive castle after its small beginning in 1139, so that by 1268 it had a keep and a bailey. The Templar castles have no spirals and in this case the limited and exclusively male elite private space within these castles may explain why spirals were superfluous.

A somewhat neglected area of castle studies – at least with publication in English – is that of castles of the area of modern day Greece and Cyprus. Nicolle and to a

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[608] D. J. C. King, 'The Taking of Krak des Chevaliers in 1271', Antiquity, Vol. 23 (1949), pp. 83-92. See also J. Mesqui, Châteaux d'Orient: Liban Syrie, (Vanves, 2001).

greater degree Molin have started to address this area.[609] Cyprus was a Byzantine state until, in 1191 during the Third Crusade, Richard I took a detour and conquered the island. This was significant on two counts, for it was the first major diversion of a crusade en route to Islamic lands and it was the first occasion on which an Orthodox state was attacked by a Catholic army. The Fourth Crusade was proclaimed in 1198 and also diverted into Byzantine lands, such that by 1204 the Byzantine capital of Constantinople had capitulated and Count Baldwin of Flanders was elected emperor. Venice and Genoa took advantage of the situation separately and were able to found their own territories in the eastern Mediterranean and the Hospitallers held territory further west. With the conquest of these areas, the crusaders gained control of a variety of defensive structures that were employed and enhanced to accommodate their requirements. Cyprus, for example, was not heavily defended by the Byzantines and the crusaders strengthened the defences of the island such that the states established in Greece and Cyprus during the medieval period were often able to prevail well beyond the life of the crusader states on the mainland Middle East. Nicolle analyses a 1377 list of castles in Greece and Cyprus and although he maps the location of many of these, there are many more whose locations remain uncertain.[610] In considering the design of these castles, Nicolle disagrees with 'Most historians [who] highlight Italian naval dominance as being a key strategic consideration' on the premise that small Islamic pirate units would penetrate far inland and that affected the design of the defences of the crusader states and 'larger Italian colonies'.[611] Under the Lusignan rule of 1192 to 1489,[612] Nicolle defines four types of fortification in Cyprus as 'isolated mountain top castles in the north of the island, such as Bufavento, St. Hilarion, and Kantara; coastal towns with citadels, such as Paphos, Limassol, and Magusa; inland towns with minimal defences, such as Nicosia; and small rural castles.'[613] No fieldwork was undertaken on Cyprus and although recent publications have begun to analyse the much-neglected castles found on the island, the evidence remains very thin. However, from the sources available it does

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[609] K. Molin, Unknown Crusader Castles, (London, 2001).
[610] D. Nicolle, Crusader Castles in Cyprus, Greece and the Aegean 1191-1571, (Oxford, 2007), p. 5.
[611] Ibid., p. 6.
[612] Founded by Guy de Lusignan who became lord of Cyprus in 1192 and was succeeded by his brother Amaury de Lusignan in 1194, the first king of Cyprus and Jerusalem.
[613] Nicolle, Crusader Castles in Cyprus, p. 9.

appear that spirals were rarely employed in these castles, perhaps for much the same reasons as have already been advanced in explaining the dearth of spirals in crusader castles of the Holy Land.

In Greece the old but simple defensive structures of the Byzantines continued in use by the new lords, though new castles were constructed, too; for example, between 1205 and 1280 castles were constructed by the crusaders at 'Veligosti, Geraki, Kalavryta, Karytaina, the lower peaks of Corinth, Mistra, Chlemutzi, Old Navarino, and Leukton' and some structures taken by the crusaders were upgraded, such as 'upper Corinth, Argos, Kyparissa, Nauphlia (Nafplion), Kalamata, Monemvasia and Patra.' However, more research is required to identify further sites on the ground from the documentary sources and more fieldwork is needed to determine changes .[614] Although this thesis has attempted not to advance the view that castles were primarily defensive, here in Greece it appears that their purpose was more defensive than domestic or status orientated, because the whole area was in turmoil, with civil war and invasion by Christian and Islamic forces. What is of note here is that only a small number of mounted knights were required to conquer central and southern Greece, which was a good thing for the land could not support a large population of conquerors and through lack of resources some castles were very small. However, there were large castles that would befit the status of their owner, for example in the thirteenth century, the castle at Thebes that was more of a palace than castle.[615] During this period the crusaders remained separated from the local inhabitants, maintaining their own language and customs, and they may have always harboured a fear that if Islamic soldiers ever attacked, the local population might rise up against them and their own small numbers would make them vulnerable.

With Jerusalem falling to the Islamic forces in 1244 and Acre in 1291, the crusaders who established themselves in Greece would have expected attacks from the Islamic forces until the end of the Ninth Crusade in 1272 and beyond. In Greece, as in the Holy Land, 'materials, money and manpower' were limited and so 'large donjons were rare' and tended to use the topography to reduce the costs

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[614] Ibid., p. 10.
[615] Residence of the duke of Athens.

of construction, for example using steep cliffs as part of the defence and placing curtain walls across flatter areas.[616]

With reference to spiral stairs, Mistra Castle near Sparta was constructed in 1249 by Guillaume II de Villehardouin and plans of its remains show no signs of spiral stairs. Whilst the Citadel at Patras dates to Justinian I, after 1205, its defensive capacity was strengthened by the crusaders to incorporate many features that are to be found in western European castles – gatehouse, mural towers, a moat, inner and outer baileys. However, there appears to be no sign of spiral stairs and the only stairs discovered in secondary sources, photographs and plans relating to these castles and others in the region are straight, including a 'quarter arch' supporting a straight stair.[617]

The diagrams, photographs and descriptions of the tower at Haliartos, Greece, show neither sign of spiral stairs nor indeed of any masonry stairs,[618] perhaps because these were not true residences, for Molin describes how these towers were similar to the Euboian towers that were constructed by Lombard settlers and were 'local refuge points, agricultural centres or status symbols'.[619] The tower at Thebes is now a museum and was constructed in the form of a keep with a spine wall, with two slit windows at ground level but with no entrance at this level, but again there is no sign of spiral stairs.[620] Chlemutzi Castle – from Clairmont – constructed by Geoffrey I between 1221 and 1223 to a high level of comfort for that period and on a high hill overlooking the sea, was the preferred residence of Geoffrey II de Villehardouin. It was an exceptionally fine structure for that area and had a 'large keep with an inner court'; it was spacious, well lit and had fireplaces for winter warmth and yet did not appear to have spiral stairs, but rather external staircases and an intramural stair that joins the first floor to the roof by following the curve of the wall in the north-east angle. The term 'keep' here is rather misleading in that it was of two storeys, had many rooms on each level and a central courtyard and would not fit the description of a great tower or donjon;

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[616] Nicolle, Crusader Castles in Cyprus, p. 11.
[617] K. Andrews and G. R. Burgh, Castles of the Morea, (Athens, 2006), p. 171.
[618] Molin, Unknown Crusader Castles.
[619] Ibid., p. 252.
[620] D. Facaros and L. Theodorou, Greece, (London, 2003), p. 376.

rather it would appear to be a palace within a strong wall. Access to more private spaces at Chlemutzi would be horizontal rather than vertical as in the great towers of the west. Possibly the best preserved castle in Greece – Platamon – stands on an outcrop of rock overlooking the sea towards Thessalonika and was built by Orlando Pischia, a knight from northern Italy; it has a strong gate, towers and a 16 metre high octagonal keep with a first floor entrance some 12.5 metres above the ground.[621] There appears to be no sign of spiral stairs at Platamon.

On Rhodes, there is a fine Hospitaller castle. In 1306 the Hospitallers invaded Rhodes and in 1309 transferred their headquarters there and constructed the castle in Rhodes town. The present structure is a replacement of that original, destroyed in an explosion in 1856, and was really an Italian palace for Victor Emmanuel III and later Mussolini. A field visit to the palace and a discussion with duty staff – perhaps hampered by language difficulties – came to the conclusion that there were never any spiral stairs here. The current stairs are broad and straight, though it is, of course, unclear whether they genuinely follow the design of the original medieval stairways. However, if there truly were never any spirals here, the explanation may lie in the builders and owners of this castle, the exclusively male organisation of the Knights Hospitaller, who would probably not have needed as much individual and private domestic space within their castles compared to other castles and who certainly would not have needed private space for elite female household members. There are castles in Turkey, too, with crusader origins, but these have been thinly researched and require more work which may throw up further information about the use of stairs, for at Rum Kale there is a sophisticated defence system with a two-storey fighting gallery along the northern perimeter.[622]

Further west on the island of Majorca, towers were constructed by local people rather than crusader invaders. Fornals describes how, *circa* 1382, the King of Minorca authorized towers to be built for the defence and protection of the dispersed agricultural population.[623] These were three-storey, freestanding, battered, crenellated, machicolated structures with the entrance on the first floor

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[621] Nicolle, Crusader Castles in Cyprus, p. 29.
[622] R. Gardiner, 'Crusader Turkey', Fortress, Vol. 2 (1989), p. 34.
[623] F. Fornals, 'Fortifications in Minorca', Fortress, Vol. 12 (1992), p. 31.

and although they had many attributes of a castle, they were not really residences and certainly not residences of lords. The day-to-day domestic life of the community centred on the manor house and the towers appear to have existed for refuge and defence of the agricultural population. Fornals describes how 'Communications between the ground floor, the middle floor and the roof platform was by ladder through a trap door'.[624] Clearly this arrangement would make day-to-day use of the structures laborious and tedious and thus it is reasonable to assume that the Majorcan towers were not intended as living space on a day-to-day basis; their presence indicates that the fortified and domestic elements of the residence were separated. The research did not uncover any signs of spiral stairs or other stairs in the Majorcan towers.

This broader geographical survey, covering England and Wales, parts of Europe and the Middle East, has served to highlight the presence and absence of spiral stairs and, where they are found, to point to their positions and roles. It has noted the absence of spirals in some areas and some types of castles even where we might logically expect to find them, most notably in the crusader castles, and it has offered explanations for their absence here and elsewhere. This chapter and this thesis as a whole certainly does not argue that spirals became synonymous with castles, that spirals are always found in castles which contain elite space or elite domestic accommodation or that spirals always play a role in signifying and giving specialist access to elite and controlled spaces. The earlier case studies of English and Welsh castles noted exceptions and further variations appear in the broader survey of castles undertaken here. However, this broad survey has strengthened the earlier interpretation that spiral stairs generally demarcate the transition from less private to more private space and from less elite to more elite areas of the castle.

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[624] Ibid.

Spiral Stairs in Medieval Secular Structures

Having explored spiral stairs within the context of castles, this chapter now moves on to explore other types of medieval buildings where we might expect or hope to find spiral stairs. It will begin by looking at other military or defensive type structures which are clearly not castles.

As well as being the chief architect of many of Edward I's castles of North Wales, Master James of St. George may also have influenced the design and layout of the *bastides* established in conjunction with these castles. Many were defended by stone walls, constructed with towers – typically backless round towers – where, given the frequent occurrence of spiral stairs in the castles associated with these town walls, it would be reasonable to expect spiral stairs to be used. For example, the town walls at Conwy contain many mural towers quite closely spaced, enabling withering defensive fire from archers as well as providing structural strength to the town walls built on Conwy's sloping site. However, of the 21 towers on the 1.2 kilometre circuit of Conwy town wall, none of them have any spiral stairs. The Mill Gate has a different and more complex internal arrangement than the other wall towers at Conwy and the Cadw guidebook reveals why this may be so, as the gate is very unusual in providing domestic accommodation, which is found in none of the other mural towers.[625] In the Mill Gate, which surviving royal financial accounts suggest was built in 1285-1286,[626] the domestic accommodation consists of large rooms above the gate with a grand fireplace and windows – elite signs – but no spiral stair. This seems to run against the theory but suggests that true elite accommodation must be found within the castle walls. The situation at Conwy is very similar to those of the other Edwardian town walls of North Wales in that spiral stairs are absent and the mural towers, which do not provide permanent or long-term elite accommodation, do not make use of the spiral. It is much the same in the town walls of South Wales. For example, at Tenby, Pembrokeshire, the town walls defend the rocky headland on which the town and castle sit and the first murage grant is dated 1328, permitting the raising of taxes on merchandise brought

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[625] A. J. Taylor, <u>Conwy Castle and Town Walls</u>, (Cardiff, 2003).
[626] Brown, Colvin and Taylor, <u>History of the King's Works</u>, Vol. I, p. 346.

into the town through its four gates.[627]   Today, these walls are almost a complete circuit – more than any other town in South Wales – and two original towers remain. The gates had portcullises worked from the battlements. Neither the gates nor the surviving mural towers show any signs of spiral stairs.

Looking more generally at English and Welsh town walls, Smith states that they were built primarily for defensive purposes but also for three other reasons: firstly as a show of civic pride; secondly as a source of taxation; and thirdly to encourage trade in a 'safe area'.[628] In Wales there were laws that prevented the Welsh from living in the *bastide* towns and forced them to trade only at the town markets. Often these town walls were built and repaired on instructions from the king – sometimes with a murage grant given from the crown.[629] Springing from Smith's work, but enhanced by some new fieldwork, it appears that the absence of spirals in Welsh urban defences is repeated when we look at the surviving medieval town walls of England. For example, fieldwork at Chichester, West Sussex, confirmed that its widely-spaced mural towers, built into the circuit of walls on this flat site in part making use of the earlier Roman wall, do not contain any spiral stairs. All the evidence suggest that in England as in Wales the towers within urban defences did not generally provide long-term of elite domestic accommodation and so did not normally have spirals.[630]

The absence of spiral stairs in most town wall towers links to the fact that these towers appear not to be permanent residences. They may have been forced into use as temporary residences for the lower orders in medieval society but because the mural towers of the town wall were without surrounding walls, fireplaces and garderobes that came with status in medieval society, they were for the lower orders, and the presence of a spiral stair – although a fine solution to vertical movement of people in a limited space – would not be utilised because of its association with elite status. The towers were accessed directly from the wall walk

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[627] Davis, A Company of Forts, p. 109.
[628] T. P. Smith, 'Why did Medieval Towns have Town Walls?', Current Archaeology, Vol. 95 (1985).
[629] Ibid.
[630] See also O. Creighton and R. Higham, Medieval Town Walls: an Archaeology and Social History of Urban Defence, (Stroud, 2005).

or from ground level by ladders or permanent masonry straight stairs. For example, the Bath Tower at Caernarfon, a mural tower in its town walls, probably fitted this description in the medieval period, but it was much changed and incorporated into a public bath house in 1823. As ever, there will be, no doubt, exceptions to the rule, such as the Mill Gate at Conwy, and later structural changes sometimes confuse the original position, but in general and in the great majority of cases, at least as far as the English and Welsh evidence takes us, the rule holds true with the addition that the elite space must be inside the castle.

Pele Towers, late medieval lightly defended domestic stone towers which are found particularly in northern England, southern Scotland and parts of Ireland, are not castles nor were they elite residences. However, they clearly were designed, at least in part, with a defensive capacity, offering some protection to the owners, perhaps prosperous farmers, their families and choice animals. Pele Towers did offer domestic accommodation in their upper storeys but they were often attached to or stood close by a block or range of ground floor buildings and so may have been designed to offer stronger but non-permanent accommodation during times of trouble. This ambiguity in the nature of the domestic accommodation offered within the tower and its intended use probably explains the confused position in regard to spiral stairs. Some peles have spiral stairs running the full height if the building, from the stone vaulted ground floor chamber up to the wall walks which did top many peles. Other peles have spiral stairs leading from the first floor to the top of the tower. Some peles have straight intramural stairs linking the upper storeys. Some peles appear to contain no stone stairs and access between levels was probably by wooden ladders or steps. Therefore, no clear pattern is evident and there is no sign of a chronological development, with a move from wooden to stone or from straight to spiral stairs, nor do spiral stairs appear to be associated with particularly tall peles or with those offering particularly luxurious domestic chambers as indicated by upper floor windows, widow seats or fireplaces. Within this area there was relatively less direct control by the nation's political elite and so middling landowners in this border region had greater independence to act. Milner sees the Pele Tower as a response to the strife in the fourteenth and fifteenth centuries in Northumberland and he describes it as the 'Northumberland country

gentleman's place of refuge', sometimes with a spiral stair to link the interior floors.[631]

Barry describes the Irish Tower House as 'arguably Ireland's most iconic and recognisable type of castle'.[632] They were 'defended houses' built by both the Gaelic-Irish and Anglo-Irish middle and lower nobility mainly in the latter half of the Middle Ages and according to Barry – drawing from Budd – were most probably the social focal point of their community as well as being a point for visitors 'feasting and guesting' under the roof of the lord.[633] Cairns describes the Irish Tower House as changing little between its Anglo-Norman origins and later structures.[634] He also emphasises that the attacks and consequent defence of the Irish Tower House were brutal and, where the attack was successful, frequently led to the massacre of the defenders and the destruction of the building.[635] For example, Brickland, Co. Down, was demolished and the occupants killed by the attackers in 1424.[636] Many but not all Tower Houses had the equivalent of a small bailey, termed a 'bawn', attached to them and it is probable that cattle were sheltered here in difficult times and possibly even in the ground floor chambers of the tower house itself, for cattle were a measure of a person's wealth in Ireland at that time. However, Berryman analysed Irish Tower Houses with particular reference to defensibility and concludes that 'a simple, and typical, tower house was not designed to be exclusively or primarily defensive'.[637]

Irish Tower Houses are typically three storeys high, with ground floor storage space, a first floor hall which also gave access to the foot of a spiral stair leading to the top floor. The separate stair from the ground floor to the first floor hall is typically wide and straight, whilst the stair – usually only one – from the hall to the sleeping accommodation above is invariably a narrow spiral. The Tower Houses

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[631] L. Milner, 'Northumberland Pele Towers', Archaeological Journal, Vol. 133 (1976), p. 168. See also Graham, Castles of Northumberland.
[632] T. Barry, 'Harold Leask's "Single Towers": Irish Tower Houses as Part of Larger Settlement Complexes', Château Gaillard, Vol. 22 (2006), p. 27.
[633] Ibid., pp. 28-29.
[634] C. Cairns, 'The Irish Tower House - A Military View', Fortress, Vol. 11 (1991), p. 3.
[635] Ibid., p. 4.
[636] Ibid., p. 9.
[637] D. Berryman, 'The defensibility of Irish Tower Houses – A study', The Castle Studies Group Journal, Vol. 24 (2010-2011), p. 268.

were constructed with relatively thin walls and although the spiral stair is of a small diameter, it juts out and is accommodated in a stair turret corbelled out from the Tower House wall such as at Tully Castle, Co. Fermanagh (Figure 97). This makes the stair turret obvious to a person viewing the structure. The consideration here is that this corbelling to identify the spiral stair is flagging the elite nature of the inhabitants, in much the same way that Scottish castles do with their numerous corbelled stair turrets.[638]

Figure 97. Tully Castle.
Illustrating corbelled out stair turret from the first to second floor.
Photographer: C. Ryder.

Scotland, too, developed a Tower House form of architecture with corbelled stair turrets. Scottish castles and tower houses are described by Reid as usually being smaller than those south of the border, and existing in a society that was primarily clan based but with a feudal veneer. He categorises the castles and Tower Houses as follows: Old Celtic fortresses, for example Edinburgh and Stirling; motte and bailey castles, especially in Galloway; and enceinte and courtyard castles for

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[638] Although they deal in the main with true castles, which are not being discussed here, the Irish Tower House also receives some attention in D. Sweetman, <u>The Medieval Castles of Ireland</u>, (Woodbridge, 1999) and T. McNeill, <u>Castles in Ireland</u>, (London, 1997).

example Caerlaverock, Dumfries and Galloway, Kildrummy, Aberdeenshire, and Urqhart, North and Grampian.[639]

Reid describes how at the beginning of the fourteenth century castle building in Scotland made a 'sudden and complete reversal', when castles were considered to be vulnerable and 'castles were abandoned and slighted as a matter of course, and in some cases completely destroyed';[640] 'this deliberate avoidance of large-scale fortifications was a process which went on all over Scotland during the later Middle Ages' as there were comparatively few castles built after the Wars of Independence because 'few aristocratic magnates remained'; the fourteenth- and fifteenth-century castles were primarily dwellings and the style of the Tower House emerged in the fourteenth century.[641] The Tower House was 'defensible not defensive' and came in a number of styles that reflect the shape of the ground plan: 'L', 'Z' and 'T' shaped.

Unlike many historians, Reid has given detailed attention to the role and placing of spiral stairs within these structures. His work confirms that 'internal stairs connecting various floors were almost always of the spiral or turnpike variety in order to save space, although there was a tendency in later castles to build wide, square sectioned stair towers as the likelihood of having to defend them receded'. Initially, the stairs were in the thickness of the wall, but 'in addition it also became very common to attach additional external stair towers, corbelled out from the first floor or above, rather than from the ground floor as can be seen in Kinkell Castle', Highland.[642] These corbelled towers often had 'cap heads' under which was a room at the top of the tower. Reid reinforces the point made elsewhere that the higher the floor where one dwelled, the higher the status of the person. Here is seen the adoption of the spiral stair and a new form of corbelled stair turret, the idea for which may well have been imported from France, where it is readily observed in many châteaux, as well as in the Irish Tower Houses.[643]

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[639] S. Reid, Castles and Tower Houses of the Scottish Clans 1450-1650, (Oxford, 2006), p. 9.
[640] Ibid.
[641] Ibid., p. 12.
[642] Ibid., p. 20.
[643] Although they deal in the main with true castles, which are not being discussed here, the Scottish Tower House also receives some attention in C. Tabraham, Scotland's Castles, (London, 2005) and M. Brown, Scottish Baronial Castles, 1250-1450, (Oxford, 2009).

In south-west Wales, Davis notes seventeen confirmed sites of tower houses, defended manors and towers, and eight further possible sites. These medieval stone buildings, some rising to several storeys, certainly cannot be described as castles but they do have some defensive capacity and they are quite distinctive to the Pembrokeshire region, a melting pot of Norman, English, Flemish and Welsh peoples. Davis reveals that, much like the Pele Towers of the northern border, the presence and types of stairways within these structures varied enormously. Thus, the tower at Carswell had 'no communication between rooms, and the only access to the first floor was by means of a removable ladder-stair'. Bonville's Court, now under a waste tip, had a stair rising to the first floor and another rising up from that floor,[644] but there is no indication if it was spiral or not. Flimston, by contrast, was only accessible by an external stair. Newhouse is a two-storey block accessed at first floor level by an external stair and an internal spiral stair rose from the 'basement to the rooftop'. The grandly named moated manor of Roche Castle, has a turret with a spiral stair. Upper Lamphey Park is two storeys with a single room on each floor, but with a 'little stair turret' where 'the newel stair appears to have risen to either a third floor, or vanished battlements'. At Upton, the heart of the early nineteenth-century house reveals a medieval rectangular block with a newel stair in one corner.[645] To summarise his very mixed observations, Davis states that 'the surviving evidence suggests that most towers formed only one part of a larger undefended house and that prestige (as much as peace of mind) was an important factor in their construction'.[646] Very much like the builders of Northumberland, those of Pembrokeshire adopted a wide variety of building styles in these lightly defended medieval structures and this is reflected in the wide range of methods employed in moving vertically within them.

With these buildings in south-west Wales, we are beginning to move from structures that appear to be primarily military or at least defensive to those which have a clearer elite domestic role. One such building, about which significant work has been published and which provides a further important insight into the spiral stair, is the manor house or *maison-forte* of late medieval Brittany. Jones

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[644] Davis, Company of Forts, p. 116.
[645] Ibid., pp. 118-123.
[646] Ibid., p. 113.

and his fellow authors have analysed the evolution of this building type, some constructed during the thirteenth century but in larger numbers during the fourteenth, often associated with the exploitation of the estate and the visible display of lordly authority.[647] Although possessing defensive features, during the lifespan of this building type they became progressively more symbolic or decorative and less functional.[648] Brittany had limited natural resources and a higher than average number of noble families for the area, with the result that these families were forced to live off very limited means. The *manoir*[649] is different from the domestic dwellings of peasants as it possesses a closed courtyard with two entrances – *porte cochère* and *porte piétonne*[650] – and outbuildings that would typically include a gatehouse and a dovecot, plus a fishpond or lake, a warren, woodland and a *chapelle* – all signs of lordship. A tree lined avenue was often used as the formal approach to the *manoir*.[651] The traditions of lordship in Brittany are expressed firstly as motte and bailey castles and then through stone keeps that were sometimes incorporated into the *manoir*, to indicate that occupants were from a well established family. However, many *manoirs* were constructed in the fifteenth and on into the sixteenth centuries. Internally, the structures had fireplaces and many had spiral stairs; indeed, all the diagrams in the work by Jones and his colleagues have signs of at least one and in some instances two spirals. Jones notes that 'Two recurring themes in French seigneurial architecture are the persistence of the tower and the development of "superimposed halls", that is of several halls placed one above the other with an implied degree of social segregation, coupled with increasing privacy above the ground floor.'[652] It would appear that the lesser nobility of Brittany copied specific elements of design and features from the rectangular and circular *donjons* of the higher nobility as well as building tall *manoirs* by sometimes incorporating a tower into the structure: for

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[647] M. Jones, G. I. Meirion-Jones, F. Guibal and J. R. Pilcher, 'The Seigneurial Domestic Buildings of Brittany: a Provisional Assessment', The Antiquaries Journal, Vol. 69 (1989), pp. 73-110.
[648] Ibid., p 74.
[649] The term *manoir* was used by Vicomte Frotier de la Messeliére for the noble residence structure rather than the whole estate.
[650] Literally 'coach gate' and 'pedestrian gate' and this reflects the entrances to French castles such as Loches where there was often a turning bridge to each of the gates that were positioned side-by-side.
[651] M. Jones *et al*, 'Seigneurial Domestic Buildings', p. 80.
[652] Ibid., p. 82.

example, Kerbridou, Plouaret.[653] Another example is La Grand'Cour, Taden, which has many signs of lordship – a great hall with a fireplace, *chamber seigneuriale* or solar with fireplace and a garderobe tower – and has a round stair turret that is the highest part of the *manoir*.

At Le Brégain, La Boussac, the original structure of what was the prior's house has had the upper floors removed but the stair turret that served the upper part of the structure survived. This rectangular turret in the north-east angle contains a clockwise spiral stair lit by slits that led to the upper floor of the original structure and then the spiral stair terminates in a small chamber and a straight stair following the line of the turret wall leads to a chapel above, that appears to have had a wooden gallery projecting to the north side of the tower.[654] La Ville Norme, Plémy, is a two-storey structure with a basement, *cellier* or *cave* at one end. The lower storey consists of a large hall – *salle basse* – with a fireplace and what appears to be a hall passage. Straight stairs lead down to the basement and up to a mezzanine chamber with a fireplace and a squint into the *salle basse*. At the second storey level there are two chambers – one wide and one narrow – each with a fireplace. A round stair turret carries a wide clockwise spiral stair from the ground floor *salle basse* up to the second storey, where there are two doors – one to each of the chambers. This turret is attached to but stands proud of the main structure. Le Carpont, Trédarzec, has two spiral stairs of different sizes. The structure is divided into three sections, with a central double-height hall with a fireplace and windows, and two chambers at each end both with fireplaces. On the floor above, there are two chambers directly above the ground floor ones and the open upper part of the hall. Originally, it was possible to access the narrower anticlockwise spiral stair from the hall and from the chamber next to it and this spiral stair runs up to a chamber with a garderobe. This narrower spiral stair is encased in the angle of the outer wall and the dividing wall between the great hall and the smaller chamber and, from the exterior of the *manoir*, the only evidence of its existence are two small slits for light. At the opposite end of the structure, a wider spiral stair runs clockwise to the upper storey chamber – slightly larger than

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[653] Ibid., p. 95.
[654] Given its location, its large fireplace and evidence of large windows, this was probably the great hall.

the one at the opposite end – where there is a fireplace. This spiral stair is lit by slits and is contained in a rectangular stair tower that stands proud of the main structure. Entry to this spiral is both from a hall passage and the lower chamber. Kerbridou has recently been dated to 1549 and so is strictly beyond the remit of this thesis but it does reveal an intriguing arrangement of spiral stairs that is echoed at La Ville Daniel, Plaine-Haute, that from the inscription on the stair turret is dated 1559.[655] At both of these locations, there is a narrower spiral stair that runs off the wider spiral stair;[656] at Kerbridou this narrower stair runs anticlockwise from the second floor level of the wider anticlockwise spiral up one level into the tower room, whilst at Nicolas le Voyer's La Ville Daniel the wider clockwise spiral rises up from the basement through to the second floor, where the narrower clockwise spiral runs up to a tower room. Both the wider spiral stairs are contained in stair turrets – Kerbridou's rectangular and La Ville Daniel's round – that stand proud of the main structure and both the narrower spiral stairs are contained in stair turrets that jut out in the angle of the wall and the stair turret; both of these turrets for the narrower stairs are rounded.

For many of the nobles of Brittany a single manor was all they held and their residence a single *manoir* and yet they appear to have been very proud and maintained traditions of showing largesse to newcomers and locals in their great halls, despite their own somewhat limited resources. Along with this, it appears that the seigneurial style of Brittany was to demonstrate – through their dwellings and ancillary structures – that they were nobles and were descended from noble families. Within the main dwelling, signs of nobility appear to be a fireplace[657] – preferably one in each domestic space – a great hall, private chambers, a chapel and a tower. However, in these buildings another sign of nobility seems to have been the spiral stair and the visible stair turret which contained it.

Another non-military elite building, but in this case more specialised and not intended as a long-term or permanent residence, was the hunting lodge. In

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[655] Not always sufficient proof of dating.

[656] This is not exactly the same as the Tour Jean sans Peur but is on a similar principle: that the wide spiral stair leads to a private space but the accompanying narrow spiral stair leads to an even more private space.

[657] Peasant dwellings would have a central hearth.

medieval times hunting was hugely important to the elite class, who placed great restrictions upon the activity to prevent other classes from participating. Sometimes, the hunt was conducted within sight of the castle and much is now being discovered through research into the landscape around castles and into parks and other lordly developed landscapes.[658] However, male hunting parties would also go away for several days' bonding and stay in hunting lodges. One such lodge is described by Roberts – the 'park lodge' at Odiham, Hampshire – that by the use of dendrochronology has been dated to between 1368 and 1375 and also from financial accounts to between 1366 and 1370.[659] This two-storey structure has an upper floor consisting of a single chamber that is accessed from an external stair, whilst the lower level is divided into two chambers. There are no signs of an internal stair. This appears to be quite typical for hunting lodges and there is no sign that spiral stairs were part of the original structures. Typically they were of two-storeys with a straight stair either internally or externally. Based upon the thesis presented in this thesis, it may be expected that the upper chamber would be the private space of the lord and that a spiral stair would demarcate this private space from other spaces in the structure. However, the absence of the spiral may well signify that groups were enjoying their time together after the hunt and, whilst bonding, the hunters would feast and then perhaps all bed down in the same space, in much the same manner as if they were on campaign, for hunting was regarded as practice for war.

Turning to non-elite domestic space and returning to a focus on England and Wales, published work suggests that, although spiral stairs became a common feature of castles and some other elite spaces, they generally were not employed at a lower social level. Many changes occurred at the lower levels of English society through the medieval period, with a waning of the feudal system, so that by the end of the fourteenth and early fifteenth centuries, 'peasants traded at market, made money and hired workers' and landlords 'were having to adjust to new and adverse circumstances, which involved them in abandoning direct management of

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[658] Liddiard, Castles in Context, and Liddiard, The Medieval Park.
[659] E. Roberts, 'Edward III's Lodge at Odiham, Hampshire', Medieval Archaeology, Vol. 39 (1995), p. 91.

agriculture, and depending more on rents'.[660] Peasants had access to money that could be spent upon a range of previously unaffordable items, including buildings and in particular dwellings. Throughout the medieval period, the three-bay, single-storey structure remained the commonest form of English vernacular building, in which animals, people and stores each had an apportioned and clearly defined space. Although by the mid-fourteenth century, people and animals were living in separate buildings in many parts of England, this was not the case broadly across Europe or even in parts of England and Wales. The main design of medieval non-elite dwellings generally followed the single-storey horizontal form and consisted of 'aula and camera' (hall and chamber), with the kitchens frequently located in the end bay or in a separate structure. Dwellings were rarely shared, and normally a room would be added if more than one family were required to live together in a dwelling, rather than families sharing the same room. There is little evidence that stone was commonly used in the construction of non-elite dwellings, perhaps because of prohibitive cost or because stone had an association with elite structures. However, Dyer notes that there is evidence of a small number of two-storey domestic dwellings – non-elite structures – such as those at Bromsgrove, Worcestershire (1474), Shirehampton, Gloucestershire (1483), and others in Devon and the Midlands. At Loxley, Warwickshire, the upper storey or loft was accessed by a 'gryce' or ladder rather than by a stair.[661] In 1460, in Kent, a two-storey non-elite building had its upper storey described as a 'solar',[662] a term typically used for a lord's upper chamber, but that there appears to be no mention of a stair or how this chamber was accessed, whether from the interior or exterior of the building.

From this information on vernacular buildings, it is reasonable to conclude that spiral stairs were absent from these structures. This is in part surprising because a generally accepted development within society is for the non-elite to mimic the elite (or those with power within societies) in manners, speech, clothes, possessions and dwelling form. However, with spiral stairs present in castles, it is not too large a leap of logic to link spiral stairs with lordship: lords have spiral stairs, whilst other people do not. Although there appears to be no evidence in law

[660] C. Dyer, 'English peasant buildings in the later Middle Ages (1200-1500)', Medieval Archaeology, Vol. 30 (1986), p. 22.
[661] Ibid., p. 24.
[662] Ibid., p. 33.

or other contemporary records that the inclusion of spiral stairs within vernacular buildings was not permitted, the spiral stair appears to have had an association with the ruling class during this period and the absence of spiral stairs suggests that constructors of vernacular buildings were dissuaded from including them.

Spiral Stairs in Medieval Religious Buildings

Medieval religious buildings offer another fruitful line of research, for two reasons. Firstly, many of the patrons, owners and architects of castles were also instrumental in the construction or development of medieval ecclesiastical buildings. Given this link, it is very unfortunate that hitherto much of the work on castles seems to have been rather self-contained and to have ignored the potential of religious buildings to throw fresh light on castles. Secondly, and more specifically relating to stairs, medieval religious buildings generally possessed elements which were lofty and which either rose through several storeys or in which access to high levels would be necessary, at least from time to time. Accordingly, churches, cathedrals and monastic buildings may contain spiral stairs, whose position, structure and role may strengthen, modify or run against the theories already developed for spiral stairs in castles.

Early medieval churches were typically single storey and so would appear not to require a spiral stair. However, this does not always hold true: the research has discovered that spiral stairs were utilised in single storey churches. For example, Saxon churches in England are single-storey with a tower at the west end, and yet spiral stairs can be found in two contexts within their walls. Firstly, there are examples of a spiral stair leading up to the rood screen and, secondly, in a few churches spiral stairs rise up the tower. Although the Saxon churches of Norfolk generally do not employ spiral stairs, at the church of St. Peter and St. Paul, Burgh Castle, Norfolk, a single-storey church with a round tower, there are no signs of a spiral stair in the tower but there is a clockwise spiral stair built into the north wall of the nave, leading up to the rood screen. The stairs are barely big enough to accommodate an adult, with the step 65 cm wide, with a 25 cm outer and an 18 cm riser. Whilst the dating of Burgh Castle church is disputed, with Pevsner favouring

a post-Conquest date,[663] there is no such uncertainty about the pre-Conquest date of St. Andrew's, East Lexham.[664] A second example of this arrangement survives at East Lexham, but it was not accessible during the fieldwork and thus no measurements were taken. The top of the rood screen was a limited access area and the architects could easily have designed a straight stair to serve it but a spiral was chosen. Following the general theory of this thesis, this was not the private space of a lord but it was a private area with great restrictions on who could access it.

The presence of spiral stairs in or adjoining some Anglo-Saxon church towers, particularly those contained in semi-circular turrets attached to the main square tower, has already been discussed in Chapter 2 in the context of the search for the origins of the spiral stair. However, the structural and dimensional analysis presented here throws further light upon some of these spirals. At St. Barnabas, Great Tey, Essex,[665] a clockwise spiral stair rises up the tower with a 65 cm wide step, with a 25 cm outer, a 23 cm riser and a 15 cm diameter newel, accessed along an 80 cm passage and through a 65 cm wide doorway. At Brigstock, , the clockwise spiral stair in the turret has a step of 68 cm in width, with a 38 cm outer, a 20 cm riser and a 12 cm diameter newel, accessed through a 64 cm wide doorway and along a 95 cm passage. Hough-on-the-Hill is a third example, with a stair turret attached to the west tower, inside which a clockwise spiral rises, with its original stairs, almost to the second floor.[666] Spiral stairs within semi-circular or rounded turrets attached to the main tower perhaps denote restricted access to the upper parts of the church tower, but most Saxon church towers do not have spiral stairs. What is of interest is the construction method of the spiral stairs in the Saxon towers, because the stair and newel are not of one piece of masonry but two separate stones; the newel is drum shaped and each section carries one end of several steps, which are cemented to it, while the other end of the steps are fitted into the inner face of the exterior wall. In order to construct a spiral stair using this method, it would be necessary to set up a framework to hold the steps in place until

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[663] N. Pevsner, The Buildings of England: Suffolk, (London, 1961), p. 114.
[664] J. Bettley and N. Pevsner, The Buildings of England: Norfolk II, p. 321.
[665] See Bettley and Pevsner, The Buildings of England: Essex, (London, 2nd edn, 2007), pp. 420-421.
[666] Taylor, 'Hough-on-the-Hill', pp. 335-336.

the mortar set hard enough to hold them. The underside of the stairs would appear to be a vault and thus the name *cochlea* has been used for spiral stairs. This method of construction would be time consuming and expensive in materials and labour.

Some Saxon church towers were raised over earlier west porches. For example, Fisher analyses the church at Brixworth, constructed 750-770,[667] where a staircase tower, with a vaulted stair, was added around the mid-tenth century. Fieldwork revealed that the spiral stair rises clockwise, with a 100 cm wide step, with a 43 cm outer step, a 20 cm riser and a 73 cm diameter newel, and the stair is accessed at ground level through a 93 cm wide doorway and along a 225 cm passage. Other towers, such as Brigstock, had a wooden rather than a stone staircase. At Great Hale, Lincolnshire, there is a 'peculiar spiral staircase…built into the north-east corner….which is reminiscent of those at St. George, Salonica and S. Lorenzo, Milan'.[668] Here the newel is 40 cm in diameter, with a 45 cm wide step and each step is a single piece of masonry. These Saxon towers consisted of three levels: at ground level the porch, above that the ringing chamber and at the top the belfry. However, many of these towers present problems of dating, as they no longer possess distinctive Saxon architectural features; even the structure of a spiral stair consisting of two parts, the newel and the step, which is often seen as indicative of an early Saxon spiral, has been claimed to be a post-Conquest technique by some historians.

Turning to English monastic sites and buildings, Battle Abbey, East Sussex – completed in 1094 – has limited structural remains today but has a significant Gatehouse – construction commenced in 1338 – in which can be found not only a portcullis and murder-holes but also a spiral stair that rises from the ground floor to the roof. It is accessed directly through a door and rises clockwise with a 100 cm wide step, a 44 cm outer, a 20 cm riser and a 20 cm newel. The quality of the upper chambers and their location in a fourteenth-century structure would indicate that these were rooms for a significant member of the religious community. Similarly, the Gatehouse at Michelham Priory, East Sussex – dated to the late

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[667] Fisher, <u>Anglo-Saxon Towers</u>, p. 52.
[668] <u>Ibid</u>., p. 64.

fourteenth century – has a spiral stair set in the same relative location as that at Battle which rises to the roof, servicing chambers of high status on the way. This anticlockwise stair is reached through a 70 cm wide doorway and along an 88 cm passage. The stair has a 70 cm wide step, a 30 cm outer, a 22 cm riser and a 15 cm newel. Both of these spiral stairs demarcate access to the private space above the gate passage and to high status rooms. These gatehouses 'must have been a considerable, and in their effect, a spectacular part of their builders' architectural achievement'.[669] As in castles, so in monasteries, the rooms above the gatehouse were generally well appointed with luxury architectural features such as windows, window seats and fireplaces. Monastic gatehouses are seen by Oram to be an expression of lordship.[670]

Castle Acre Priory, Norfolk, also has a spiral stair in the Gatehouse in a similar position to those at Battle and Michelham, although it is later and is dated to the sixteenth century. Nonetheless, it is of interest because, even at this late date, it was deemed appropriate to employ a spiral here to access the Prior's courthouse and exchequer and thus private or restricted space.[671] Elsewhere in Castle Acre Priory, fieldwork discovered seven other spirals stairs and further research at other religious houses led to a possible pattern of access by spiral stairs within the main body of a church, monastic or non-monastic. There would be spiral stairs set in the corners of the main church which led to the leads and the higher galleries and access to these spiral stairs was blocked by doors. There are four of these spiral stairs in the church at Castle Acre – one each in the north-west and the south-west corner, and one each in the North and South Transept. Elsewhere in religious structures, there is no consistent pattern but a trend. The spiral stair in the south-east corner of the Kitchen at Castle Acre rises to the floor above and would indicate that there was private space above the kitchen allocated for the person in charge; similarly, the spiral stair in the south-east corner of the Refectory probably led to a room at the east end of the Refectory next to the Dormitory. In both cases the now ruinous condition of the spiral stairs and the upper rooms which they

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[669] B. Little, Architecture in Norman Britain, (London, 1985), p. 104.
[670] R. D. Oram, 'Prelatical builders lordly symbolism in episcopal and monastic residences in Scotland *c*. 1124-1500', Château Gaillard 20 Etudes de castellology médiévale 2-10 Septembre 2000, (Caen, 2002), p. 188.
[671] J. Coad and G. Coppack, Castle Acre Castle and Priory, (London, 1998, reprinted 2003), p. 23.

accessed preclude firm conclusions, but this appears likely. However, the spiral stair that remains to be described in the Prior's House is of significance in its location and design. This anticlockwise spiral stair, with a 73 cm wide step, a 25 cm outer, a 15 cm riser and an 18 cm newel, rises from the Prior's Outer Parlour on the ground floor up to the Prior's Parlour on the first floor, which was originally the Prior's bedchamber. Thus the spiral leads from a less to a more private space. A visitor today finds the stair to be rather dark and it appears the same was true when it was constructed in the mid-twelfth century and to give natural light an ingenious arrangement of two squints is used at the top of the stair.

Fieldwork at Wenlock Priory was able to access five spiral stairs, but with some difficulty because the Prior's House is now in private ownership. However, once contacted the owners were very pleased to accept a field visit to the interior of their home. In the church, the pattern of spiral stairs already noted is apparent, with spirals rising from the ground floor in the Transepts to the leads – two clockwise stairs – and these were the only ones found other than in the Prior's House. In the Prior's House is a large clockwise spiral with an 88 cm wide step, a 40 cm outer, a 19 cm riser and a 20 cm newel, that links the ground floor to the second floor of the Infirmary. However, the gem of a spiral stair at Wenlock is the double spiral that is not shown on the English Heritage plan.[672] This is one of the double spirals referred to by Whiteley.[673] The entrances to these stairs are opposite each other in a very thick wall and both stairs rise clockwise within the same stair shaft. The one from the 'Wunderkabinett' is accessed by a 48 cm wide doorway, along an 88 cm long passage and it has a 75 cm wide step, a 35 cm outer, a 30 cm riser and a 20 cm newel, rising to the first floor. The other of these double spirals is accessed by a 53 cm wide doorway and a 93 cm long passage to a 75 cm wide step, a 35 cm outer, a 30 cm riser and a 20 cm newel – exactly the same as its twin. The stair takes these measurements to the first floor, where the double spiral ends, but this spiral continues up a further floor with a 75 cm wide step, a 30 cm outer, a 20 cm riser and a 20 cm newel. For this double spiral to work, even though the stairs stop at different points, some parts of both stairs are required to have the same dimensions. These are the newel and the stair width. The lower steps have a riser

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[672] Pull out plan in the guidebook.
[673] Double stairs.

that is rather high – 30 cm – and have the outer corner of each step trimmed back to make climbing easier. The upper stair can have reduced height risers to make climbing less arduous because it is a single stair. Of interest is that the stairs start in and give access to two different spaces in the Prior's House, thus giving two separate units in the same structure. Further research noted that there was a hatch that permitted the giving and receiving of items to one of the distinct spaces. This was interpreted as restricted access to a dispensary. To create such a stair must have taken great ingenuity and skill, for even today many cannot visualise how it works and so here is a fine example of how spiral stairs are used to delineate private spaces.

At Lilleshall Abbey, Shropshire, there is a spiral leading to a room above the Sacristy, where the church vestments and sacred vessels would be held, and in the south corner of the ground floor is a spiral stair rising to the first floor and giving access to an upper space that probably served as the Treasury for the Abbey.[674] So at Lilleshall, redolent of Lochstädt where the spiral stair restricted access to the precious amber stored in the upper room, spiral stairs gave restricted access to upper chambers containing sacred religious objects or money. At Tintern Abbey, Monmouthshire, there are the usual spiral stairs leading to the leads and there is an anticlockwise stair in the Early Abbot's House that was later used as private apartments. Unfortunately it was too ruined to measure but it is clear that the usual pattern of the spiral stair leading to a private personal space occurs again here.

In summary, having explored a variety of medieval buildings other than castles and noted the presence or absence of spiral stairs, a number of broad conclusions can be reached. Firstly, analysis of and fieldwork on town walls, gates and towers in England and Wales revealed an almost total absence of spiral stairs. Even at the Mill Gate at Conwy, where very unusually there is evidence of comfortable accommodation, the space was not accessed by a spiral. The Irish and the Scottish Tower House was found to offer elite upper-storey accommodation and so again generally contained spiral stairs accessing this elite space, while Irish Round Towers, whatever their true origins or purpose, certainly did not provide elite

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[674] I. Ferris, Haughmond Abbey, Lilleshall Abbey, Moreton Corbett Castle, (London, 2000, reprinted 2008), p. 20.

accommodation and their upper levels were not accessed by spirals. The presence of spirals in Irish and Scottish Tower Houses was highlighted to the external observer by the use of corbelled stair turrets which can be interpreted as a very visible statement of the wealth of private elite accommodation in the tower. While the northern English Pele Towers and the various lightly defended structures of south-west Wales were found to follow very variable styles, so precluding any broad conclusions about the presence or role of the spiral, the use of spiral stairs within elite and non-elite domestic buildings, both in England and northern France, suggested that they did generally play their usual role in accessing and demarcating upper-storey elite space, but that they were not generally employed by lesser members by society, even where there were more private spaces on the first floor. The use of spiral stairs in religious buildings, both parochial and monastic, was found broadly to conform to the theory of spirals already developed, but in this instance spirals could demarcate and permit access to restricted non-domestic spaces, such as the upper levels of church towers, the rood loft and upper chambers containing valuables, as well playing their more usual role of accessing upper storey elite accommodation.

The Structure and Dimensions of Medieval Spiral Stairs

Lastly, and more briefly, this chapter will close by pulling together key information about the physical structure and dimensions of medieval spiral stairs, drawing very heavily upon the fieldwork and the resulting database which is appended here. The database encompasses spirals found in castles, other defences and religious buildings, and it also makes note of those buildings which were found not to contain a spiral. The database is split into two sections: firstly, the data on spiral stairs in castles and other semi-military or defensive structures, and secondly, data on spiral stairs in religious structures. The database and the overview offered here, like the thesis as whole, focuses very much on England and Wales, but also ranges over Ireland, France and some other regions as appropriate.

There are essentially three methods for constructing a spiral stair. The method chosen depends upon whether the step and the newel are in one piece or more and

we can trace a chronological development in this feature and through the three main construction methods. This chronological development reflects increasing knowledge of the spiral and practice in building this type of stair, with architects progressively adopting building techniques which were easier, quicker and cheaper.
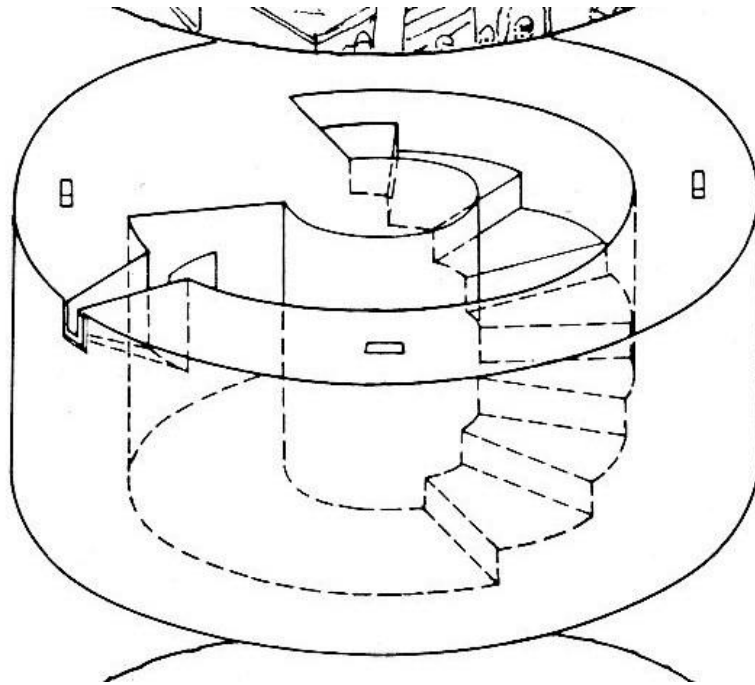
Figure 98. Trajan's Column: Jones's Drawing.[675]

The earliest spiral stair discovered by this research is in Trajan's Column. The technique employed here has already been discussed in detail towards the end of Chapter 2, but to recap, the step and newel were carved from a single massive block of stone with fourteen steps included in each single section or drum, which also included the outer wall of the column (Figure 98). This is a time-consuming process and also presented a great physical challenge in raising these pre-cut drums into place. Furthermore any faults in the stone, in this case marble, would cause severe problems to the structure.

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[675] Jones, Principles of Roman Architecture, p. 165.

Figure 99. Aachen, Charlemagne's Chapel: Spiral Stair.
Illustrating the wide north spiral stair and its vaulting.
Photographer: C. Ryder.

Although this first style continued to be very selectively in the later Roman period, by the time spirals were being employed by Charlemagne and by the Anglo-Saxons, architects had moved on to the second of the three main building techniques. In this technique, spiral stairs were constructed on top of a spiral vault, created using a temporary wooden armature to give it its form. This method is time consuming but it does permit the use of random stone for construction material rather than the more expensively cut stone drums (Figure 99). It is in this second technique that we see the use of separate steps and newels. This technique is found in several Anglo-Saxon church towers, but appears rarely, if ever, to have been employed in building stone spirals in medieval castles. However, towards the end of the medieval period when a few castles were constructed in brick rather than stone, the use of much smaller building blocks necessitated a revival of this earlier technique, found in late English castles such as Caister and Kirby Muxloe, Leicestershire (Figure 100).

Figure 100. Kirby Muxloe: Brick Spiral Stair.
Illustrating brick vaulting supporting the brick spiral stair.
Photographer: C. Ryder.

The third technique, which became the norm in medieval castles, may have been developed at a time when spirals were becoming much more common and so needed to be built in larger numbers, more quickly and cost-effectively. This involved carving a single step including its newel as one piece, sometimes said to resemble the shape of a keyhole or an upper case letter 'J' as seen from above, which would then be stacked on top of each other and the outer edge of the step keyed in to the wall (Figure 101). Due care was needed to ensure that the newels were accurately aligned and plumb and that each step slightly overlapped the one below. By introducing the one-piece design it would be possible to have the steps cut to the same size against a template, perhaps even before they were transported to the construction site. This technique continued to be used in post-medieval stone spirals, including those employed in castles which had a post-medieval active life or which were significantly repaired and renovated, so due care was taken in the fieldwork to distinguish between medieval and post-medieval spirals built in this way.

Figure 101. Nercwys, Tower: Top of the Spiral.
Illustrating key-hole shaped stones with locating hole in the middle of the newel.
Photographer: C. Ryder.

From the database it is clear that the surviving spiral stairs were constructed in very different sizes and to different dimensions. From over 250 spiral stairs observed in castles and other defensive structures, the narrowest at 58 cm was found at Ashby de la Zouch, Leicestershire, in the chapel and the widest at 186.5 cm is at Tour Jean sans Peur, just larger than the lower Keep at Middleham at 180 cm. The narrowest outer is at Ballintober, Co. Roscommon, in the Northwest Tower at 20 cm and the largest outer at 143.5 cm is again at the Tour Jean sans Peur, with the next largest at Raglan Great Tower at 58 cm. However, most outers are within the 20 to 60 cm range. The smallest riser is at Tully Castle, at 13 cm and the largest riser is 35 cm again at Ballintober Northwest Tower. However, most risers fall within the 15 to 25 cm range. This would indicate that the Ballintober stair was quite hard to climb because of its high and narrow steps. The narrowest newel is 12 cm at Chepstow Middle Bailey and the widest at 48 cm is at the north-west corner of Hedingham Castle Keep. However, most are between 13 and 28 cm. Of the stairs measured and where their starting point is clear, 6 went up from the basement, 124 started at the ground floor, 52 started at the first floor, 9 at the second floor and 3 at the fourth floor – those at the Eagle Tower Caernarfon

and at Dunstanburgh. Of the stairs measured, 51 went to the roof from the basement or first floor. In terms of direction, and again excluding those very ruinous stairs where their original direction is now in doubt, there are 149 rising clockwise and 62 anticlockwise. For the stairs that had doors, the narrowest doorway is at Kenilworth Strong Tower, Warwickshire, with a width of 35 cm and the widest doorway is at Beaumaris Middle Tower North at 200 cm. By no means all spirals had their own passages, but of those that did, the shortest passage is at Dunstanburgh Constable's Tower at 68 cm and the longest at Hedingham at 208 cm.

This detailed fieldwork on the spiral in medieval castles produced a wealth of evidence about size and dimension, but did not reveal any clear chronological or geographical developments in these aspects. In other words, no general trends could be found suggesting that spiral stairs grew either larger or smaller in the course of the medieval period or that French spirals were physically different from English spirals and so on. The fieldwork on castles also revealed a clear preponderance of clockwise spirals, though with a significant minority of anticlockwise spirals: roughly 70% were found to be clockwise and 30% anticlockwise. It is difficult to determine why clockwise orientation predominates and, despite the myth that these stairs aided military defence by sword-wielding defenders, both the role and position of spirals in castles, which, as this thesis has argued, had a much stronger domestic and status role than a military function, together with the significant presence of anticlockwise spirals make this most unlikely.

Spirals were observed and measurements taken at a range of other buildings, in the main medieval religious structures, but encompassing a few secular sites, including the palace of Bovolo, Venice. Of the 96 spiral stairs observed at these sites, some could not be measured because of difficulties of access or were very ruinous. Of the rest, 56 rise clockwise and eighteen anticlockwise, a slightly greater preponderance of clockwise over anticlockwise compared to spirals in castles but not greatly so. Castle Acre Priory had the three narrowest spiral stairs which were observed, at 60 cm, while the widest noted is at St. David's Bishop's Palace, Pembrokeshire, at 192 cm. The smallest outer is at Haughmond Abbey,

Shropshire, at 20 cm and the largest at 73 cm at Rievaulx Abbey, North Yorkshire in the Later Abbot's House. Aachen Chapel has the lowest riser at 14 cm and the Early Abbot's House at Rievaulx Abbey the tallest riser at 45 cm. The narrowest newels were observed at St. David's Bishop's Palace at 11 cm and the widest at Aachen Chapel at 135 cm. However, most are in the 15 to 20 cm range. The dimensions of the Aachen Chapel spiral stair are distinctive, with its long outer and low riser, creating a stairway which almost forces one to rise or descend slowly and perhaps in a more stately and processional manner.

In England, Wales and Ireland all the spiral stairs observed were contained in fairly solid spaces, with no more than fairly small slit windows to provide light, sometimes rising from the ground floor but sometimes corbelled out higher up the building. However, on mainland Europe there are spiral stairs constructed within much more open towers, which are pierced by large open arcading and are often ornately decorated. Thus people using those spirals could be viewed from outside and they in turn could view the open spaces beyond the tower, suggesting that these spirals were designed with display in mind. It is also notable that these spirals generally had much wider steps and lower risers than the average, again perhaps encouraging a slower, stately procession. Examples of these are Bovolo (Figure 102), Saumur, Tour Jean sans Peur (Figure 103) and what is now the Musée Cluny (Figure 2).

Figure 102. Venice, Bovolo Staircase.
Illustrating the wide steps and broad newel and demonstrating how highly visibility user of the stair would be.
Photographer: C. Ryder.

Most spiral stairs are plain. An exception is the ceiling of the spiral at Tour Jean sans Peur, which has a carved ceiling at the entrance level to the great hall. It is worth noting that most refurbishments of buildings in modern times, such as Dover Castle or Saint Chapelle, Paris, have left the spiral stairs unpainted whilst the main rooms have been restored in a highly decorated manner. This should be challenged. It would seem reasonable that the spiral as a threshold or transition space would be decorated to signify the place and person to which or to whom it led, with spiral stairs to less elite spaces less well or differently decorated to aid the visitor. More research into this would be useful.

Figure 103. Tour Jean sans Peur: Ceiling at *Grande Salle* Level.
Illustrating the decorative pattern to promote the lineage of the owner.
Photographer: C. Ryder.

Finally, turning to the issue of the number of spirals found at a site, those castles which possessed a single spiral were either constructed early in the medieval period or are associated with less wealthy lordships. Loches, for example, has only one spiral stair in the Keep, as do the poorer *manoirs* in Brittany; in England, Peveril Castle, holding a small lordship in a region which, despite its mineral resources, was not very wealthy at this time, has a single spiral. In the later castles and those of English kings, there are usually several spiral stairs. This reflects the need for show, for giving space to prominent members of the household who

merited their own private space and for distinguished guests. Consideration should also be given to the space for the constable, who would represent the owner in his or her absence and live in elite rooms in the castle. Similarly, multi-household castles such as Conwy or Caernarfon have several sets of spiral stairs that are used to access each individual household within the castle.

Although there appear to be no instances of a double spiral within a castle, at a very small number of sites a double spiral has been detected and its presence can enhance our understanding of the role of spirals within castles. Whiteley's short but highly significant work on double spiral staircases notes that 'no staircase can be judged without considering its relationship to the rest of its building and the role and function for which it was designed'.[676] St. Editha's Church, Tamworth, has one such double spiral stair constructed in the fourteenth century. One access is from the church interior and the other is from the exterior. The interior door gives access to a spiral stair that rises to the ringing chamber, belfry and the two eastern turrets, whilst the exterior door gives access to a room in the north-west turret via a corridor that bypasses the ringing chamber. Whiteley lists eight other non-military buildings where the double spiral staircase is employed and states 'it is possible to identify the individual role and function of the separated flights' in five of the eight named buildings.[677] Although most double spiral stairs are to be found in religious buildings, there are examples of the double spiral used in other types of buildings, for example in the fourteenth-century Château at Saumur, where one flight leads to the look-out tower and the other – shorter – flight joins 'two levels of an important lodging'.[678] The non-religious structures of Tour Saint-Nicolas (after 1372) and La Châtelet also utilised double spiral stairs to separate the flow around the structures according to status. The double spiral was difficult and complex to construct and its inclusion within a building must have been for a specific and important purpose. In the examples given by Whiteley outlined here, we can see that the double spirals were being used to give separate and discrete access to selected upper storey space, in some cases restricted spaces, such as the ringing chamber, in others, elite domestic space. These, the most intricate medieval spirals which survive,

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[676] Whiteley, 'Double Staircase', p. 1.
[677] Ibid., p. 2.
[678] Ibid.

therefore confirm and strengthen the interpretation of spirals, in castles as well as in other buildings, which has been presented in this thesis, with the spiral stair denoting and demarcating a move to private or restricted space. This interpretation will now be underscored in the concluding chapter.

CHAPTER 6 – CONCLUSIONS

This thesis has addressed a hitherto neglected area of castles studies – the spiral stair. It has explored the origins, evolution, placing, structure, role, significance and meaning of spiral stairs in medieval stone castles between 1066 and 1500, so covering the rise, zenith and decline of the castle in England and Wales. Although focussed upon England and Wales, it has had a wider geographical spread across Ireland, Scotland, Europe, the Middle East and Japan with particular regard to castles and on even wider when searching for the origins of the spiral stair, encompassing the whole globe. The date range has also been extended, both much earlier than 1066 when searching for these origins and very selectively beyond 1500 when exploring how the spiral was used in the later medieval and early modern periods.

Castle studies has had a number of focuses over the centuries, with research, discussion and debate on their origin, their presence in England before 1066 and their essence, whether military, domestic or as status symbols; more recently, much of the work on castles has concentrated on their place within the wider landscape, although other specialist areas, such as polioretics or the study of sieges, continue to attract attention. It can be argued that this recent trend for the castle to be seen from afar and in its wider landscape has been to the detriment and neglect of the interior landscape of the castle. This thesis makes step, albeit a small step and hopefully the first of many, to bring the interior of the castle into research and discussion; to look at individual items and features within the medieval castle; to consider their placing, access and meaning within the wider medieval world; and, through that, to increase our understanding of it.

This thesis is based upon extensive fieldwork, particularly in England and Wales, but also in Scotland, Ireland, France, Belgium, Germany, Switzerland, Italy, Spain and Majorca, Greece, Rhodes, Egypt, Morocco, Thailand, Singapore, Hong Kong, China and Japan, both in the quest to discover the origins of the spiral stair and to record the dimensions of the spiral stairs found, details of their locations and physical arrangement. This fieldwork was supported through extensive research

into the primary and secondary sources available mainly in English but with some in French and a few in Italian and German, encompassing both the literature and the arts of the medieval period, and moving beyond that in the search for material that may add to the debate, in particular on architectural symbolism and architectural theory.

At the outset, this thesis stressed that strictly contemporary sources for medieval spiral stairs are very limited, for the surviving literary, artistic and illustrative material from that period contain very little information about the spiral in theory or in practice. Accordingly, and despite problems which were acknowledged and discussed in the opening chapter, this thesis has relied very much upon the surviving architectural remains of spirals with medieval castles and other buildings. These have been the main primary sources upon which this thesis has drawn heavily and repeatedly. However, principally in the first chapter, those published works which do make reference to medieval spiral stairs or which discuss and interpret them in some detail were carefully surveyed in order to provide a context for this new study, which to some extent builds on the work of scholars such as Viollet-le-Duc, Mesqui and Whiteley. The last two, in particular, have developed a theory which places the spiral stair within medieval elite society, mainly in a French context, and often links it to a segregated and elite role, whether exploring the single spiral stair or the more specialist double spiral. Other scholars, including Vergnolle, Akkari, Templer and Baldwin Smith enrich the context through their work on specific aspects of stairs and spirals and on symbolism in architecture.

The search for the origins of the spiral stair, undertaken in Chapter 2, encompassed the whole globe and stretched back several millennia. The use of vectoring enabled this study to narrow down the areas and times to be explored and thus meant that not every country and society needed to be discussed in detail here. The search eventually returned to Europe and came to focus on Roman imperial period. Concentrated efforts revealed a very limited use of the spiral stair in the late empire, but the trail led us back to the earlier empire, through Santa Constanza and the palaces of Galerius and Diocletian a little earlier, to Trajan's Column, which is here presented as the earliest reliably proven use of a true spiral stair.

Other earlier spiral stairs at the Temple of Bel at Palmyra and at Temple A, Selinunte, were both discounted for different but substantial reasons. The search for the first spiral stair in a castle was less wide-ranging and focussed on France, where it is accepted that the first castles were constructed. Using published sources and fieldwork, a conclusion was reached that the first spiral stair to appear in a castle was at the keep or donjon at Loches, where it linked the more public level to the private elite space of the lord.

Whilst undertaking the fieldwork, it was found that the then diagrammatic methods of representing castles were not suitable for this thesis and a new method was devised. In Chapter 3 the thesis addressed the spatial analysis methods employed by Faulkner, Mathieu, Dixon and Richardson and offered examples of their diagrams. It then drew conclusions about their methods and introduced the new method devised for this thesis that can be expanded and adjusted to suit the need of many approaches to castle studies. The new method was then employed to create new diagrams of the White Tower, the great tower at Castle Rising and Hedingham Keep and, based upon them, an analysis of internal movement around the structures was given, supported by an interpretation of each building.

The fourth chapter dealt directly with the surviving physical evidence of spiral stairs in selected groups of castles that include great towers, native-Welsh castles, Edward I's castles in Wales, other English enclosure castles and finally castles which have no spiral stairs. From the extensive surveys, a picture emerged of spiral stairs acting as a link and a marker for access to the private space of the lord or another elite person and later as a marker of the movement from public to private space. The great towers at Castle Rising, Helmsley, Hedingham and the much smaller one at Peveril were explored in search of a pattern of spiral stair usage within the great towers, that is the same as or different from other groupings. The Welsh castles or castles of the native Welsh – Dolbadarn, Criccieth and Ewloe – were similarly explored and a discussion developed about why, other than at Dolbadarn, the Welsh did not employ spiral stairs; much was made of the difference between Anglo-Norman and English society on the one hand and native Welsh society on the other being a driver for the difference, and in this the two towers at Ewloe were further analysed. Edward I's castles in Wales,

contemporaneous with the Welsh castles and yet very different from them in scale, design and use of the spiral stair, were analysed, with Flint, Rhuddlan, Conwy, Caernarfon, Harlech, Denbigh and Beaumaris employed as detailed examples. Noted here was not only the large number of spiral stairs employed to give access to elite space but also some intriguing indicators of the use of spirals, such as the freestanding tower at Flint and the spirals accessing the king's chapels at Conwy and Beaumaris. Old Sherborne and Farleigh Hungerford were employed as examples of enclosure castles and although a pattern had emerged in the great towers and Edwardian castles regarding the use of spiral stairs, this was not so clear cut initially here. Further investigation revealed that the separation of public from private space in enclosure castles was horizontal in the two-storey structures, yet the higher structures still employed spiral stairs in the same manner as the other, earlier, castles described, so supporting the general theory. Finally, castles without spirals were investigated. Beeston Castle was described and its lack of spiral stairs attributed to the fact that it was more of an assembly point for incursions into Wales (perhaps supplementary to Chester, which certainly did play this role on occasions) than a defended home of a lord, though it is also possible that it was simply never completed. Stokesay was included as an example of a defended manor raised by a self-made family with social aspirations who copied many aspects of lordship in their structures but not the spiral. From all this, the idea that a spiral stair was a demarcator of public and private space in the home of a lord was strongly supported and evidence.

This idea was tested further in the following chapter, where a wider numerical and geographical approach was taken, firstly in castles and then on to other structures, both elite and non-elite, to discover if the spiral stair was employed there. Initially the non-Welsh castles in Wales were investigated and a conclusion reached that spiral stairs were commonly used in them and this was supported by further discussion of other castles in England that presented some problems to the theory, such as Richmond. The lack of spirals at Château Chillon was also addressed, with the conclusion that this was a state castle and not a private residence. The German castle, which served the same purposes as its English counterpart, was considered with its *palas* and *bergfried* and here it was seen that although other parts of the castle would employ spiral stairs much as English castles did, the *bergfried* did not

have stairs and is taken to be a symbolic marker of status that can be seen from afar and not elite private space for living. In the Hanseatic League castles, although not dwellings of a lord, were seen to employ spirals as a method of accessing restricted space. A broad sweep of the crusader and earlier castles of the Mediterranean was made and although few spiral stairs were to be found in these castles, it was clear from the circumstances that many of them were small and lived in by predominantly male societies and demarcation of private space was not really an issue. Japanese castles were revisited to confirm the absence of spiral stairs, with private space demarcated by sliding screens.

Communal defences such as the Majorcan towers and English and Welsh town walls were investigated and such non-elite structures were found to be almost exclusively without spiral stairs. The Pele Towers of northern England and the towers of south-west Wales were very inconsistent in their employment of spiral stairs and this appears to be as a result of a lack of restraint in the control of the building design, with builders taking advantage of this to construct buildings with noble features. The status of spiral stairs appears important to the builders of the tower houses of Ireland and Scotland, who did employ spirals and in a manner that advertised their presence, with corbelled stair turrets and this, it is argued, underlined the status of the owner. In Brittany, a similar residence was being constructed by lesser nobles, who employed one or more spiral stairs in their manors as a matter of course to signify that they were of the nobility. Peasant dwellings did not employ spiral stairs, even when they were two storeys high and although there appears to have been no law against this, it just did not appear to happen. However, ecclesiastical dwellings did frequently employ spiral stairs from the late Saxon period, when the crude separate newel and step are found in some churches, although there are many more churches with towers that do not have stairs. Medieval abbeys and churches frequently used spirals stairs to access the higher galleries and leads and this again, it was argued here, was a means to denote restricted access too.

Chapter 5 concluded by examining aspects of the physical structure and nature of the spiral stair, particularly but not exclusively in medieval castles. It was noted that there were no clear chronological or geographical patterns in the very

disparate dimensions of medieval spiral stairs. Equally, it was noted that both clockwise and anticlockwise spirals were common in castles and in other medieval buildings and that although clockwise orientation predominated, there was a very substantial minority of anticlockwise spirals. Again, no chronological, geographical or functional patterns were discernable and the evidence points to negative rather than positive conclusions. Thus, the suggestions that a particular orientation was adopted for military and sword-wielding purposes, for navigation at all times or specifically during the night, for gender space demarcation or for rank and status demarcation amongst those entitled to use them do not hold true. Frustratingly, no new interpretation regarding orientation of the spiral stair was discerned in the course of this research and can be offered here. Similarly, in this chapter and earlier in the thesis it was noted that some spiral stairs in England and Wales, Scotland and Ireland formed external features or were at least very conspicuous from outside the building – the semi-circular or circular stair turrets attached to some Anglo-Saxon church towers, the corbelled out spirals in Scottish and Irish Tower Houses, the very visible stair turret at Skenfrith, the very prominent stair turrets at the rear of the main gatehouse of Harlech Castle and so forth. However, as this brief list of examples demonstrates, externally visible spiral staircases – that is, spirals whose position and enclosing tower or turret may be viewed from outside the building – are found at the very beginning of the history of the spiral in England and no clear chronological movement from externally invisible to externally visible can be discerned.

Although space precluded any detailed discussion of the later development of the spirals within the main chapters, it is worth noting here that in the later part of the medieval period, the French spiral stair took on a different location to the English. There was a move in France and other parts of Europe to externalise and decorate the stone spiral stair, so that it became an architectural feature of the château and a focus for display – very different from the plain spiral turrets or towers of Anglo-Saxon churches and of some English castles – whilst in late medieval England the move from the castle to the manor saw the employment of a highly decorated wooden stair in the hall of the house; the spiral stair remained in use, now as a service stair and thus still signalling private space, but no longer elite space. An example of this is Speke Hall, Liverpool. At the same time, in fourteenth- and

fifteenth-century England and Wales, a small number of new castles were being built, often described as show, sham or cult castles. These castles, often built by the newly arrived elite, emphasised domestic luxury and are also often characterised by profuse use of spiral stairs, as at Bolton Castle, Ashby de la Zouch and Raglan, at all of which fieldwork was conducted, the fruits of which appear in the appended database. It might be suggested that these castles of the nouveau-riche make such extensive use of spirals to help emphasise the elite status of their owners. Later, in the Victorian era, within replica castles of the industrial barons, the spiral stair remained an essential part of the design and continued its role as a demarcator of private space.

The spiral stair is one element of many that make up and define a castle. Created in the early first century AD and increasing in popularity for elite status structures, reflecting on the Roman past, in Charlemagne's reign, when the empire fell apart, spiral stairs were adopted within the donjon and later the castle which developed as a method of holding territory and status. The spiral stair was rapidly employed to demarcate the private space of a lord. This generally holds true throughout the medieval period and becomes a significant embellishment in France and, a smaller but still obvious symbol, in Ireland and Scotland with the corbelled stair turrets. There is with little doubt a strong case for considering the spiral stair as a symbol of lordship and later elite status and this should be considered as an essential clue to defining the castle.

This thesis is certainly not the final word on medieval spiral stairs or on spirals within castles and limitations of space have precluded detailed discussions of some areas. Thus, the new diagrammatic method put forward in Chapter 3 could be applied much more widely, the detailed measurements of staircases presented in Chapters 4 and 5 could be taken further and the 'afterlife' of the medieval spiral in the decades and centuries after 1500 merit further work. More broadly, it is hoped that this study will encourage further work into other smaller and often seen as insignificant features of the castle and that the interior of the castle will be considered a landscape that meets with the exterior landscape at the castle gate. It is by looking at the castle along this long spectrum that we will gain deeper understanding of it. Beyond this, it is hoped that this study will encourage the

removal of the shackles of today's national boundaries that did not exist in medieval times and will stimulate fresh work across those borders to the boundaries of the medieval world for comparisons and contrasts to be drawn and, with that, the challenge of working in different languages and drawing from different specialisations to be met and overcome.

APPENDIX A: DATABASE OF MEASUREMENTS

Appendix A contains a database of measurements of spiral stairs for castles, defended buildings, ecclesiastical buildings and others taken as part of the fieldwork for this thesis.

Castles

Location	C/A	Width	Outer tread	Riser	Newel	Newel Shape	Start	End	Door	Passage	Slits	Roof
Abergavenny Castle												
SW Tower	A	90	35	23	?	?	0	3	?	?	Y	?
Gate N of SW Tower	A	68	39	23	15	O	0	?	75	100	?	?
Acton Burnell												
SW Corner	C	?	?	?	?	?	1	3	?	?	Y	Y
Arundel Castle												
Gatehouse	C								Y	Y	Y	Y
Inner Gate	C											
Inner Gate	A											
Ashby de la Zouch												
Kitchen	C	?	?	?	?	?	0	2	110	Y	Y	Y
Hastings Tower - lower	C	115	32	24	14	J	0	5	103	Y	Y	Y
Hastings Tower - upper	C	99	35	23	14	J	4	5	N	N	Y	Y
Chapel	C	58	40	20	15	J	0	2	73	Y	Y	Y
Baconsthorpe												
Inner Gate	A	80	?	15	?	?	0	R	85	Y	Y	Y
W Mural Tower												
Ballintober Castle												
NW Tower	C	105	20	35	18	O	0	3	88	140	Y	N
Ballymote Castle	N											
Barnard Castle												
Mortham Tower	C	?	?	?	?	?	1	?	?	?	?	?

CASTLES

Location	C/A	Width	Outer tread	Riser	Newel	Newel Shape	Start	End	Door	Passage	Slits	Roof
Beaumaris												
S Gatehouse W side	C	99	?	?	20	O	0	2	?	Y	?	?
N Gatehouse W side	C	104	35	17	20	O	0	3	?	Y	Y	Y
SW Tower	C	104	35	20	22	O	0	?	?	Y	Y	Y
Gate Next the Sea	C	?	?	?	?	O	0	1	?	Y	N	?
Middle Tower - N	A	?	?	?	?	?	0	3	?	?	Y	Y
Middle Tower - S	A	?	?	?	?	?	0	3	?	?	Y	Y
NW Tower	A	?	?	?	?	?	0	3	?	Y	Y	Y
N Gatehouse E side	?	?	?	?	?	?	0	3	?	Y	Y	?
Rusticoker Tower	A	?	?	?	?	O	0	3	?	Y	Y	Y
Pillardesbathe Tower	C	102	?	19	?	O	0	3	?	Y	Y	Y
S Gatehouse E side	?	?	?	?	?	?	0	2	?	Y	?	?
Llanfaes Gate	C	?	?	?	?	O	0	1	?	N	N	N
E of Chapel	A	79	?	18	?	O	1	2	?	N	Y	Y
Beeston	N											
Bolton												
Wine Cellar	A	88	30	20	?	O	0	3	?	N	Y	Y
Mid-North Wall	A	168	40	23	?	?	0	1	118	N	N	?
East Curtain	A	?	?	?	?	?	0	3	?	?	?	Y
Solar to Bedrooms	C	90	40	20	18	O	1	2	93	Y	Y	N
SW Tower	A	123	42	20	?	O	1	2	73	N	Y	Y
W of Great Hall Door	?	?	?	?	?	?	?	?	?	?	?	?
SE Tower	A	110	?	?	?	?	?	?	105	?	?	?

Location	C/A	Width	Outer tread	Riser	Newel	Newel Shape	Start	End	Door	Passage	Slits	Roof
Bowes Castle	C	158	35	19	?	?	0	2	200	188	Y	?
Bramber Castle	N											
Brough Castle	N											
Caernarvon												
NE Tower - lower	A	93	30	18	18	O	0	1	N	Y	Y	N
NE Tower - upper	A	65	28	18	18	O	1	2	N	N	Y	Y
Black Tower - lower	C	108	35	18	18	O	0	1	78	Y	Y	N
Black Tower - upper	C	75	25	18	18	O	1	2	N	N	Y	Y
Chamberlains Tower - lower	C	100	40	20	18	O	0	3	?	Y	Y	N
Chamberlains Tower - upper	C	73	30	18	18	O	3	R	N	N	Y	Y
Queens Tower - upper	C	76	30	20	18	O	2	3	N	N	Y	Y
Queens Tower - lower	C	103	45	18	18	O	0	2	90	Y	Y	N
Eagle Tower - lower	A	98	35	20	18	O	0	2	90	Y	Y	N
Eagle Tower - upper	A	78	35	20	18	O	2	4	N	N	Y	Y
Eagle Tower - roof	C	73	40	20	18	O	4	5	78	Y	Y	Y
Well Tower -lower	A	90	38	18	18	O	0	2	90	Y	Y	N
Well Tower - upper	A	90	48	23	18	O	2	3	N	N	Y	Y
Kings Gate	C	105	35	20	18	O	0	?	N	N	Y	N
Granary Tower	C	83	33	20	19	O	0	4	115	Y	Y	Y
Queens Gate - upper	C	80	28	20	18	O	2	3	N	N	N	Y
Caerphilly												
Outer Main Gate N side lower	C	125	45	20	18	O	0	1	110	Y	Y	N
Outer Main Gate N side upper	C	120	25	19	18	O	1	2	N	N	Y	Y
NE Tower	A	108	30	20	18	O	0	2	105	Y	Y	Y
NW Tower	C	105	30	17	20	O	0	2	95	Y	Y	Y

Location	C/A	Width	Outer tread	Riser	Newel	Newel Shape	Start	End	Door	Passage	Slits	Roof
Caister												
Tower G TO 1F		93	45		INTRAMURAL CURVE NOT NEWEL							
Tower 1F TO ROOF	C	108	28	25	MISSING	?	1	3			Y	Y
Carew												
Gatehouse	C	92.5	25	22.5	15	O	1	R	100	100	Y	Y
Chapel Tower	C	112.5	30	17.5	17.5	J	0	1	N	Y	Y	N
Chapel Tower	C	112.5	32.5	17.5	17.5	J	1	3	N	N	Y	Y
NW Tower	C	117.5	37.5	15	17.5	J	0	3	95	112.5	Y	Y
SW Tower	C								92.5	122.5		
SE Corner Great Hall	A	107.5	27.5	20	?	?	0	?	155	0	Y	?
Castle Rising												
Gatehouse	C	68	30	15	14	J	0	?	78	Y	?	?
Forebuilding GF	C	95	35	15	25	O	0	1	100	Y	N	N
Forebuilding 1F	C	103	35	15	25	O	1	R	63	N	Y	Y
Chepstow												
Pantry	C	73	30	18	14	J	0	2	70	Y	Y	?
Martens Tower	C	110	38	20	18	J	0	3	115	Y	Y	Y
SW Tower	C	98	43	18	18	J	0	2	N	N	Y	Y
Great Hall	C	108	35	18	18	J	0	2	90	Y	Y	Y
Middle Bailey	C	73	25	17	12	O	0	1	70	Y	Y	?
Great Tower	C	?	?	?	?	?	1	3	N	Y	Y	Y
East Curtain	C	?	?	?	?	?	1	2	?	Y	Y	?
Christchurch												
Great Hall	C	73	38	20	15	O	0	1	73	Y	Y	?

Location	C/A	Width	Outer tread	Riser	Newel	Newel Shape	Start	End	Door	Passage	Slits	Roof
Cilgerran												
West Tower	A	82	35	23	20	J	0	1	N	N	Y	N
North Tower	C	97	37	23	23	J	1	3	N	N	Y	Y
East Tower	C	105	40	21	23	J	0	3	108	130	Y	Y
Clun												
Great Tower	?	?	?	?	?	?	?	?	?	?	Y	?
Conisbrough	N											
Conway												
North-West Tower	C	100	40	18	18							
Stockhouse	C	ruin										
Chapel Tower	C	110	39	19	18		1	R				
?												
Kitchen	C											
SW Tower	C	110	40	18	18							
Bakehouse	A	105	28	13	20							
E Kings	C	110	38	18	19							
W Kings	C											
Prison	C	108	33	18	18		1	R				
Corfe												
Plukenet	C	?	?	?	?	O	0	1	?	N	?	Y
Butavant	C	80	35	15	18	O	0	1	N	N	Y	N
Keep	C	?	?	?	?	?	1	2	?	?	?	Y
Criccieth	N											
Deganwy	N											

Location	C/A	Width	Outer tread	Riser	Newel	Newel Shape	Start	End	Door	Passage	Slits	Roof
Denbigh												
Great Kitchen Tower	C	108	43	23	17	O	0	?	108	Y	?	?
Red Tower	C	115	50	18	17	O	0	?	75	Y	?	?
White Chamber Tower	C	?	?	?	?	?	0	?	?	?	?	?
Twixt Postern & Green Chambers	C	90	45	23	N	N	0	?	60	Y	?	?
Bishops Tower	A	120	30	17	N	N	0	?	120	Y	?	?
Dolbadarn												
Keep - lower	A	85	23	15- 23	N	N	1	2	?	Y	Y	N
Keep - upper	C	64	24	24	N	N	2	R	N	Y	Y	Y
Dolwyddelan	N											
Donegal Castle												
SE Corner	C	85	33	15	18		0	2	Y	Y	Y	N
Donnington Castle												
Gatehouse	A	72	30	22	N	N	0	?	N	N	?	?
Dunstanburgh												
Gatehouse SW	A	140	44	18	19	0	0	3	133	175	Y	Y
Constables Tower	C	83	38	23	17	D	0	2	N	68	?	Y
Gatehouse SE	C	128	48	20	20	0	0	?	130	165	Y	?
Edlingham Castle												
Solar Tower NW	C	90	30	20	20	0	1	3	65	125	Y	Y
Hall house NW	C	108	40	18	15	0	0	?	85	133	Y	?
Ewloe												
None												

Location	C/A	Width	Outer tread	Riser	Newel	Newel Shape	Start	End	Door	Passage	Slits	Roof
Farleigh Hungerford												
West Gate - W side	C	75	33	18	15	O	0	?	100	Y	?	?
Priests House	C	?	?	?	?	?	0	1	N	N	Y	N
SE Tower	C	?	?	?	?	?	2	3	?	?	Y	Y
Flint												
SW Tower	A	?	?	?	?	?	0	3	?	Y	Y	Y
NW Tower	A	?	?	?	?	?	0	3	?	Y	Y	Y
NE Tower	A	?	?	?	?	?	0	3	?	Y	Y	Y
Donjon	C	145	49	18	28	O	1	?	Y	Y	?	?
Goodrich												
Chapel Tower	C	125	40	19	27	O	0	4	100	Y	Y	Y
Keep	C	65	20	23	23	O	1	3	70	N	Y	Y
SE Tower joins Keep	C	73	28	18	24	O	1	?	N	N	?	?
Grosmont												
Gatehouse - lower	C	?	?	?	?	?	0	1	?	Y	Y	N
Gatehouse - upper	C	?	?	?	?	?	2	R	?	N	Y	Y
Hall Block	A	?	?	?	?	?	0	1	?	?	?	Y
Harlech												
NW Tower - Lower	C	110	47	15	22	O	0	1	100	Y	?	N
SE Gatehouse	C	124	45	15	25	O	0	3	83	Y	Y	Y
NE Gatehouse	C	?	?	?	?	?	0	?	83	Y	Y	?
SW Tower	C	?	?	?	?	?	1	2	100	Y	Y	Y
Next Great Hall Passage	C	85	?	?	?	?	1	?	50	N	?	?
Hedingham Castle												
Keep NW corner	C	153	48	20	48	0	0	3	100	208	Y	Y

Location	C/A	Width	Outer tread	Riser	Newel	Newel Shape	Start	End	Door	Passage	Slits	Roof
Helmsley												
East Tower - NW Corner	C	93	35	23	18	O	-1	0	88	N	N	N
East Tower - N Side	C	?	?	?	?	?	0	2	?	?	N	Y
Old Hall	A	80	30	23	18	O	-1	0	78	Y	N	N
West Tower	?	?	?	?	?	?	1	3	?	?	?	Y
Herstmonceaux		inaccessible										
Hole Bastle	N											
Kenilworth												
Strong Tower	A	80	45	23	15	O	-1	3	78	N	Y	Y
Right of Lunns Tower	A	83	40	25	23	O	0	3	83	N	Y	Y
Saintlowe Tower - 1	A	80	33	20	20	O	0	?	80	Y	Y	?
Saintlowe Tower - 2	A	81	48	23	18	O	0	?	?	N	Y	?
Next Gaunt's Tower	C	83	35	20	N	N	0	?	?	N	?	?
Keep	C	115	45	20	?	O	1	3	?	N	Y	Y
Great Hall - NE corner	C	?	?	?	15	?	1	?	?	N	?	?
Strong Tower - 1	C	85	35	23	15	O	1	?	?	Y	?	?
Strong Tower - 2	A	81	46	23	15	O	-1	3	N	N	Y	Y
Gaunt's Tower	C	?	?	?	?	?	1	4	?	N	Y	Y
Water Tower	C	?	?	?	?	?	?	?	?	?	?	?
Kirby Muxloe												
N of Gatehouse	A	120	46	20	24	0	0	2	107	170	Y	?
S of Gatehouse	C	120	46	20	24	0	0	2	95	165	Y	?
West Tower		no access										
Langeais												
Keep NW Corner	N											

Location	C/A	Width	Outer tread	Riser	Newel	Newel Shape	Start	End	Door	Passage	Slits	Roof
Lewes Castle												
Keep	C	78	40	20	?	?	0	2	Y	Y	Y	Y
Barbican lower	C	85	40	23	15		0	1			Y	N
Barbican upper	C	78	33	23	15		1	2			Y	Y
Llawhaden												
Right of Gate	C	85	30	18	?	?	1	3	97	N	Y	Y
Free standing Tower	C	100	?	27	?	?	0	1	97	112	Y	N
Undercroft near kitchen	C	102	30	20	18	J	0	?	77	105	?	?
Undercroft beneath Hall	C	102	32	22	17	J	0	?	85	115	Y	?
Loches												
Donjon upper	C	85	28	19	15	O	2	3	N	Y	Y	N
Loughor Castle												
Loughor Castle	C	70	32	22	?	?	?	?	?	?	?	?
Ludlow												
Keep	C	90	30	20	17	J	0	3	88	Y	Y	Y
Mortimer's Tower - lower	C	68	30	20	14	J	0	1	93	N	Y	N
Mortimer's Tower -upper	C	73	28	18- 23	14	J	1	3	N	N	Y	Y
Pendover Tower	A	87	35	23	20	J	0	2	97	Y	Y	?
Judges Lodgings	C	108	?	?	?	?	0	3	83	Y	Y	?
NW Wall	?	?	?	?	?	?	1	2	?	N	?	Y
Council Hall	C	95	35	18	20	J	1	3	115	Y	Y	Y
14th C State Apartments	C	?	?	?	?	J	1	?	N	N	?	Y
Manorbier												
New Solar Block	C	95	30	22.5	O	N	1	2	N	N	N	N
New Solar Block	C	75	22.5	25	O	N	0	1	N	N	N	N
Manorhamilton	N											

Location	C/A	Width	Outer tread	Riser	Newel	Newel Shape	Start	End	Door	Passage	Slits	Roof
Middleham												
Keep - lower	C	180	?	?	?	?	0	2	?	N	Y	N
Keep - upper	C	?	?	?	?	?	2	R	N	Y	?	Y
Chapel	C	110	35	18	18	O	0	1	93	Y	?	?
Princes Tower	A	108	43	20	18	O	0	4	?	N	Y	?
Garderobe Tower	C	110	43	20	18	O	0	2	93	Y	Y	?
Auditors Area	A	103	33	20	25	O	0	1	103	Y	?	N
NW Tower	?	?	?	?	?	?	1	3	?	?	?	?
Midhurst Cowdray castle												
NE Corner	C											
Monea Castle												
NW Tower	A	155	43	20			0	1	115	140	Y	N
N Wall	A	88	30	19	N		0	1			Y	N
Montgomery												
CLOSED												
Newark												
Gatehouse	A	?	?	?	?	?	0	3	?	Y	Y	Y
Great Hall	A	?	?	?	?	?	0	2	?	Y	Y	Y
Nunney												
S Corner	A	?	?	?	?	?	1	2	?	N	?	Y
Old Sherborne												
Gatehouse - SE Corner	A	?	?	?	?	?	1	2	?	N	Y	?

Location	C/A	Width	Outer tread	Riser	Newel	Newel Shape	Start	End	Door	Passage	Slits	Roof
Old Wardour												
North Tower	C	120	43	20	20	O	0	5	100	N	Y	Y
East of Entrance	C	96	47	20	28	O	0	5	103	N	Y	Y
SE Courtyard - lower	C	98	35	22	?	O	0	0.5	105	Y	N	N
SE Courtyard - upper	A	98	30	20	20	O	0.5	5	N	N	Y	Y
Private Apartments	A	98	33	20	20	O	1	3	110	Y	N	?
Oxwich Castle	A						0					
Oystermouth Castle	CLOSED											
Pennard castle	N											
Pevensey Castle												
N Gatehouse	C	105	45	20	20	0	0	?	Y	108	Y	?
S Gatehouse	C	68	33	20	18	0	-1	?	Y	83	?	?
N Tower												
E Tower												
Peveril												
Keep	C	83	35	20	20	O	0	1	83	Y	Y	Y
Pickering												
Mill Tower	C	?	?	?	?	?	1	R	?	N	Y	Y
Diate Hill Tower	C	68	?	?	?	O	1	2	73	Y	Y	Y
Pontefract	N											

Location	C/A	Width	Outer tread	Riser	Newel	Newel Shape	Start	End	Door	Passage	Slits	Roof
Pontefract	N											
Raglan												
Next to Pantry	C	130	50	20	N	N	-1	2	90	Y	W	?
Library	C	75	40	23	15	O	0	1	?	N	Y	?
Great Tower	C	138	58	18	15	O	0	4	123	Y	Y	Y
S Gate - E side	C	112	43	23	15	O	0	1	100	Y	Y	Y
S Gate - W side	C	112	43	23	15	O	0	1	93	Y	?	N
W of Bridge to Gt. Tower	A	110	53	19	N	N	0	1	N	N	W	?
W of Long Gallery	C	130	?	?	?	?	0	1	128	Y	?	?
Great Hall	C	?	?	?	?	?	1	2	?	?	?	?
Great Hall - dais end	C	?	?	?	?	?	?	?	98	?	?	?
Rhuddlan												
East Gatehouse - West side	C	110	?	?	?	?	0	2	97	?	?	N
East Gatehouse - East side	C	110	?	?	?	?	0	2	97	?	?	N
North Tower	C	?	?	?	?	?	?	?	?	?	?	N
Richards Castle	N											
Richmond												
Keep	A	68	35	23	18	O	0	1	68	Y	Y	N
Scolland's Hall	C	?	?	?	?	?	1	?	?	?	Y	Y
Rindown Castle	N											
Roscommon Castle	N											
Sandal	N											
Sedgewick Castle	N											
Skenfrith												
Keep	C	?	?	?	?	?	1	2	N	N	Y	Y
Stokesay	N											

Location	C/A	Width	Outer tread	Riser	Newel	Newel Shape	Start	End	Door	Passage	Slits	Roof
Swansea Castle												
Hall NW side												
Swavesey	N											
Tamworth												
MODERN STAIR												
Templehouse Castle	N											
Tour Jean sans Peur												
lower	C	186.5	143.5	18	22	O	0	3	Y	Y	Y	N
upper	C	88	47	18	16	O	3	4	Y	Y	Y	N
Tower, Nercwys	C	85	46	18	15	J	0	3	35	Y	Y	Y
Tretower												
Great Tower	C											
Shell Keep	C						0					
None												
Tully Castle												
Hall	C	75	25	13	?	?	1	1	Y	N	Y	N
Warkworth Castle												
W guardroom	A	?	?	?	?	0	1	5	Y	N	Y	Y
Lion Tower	A	83	33	19	?		0	3	95	163	N	Y
West Postern Tower	A	80	28	15	15	0	0	3	78	83	Y	Y
Chamber NE corner	C	80	38	22	?	?	1	2	63	90	Y	Y
Montague Tower	A	85	40	25	?	0	0	?	70	93	?	?
Chapel												
Cresswell Tower												

Location	C/A	Width	Outer tread	Riser	Newel	Newel Shape	Start	End	Door	Passage	Slits	Roof
Weobley Castle, Swansea												
Hall S side	A	?	?	?	?	?	1	2	Y	Y	Y	?
NW Tower	A	?	?	?	?	?	1	?	78	Y	Y	Y
to Guest Chamber	C	63	?	?	18	O	0	2	65	78	Y	?
White												
Inner Gatehouse - NE side	A	93	28	20	N	N	0	3	73	Y	Y	Y
Wigmore												
Keep	C	?	?	?	?	?	0	2	?	?	?	?
York												
East Lobe	A	92	42	20	13	J	0	1	92	Y	Y	Y
South Lobe	C	92	42	20	13	J	0	1	92	Y	Y	Y
Forebuilding	C	84	36	20	13	J	0	0.5	89	Y	Y	N
East Side	C	?	?	?	?	?	1	R	?	Y	?	Y
West Side	C	?	?	?	?	?	1	R	?	Y	?	Y

Non-Castle Structures

Location	C/A	Width	Outer tread	Riser	Newel	Newel Shape	Start	End	Door	Passage	Slits	Roof
Aachen Chapel												
S Stair	C	130	45	14	135	0	0	1	145	Y	Y	N
N Stair	A	130	45	14	135	0	0	1	145	Y	Y	N
Ashmanhough Church												
Saxon Round Tower	No stairs											
Battle Abbey												
Gatehouse	C	100	44	20	20	0	0	3	Y	Y	Y	Y
E of entrance	C	83	28	20	?	?	0	?	?	?	?	?
next to Gatehouse	C											
Bessingham												
Saxon Round Tower	No stairs											
Birchanger St Mary Church	N											
Bovolo												
Stair ground to 1st	C								N	N	N	N
Stair 1st to 2nd	C								N	N	N	N
Stair 2nd to 3rd	C								N	N	N	N
Brigstock Church												
Tower	C	68	38	20	12	0	0	?	64	95	Y	Y
Brixworth Church												
Tower	C	100	43	20	73	0	0	?	93	225	Y	Y
Burgh Castle												
Roman Fort	N											

Location	C/A	Width	Outer tread	Riser	Newel	Newel Shape	Start	End	Door	Passage	Slits	Roof
Burgh Castle Church												
Saxon Round Tower	N											
Rood screen N side	C	60	25	18	?	?	0	180 cm up	48	N	N	N
Buildwas Abbey												
South Transept SE corner	C	30	13	8	9	O	0	?	26	39	?	?
Byland												
North Transept	C	84	35	18	14	?	0	?	83	120	Y	?
Nave SW corner	C	98	35	18	?	?	0	?	80	145	?	?
South transept	C	?	?	?	?	?	0	?	?	?	?	?
Nave NW corner	C	?	?	?	?	?	1	?	Y	?	Y	?
Castle Acre Priory												
Gatehouse	A	115	35	18	12	J	0	?	143	N	Y	Probably
Church W End N Side	C	70	28	15	?	J	0	?	80	Y	?	Y
Church W End S Side	A	70	30	18	20	J	0	R	80	Y	Y	Y
S Transept	C	63	33	18	20	J	0	?	85	Y	?	Y
N Transept	A	73	33	20	25	J	0	R	65	Y	N	Y
Priors lodgings	A	73	25	15	18	J	0	1	75	Y	Y	N
Former Kitchen SE Corner	A	83	30	18	15	J	0	?	105	Y	?	?
Refectory SE Corner	C	63	33	18	15	J	0	?	65	N	?	?
Cresswell Tower												
CLOSED												
East Lexham Church												
Saxon Round Tower	N											
Rood screen S side	No Access											

Location	C/A	Width	Outer tread	Riser	Newel	Newel Shape	Start	End	Door	Passage	Slits	Roof
Fountains Abbey												
Chapel of 9 altars NW	C	?	?	?	Y	O	0	R	85	?	Y	y
Chapel of 9 altars SW	C	92	37	17	20	O	0	R	82	250	Y	Y
South of Chapel of 9 altars	C	82	37	20	15	O	0	?	70	117	?	?
Abbot's House North	C	100	50	17	15	O	0	?	60	77	?	?
Reredorter	C	85	45	19	17	O	0	?	105	142	?	?
Nave SW corner	C	?	?	?	?	?	0	?	85	Y	Y	?
South Transept	C	?	?	?	?	?	0	?	102	112	Y	Y
North Transept	C	?	?	?	?	?	0	?	Y	Y	Y	Y
Geddington Church	N											
Great Tay St. Barnabas												
Tower	C	65	25	23	15	0	1	R	65	80	Y	Y
Haughmond Abbey												
Abbot's Chamber SW corner	C	?	?	?	Y	?	1	2	Y	Y	?	Y
Abbot's Hall NW corner	C	90	20	20	no	no	0	2	70	108	Y	Y
Ickleton Church	N											
Ingram Church	N											
Lamphey Bishop's Palace												
Henry de Gower's Hall	C	75	30	18	15	O	1	R	73	83	Y	Y
Inner Gatehouse	A	77	23	23	no		no	0	1	77	90	Y	N
Lilleshall												
Nave SE corner	A	92	32	17	22	O	0	?	90	225	Y	Y
Little Shelford Church	N											
Longhaughton Church	N											

Location	C/A	Width	Outer tread	Riser	Newel	Newel Shape	Start	End	Door	Passage	Slits	Roof
Maastricht St. John Church												
Tower lower	C	73	38	18	18	0	0	1	70	120	Y	N
Tower middle	C	78	32	17	17	0	1	2	N	N	Y	N
Tower top	C	68	27	18	17	0	2	3	N	N	Y	Y
Michelham Priory												
Gatehouse	A	70	30	22	15	0	0	2	70	88	Y	Y
Midhurst St. Anne's	N											
North Elmham												
W Gate Tower	A	83	40	18	?	?	0	?	90	Y	?	?
E Gate Tower	no sign but 65" diameter 'hole'											
Rievaulx Abbey												
Nave SE corner	?	?	?	?	?	?	0	1	60	Y	Y	Y
Nave NW corner	C	77	35	20	20	O	0	?	80	182	?	?
Late Abbot's House	C	192	73	22	27	J	0	?	N	N	?	?
Refectory	C	100	35	17	16	O	0	1	83	150	Y	N
Early Abbots House	A	113	40	45	no	no	0	?	83	115	?	?
Roughton Church	N											
Sainte Chapelle												
North	C	80	42	18	33		0	1	Y	Y	Y	N
South	A	80	42	18	33		0	1	Y	Y	Y	N

Location	C/A	Width	Outer tread	Riser	Newel	Newel Shape	Start	End	Door	Passage	Slits	Roof
St David's Bishop's Palace												
Latrine block off Great Chamber	A	65	30	20	13	O	1	2	63	93	Y	N
Upper Latrine block off Great Chamber	C	60	30	18	13	O	2	R	N	N	Y	Y
Great Hall SW	C	105	30	20	11	O	0	1	N	N	N	N
Great Hall SE	A	103	28	18	11	O	0	1	N	N	N	N
Great Hall Left of door	C	?	?	?	?	?	1	?	N	68	Y	Y
to Bishop's Hall	A	108	30	15	11	O	0	1	N	N	N	N
from Bishop's Hall	C	77	28	20	11	J	1	2	N	N	Y	?
to Bishop's Hall	C	100	30	20	13	J	0	1	N	N	y	N
St. Dogmaels Priory												
North Transept	C	70	33	18	17	J	0	?	77	80	?	?
Nave southwest	C	65	33	20	15	J	0	?	68	80	?	?
West range	C	150	28	15	no	?	0	?	65	87	?	?
Strata Florida												
Nave SW corner	A	65	25	23	15	O	0	?	50	80	?	?
Nave NE corner	C	60	32	17	20	O	0	?	70	80	?	?
Strethall Church	N											
Tintern Abbey												
Night Stair to leads	A	68	30	18	?	?	1	?	63	N	Y	Y
S Transept	C	?	?	?	?	?	0	?	93	?	Y	Y
Early Abbots House	A	?	?	?	?	?	?	?	?	?	?	?
To Infirmary	C	63	22	?	13	O	0	?	?	?	?	?

Location	C/A	Width	Outer tread	Riser	Newel	Newel Shape	Start	End	Door	Passage	Slits	Roof
Valle Crucis												
North Transept	C	70	33	18	13	O	0	?	73	125	?	?
Pulpitium	C	65	33	20	15	O	0	?	75	95	?	?
West Front	C	?	?	?	?	?	0	?	80	125	Y	Y
Refectory	A	70	27	20	12	O	0	1	72	40	?	?
Wardhorn												
CLOSED												
Wendens Ambo												
wooden												
Wenlock Priory												
South Transept	C	73	35	18	Y	?	0	1	Y?	?	?	N
North Transept	C	88	45	18	Y	?	0	1	93	Y	?	N
Infirmary main Stair	C	88	40	19	20	O	0	2	Y	Y	Y	?
From Kitchen	C	75	35	30	20	O	0	1	53	93	N	?
From 1/F to 2/F	C	75	30	20	20	O	1	2	60	95	N	?
From Wunderkabinett to 1/F	C	75	35	30	20	O	0	1	48	88	N	?
Whittingham Church	N											
Woodhorn Church												
CLOSED												

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